

# INTERNATIONAL BUILDING CODE – GENERAL

**G1-09/10**  
**202, 419.1**

## **Proposed Change as Submitted**

**Proponent:** Maureen Traxler representing Washington Association of Building Officials Technical Code Development Committee

### **1. Add new definition as follows:**

#### **SECTION 202 DEFINITIONS**

**LIVE/WORK UNIT.** *A dwelling unit or sleeping unit in which a significant portion of the space includes a nonresidential use that is operated by the tenant. See Section 419.*

### **2. Revise as follows:**

**419.1 General.** ~~A live/work unit is a dwelling unit or sleeping unit in which a significant portion of the space includes a nonresidential use that is operated by the tenant and shall comply with Sections 419.1 through 419.8.~~

**Exception:** Dwelling or sleeping units that include an office that is less than 10 percent of the area of the dwelling unit ~~shall not be classified as a live/work unit~~ are permitted to be classified as dwelling units with accessory occupancies in accordance with Section 508.2.

**Reason:** The term live/work unit is found in several sections of the IBC, including Sections 310, 419, 508 and 1103, so the definition should be located in Chapter 2. This proposed definition of live/work unit is currently contained within 419, but not identified as a definition.

Section 419 is revised to relocate the definition of "live/work unit" to Chapter 2. The exception to Section 419.1 is revised to more clearly coordinate with the accessory occupancy provisions of Section 508.2.

**Cost Impact:** The code change proposal will not increase the cost of construction.

ICCFILENAME: TRAXLER-G1-202

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee supported the concept of moving the definition to Chapter 2 because it is a definition that applies throughout the code, however it was felt that the wording of the definition needed to be refined. Referrals to code sections within definitions are inappropriate and only used in Chapter 2 when the definition itself is located in a different section. The committee felt that the language of the exception to Section 419.1 needed further refinement.

**Assembly Action:**

**None**

## Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

*Public Comment:*

**Maureen Traxler representing Washington Association of Building Officials Technical Code Development Committee, requests Approval as Modified by this Public Comment.**

Modify the proposal as follows:

### SECTION 202 DEFINITIONS

**LIVE/WORK UNIT.** A dwelling unit or sleeping unit in which a significant portion of the space includes a nonresidential use that is operated by the tenant. ~~See Section 419.~~

*(Portions of proposal not shown remain unchanged)*

**Commenter's Reason:** This comment moves the definition of "live/work unit" to Chapter 2, but deletes the inappropriate cross reference that was found in the original proposal. The term is used in other chapters so it should not be located in Section 419.

Final Action:                    AS                    AM                    AMPC\_\_\_\_                    D

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## G9-09/10 202 (NEW)

### Proposed Change as Submitted

**Proponent:** Tony Crimi, A.C., Consulting Solutions Inc., representing North American Insulation Manufacturers Association

Add new text as follows:

### SECTION 202 DEFINITIONS

**NONCOMBUSTIBLE MATERIAL.** A material that will not ignite or burn when subjected to specified fire or heat conditions. Materials that meet the acceptance criteria of ASTM E 136 are considered noncombustible materials.

**Reason:** There is a need for a definition of "noncombustible material" in the IBC. Several of the I-Codes have varying definitions of the term "non-combustible material", each based upon the way in which the concept of "non-combustible" is used within that Code. Throughout the ICC code system, the concept of "noncombustible material" is based on the idea that the material should not ignite or burn when subjected to fire or heat. The IBC, which uses the term extensively, does not contain a specific definition.

The concept of "noncombustible materials" and "noncombustibility" in terms of types of construction is widely used throughout the International Codes. While the IRC, IMC, and IWUIC all contain definitions of the term, they are all different from each other.

In contrast, the IBC, IFC, IEBC and IFGC do not contain a separate definition, even though they use the terminology "non-combustible materials". There is a need for a consistent definition of "noncombustible material" in all ICC codes that use the term.

In common usage, the term "noncombustible" is used to denote materials which do not ignite or are not capable of sustaining combustion. The common Dictionary definitions for "noncombustible" are typically as follows:

**Noncombustible, adj** – not capable of igniting and burning (Webster's Third New International Dictionary of the English Language, Unabridged, 2007)

In contrast to the common usage, the traditional use of the terminology and concept of "noncombustible materials" in the Codes has been based on acceptable performance when tested in accordance with ASTM E136, Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C. Materials passing the test are permitted limited flaming and other indications of combustion. However, these have traditionally been acceptable. Understandably, ASTM E136 does not replicate the full spectrum of actual building fire exposure conditions. However, this test method does provide an assessment indicating those materials which do not act to aid combustion or add appreciable heat to an ambient fire.

While each of the model I-Codes which reference the term "noncombustible" do have unique additional attributes, we are in agreement with the original proponent, that these are best addressed outside of the definition. For example, section 703.4 of the IBC does provide additional requirements and acceptance criteria which are specific to its own intent and contained in Sections 602.2, 602.3, and 602.4. However, this section only describes "Noncombustibility Tests", rather than providing a definition.

**Cost Impact:** The code change proposal will not increase the cost of construction.

## Public Hearing Results

Committee Action:

Disapproved

**Committee Reason:** The committee did not believe that the proposed definition of non-combustible reflected all of the various uses of the term in the code. Installing this definition could unintentionally affect application of other provisions.

Assembly Action:

None

### Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

*Public Comment:*

**Tony Crimi, A.C., Consulting Solutions Inc., representing North American Insulation Manufacturers' Association (NAIMA), requests Approval as Modified by this Public Comment.**

Modify the proposal as follows:

**NONCOMBUSTIBLE MATERIAL-INSULATION.** A material installed for thermal or acoustical purposes, that will not ignite or burn when subjected to specified fire or heat conditions. Materials that meet the acceptance criteria of ASTM E 136 or ASTM E 2652 are considered non-combustible.

2. Add new to Chapter 35 as follows:

**ASTM**

E 2652-09                      Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C.

**Commenter's Reason:** There is no general definition of "noncombustible material" in the IBC. Section 703.4 identifies "Non-Combustibility Tests", but only for the purpose of providing criteria for acceptance of building materials related to types of Construction in Sections 602.2, 602.3 and 602.4 (i.e. Type I, II, III and IV construction). It further clarifies that the term "noncombustible" does not apply to the flame spread characteristics of *interior finish* or *trim* materials, and states that a material shall not be classified as a noncombustible building construction material if it is subject to an increase in combustibility or flame spread beyond the limitations herein established through the effects of age, moisture or other atmospheric conditions.

Several of the I-Codes have varying definitions of the term "non-combustible material", each based upon the way in which the concept of "non-combustible" is used within that Code. Throughout the ICC code system, the concept of "noncombustible material" is based on the idea that the material should not ignite or burn when subjected to fire or heat

The IBC, which uses the term extensively, does not contain a specific definition for "non-combustible material". In terms of insulation materials, there is a need to clearly delineate requirements for flame spread, foamed plastics, and non-combustible insulations.

In common usage, the term "noncombustible" is used to denote materials which do not ignite or are not capable of sustaining combustion. The common Dictionary definitions for "noncombustible" are typically as follows:

**Noncombustible, adj** – not capable of igniting and burning (Webster's Third New International Dictionary of the English Language, Unabridged, 2007)

In the traditional use of the terminology and concept of "non-combustible" in the Codes has been based on acceptable performance when tested in accordance with ASTM E136, Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C. Materials passing the test are permitted limited flaming and other indications of combustion. However, these have traditional been acceptable. Understandably, ASTM E136 does not replicate the full spectrum of actual building fire exposure conditions. However, this test method does provide an assessment indicating those materials which do not act to aid combustion or add appreciable heat to an ambient fire.

ASTM has recently published another standard ASTM E2652-09, entitled Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C. This test method is similar to ASTM E136, and based more on the international standard (ISO) for noncombustibility. The key difference between the two standards is in the equipment. The apparatuses in this test method and in Test Method E 136 is that the furnace tube in this test method has a conical air-flow stabilizer section attached at its bottom. Both test methods use cylindrical furnace tubes. The test Standard does not include mandatory pass/fail criterion. It allows those criteria to be determined by the Codes or other users. Appendix X3 also contains a comparison of results obtained from this apparatus versus ASTM E136. The results are quite consistent.

This additional method should also now be incorporated into the IBC as an appropriate test method.

**Analysis:** The standard, ASTM E2562, was not reviewed or considered by the General Code Development Committee prior to the Baltimore hearings and it was not considered by the hearing attendees at the time of the code development hearings. Section 3.6.3.1 of Council Policy # 28, *Code Development*, requires that new standards be introduced in the original code change proposal, therefore, the introduction of a new standard via a public comment is not in accordance with the process required by CP # 28 for adding new standards to the code.

Final Action:            AS            AM            AMPC \_\_\_\_\_            D

## G15-09/10

202, 304.1 (IFC [B] 202), 304.1.1 304.2, 422, 710.5, [F] 903.2.2, [F] 903.3.2, [F] 907.2.2, [F] 907.2.2.1 (IFC 903.2.2, 903.3.2, 907.2.2, 907.2.2.1)

### Proposed Change as Submitted

**Proponent:** Paul K. Heilstedt, P.E., Chair, representing ICC Code Technology Committee (CTC)

#### 1. Revise as follows:

**304.1 (IFC [B] 202) Business Group B.** Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Ambulatory health care facilities  
Clinic – outpatient

*(Portions of list not shown remain unchanged)*

**304.1.1 304.2 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

*(Relocate definition for Ambulatory Health Care Facilities from Section 202, and revise.)*

**AMBULATORY HEALTH CARE FACILITY.** Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to individuals who are rendered incapable of self-preservation by the services provided.

**CLINIC-OUTPATIENT.** Buildings or portions thereof used to provide medical care on less than a 24-hour basis to individuals who are not rendered incapable of self-preservation by the services provided.

### SECTION 422 AMBULATORY HEALTH CARE FACILITIES

**422.1 General.** Occupancies classified as ~~Group B~~ ambulatory health care facilities shall comply with the provisions of Sections 422.1 through ~~422.6~~ 422.7 and other applicable provisions of this code.

**422.2 Separation.** Ambulatory care facilities where the potential for four or more care recipients are to be incapable of self preservation at any time, whether rendered incapable by staff or staff accepted responsibility for a care recipient already incapable, shall be separated from adjacent spaces, corridors or tenants with a fire partition installed in accordance with Section 708.

~~422.2 422.3~~ **Smoke barriers compartments.** Smoke barriers shall be provided to subdivide every Where the aggregate area of one or more ambulatory health care facilities greater than exceeds 10,000 square feet on one story, the story shall be provided with a smoke barrier to subdivide the story into not less than into a minimum of two smoke compartments per story. The area of any one such smoke compartment shall not exceed 22,500 square feet (2092 m<sup>2</sup>). The travel distance from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be installed in accordance with Section 710 with the exception that smoke barriers shall be continuous from outside wall to an outside wall, a floor to a floor, or from a smoke barrier to a smoke barrier or a combination thereof.

~~422.3~~ **422.4 Refuge area.** At least 30 net square feet (2.8 m<sup>2</sup>) per nonambulatory patient care recipient shall be provided within the aggregate area of corridors, patient care recipient rooms, treatment rooms, lounge or dining areas and other low-hazard areas on each side of each smoke barrier within each smoke compartment. Each occupant of an ambulatory care facility shall be provided with access to a refuge areas without passing through or utilizing adjacent tenant spaces.

**422.4 422.5 Independent egress.** A means of egress shall be provided from each smoke compartment created by smoke barriers without having to return through the smoke compartment from which means of egress originated.

**422.5 422.6 Automatic Sprinkler Systems.** Automatic sprinklers systems shall be provided for ambulatory care facilities in accordance with Section 903.2.2.

**422.6 422.7 Fire alarm systems.** A fire alarm system shall be provided for ambulatory care facilities in accordance with Section 907.2.2.1.

**710.5 Openings.** Openings in a *smoke barrier* shall be protected in accordance with Section 715.

**Exceptions:**

1. In Group I-2 and ambulatory care facilities, where doors are installed across *corridors*, a pair of opposite-swinging doors without a center mullion shall be installed having vision panels with fire-protection-rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested. The doors shall be close fitting within operational tolerances, and shall not have undercuts in excess of 3/4-inch, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges and shall be automatic closing by smoke detection in accordance with Section 715.4.8.3. Where permitted by the door manufacturer's listing, positive-latching devices are not required.
2. In Group I-2 and ambulatory care facilities, horizontal sliding doors installed in accordance with Section 1008.1.4.3 and protected in accordance with Section 715.

**[F] 903.2.2 (IFC 903.2.2) Group-B ambulatory health care facilities.** An automatic sprinkler system shall be installed throughout all fire areas containing an ~~Group-B ambulatory health care facility occupancy~~, when either of the following conditions exist at any given time:

1. Four or more care recipients are incapable of self preservation, whether rendered incapable by staff or staff have accepted responsibility for care recipients already incapable.
2. One or more care recipients that are incapable of self preservation are located at other than the level of exit discharge.

In buildings where care is provided on levels other than the level of exit discharge, an automatic sprinkler system shall be installed on the entire floor where care is provided as well as all floors below, and all floors between the level of care and the closest level of exit discharge.

**[F] 903.3.2 (IFC 903.3.2) Quick-response and residential sprinklers.** Where automatic sprinkler systems are required by this code, quick-response or residential automatic sprinklers shall be installed in the following areas in accordance with Section 903.3.1 and their listings:

1. Throughout all spaces within a smoke compartment containing ~~patient~~ sleeping units in Group I-2 in accordance with this code.
2. Throughout all spaces within a smoke compartment containing treatment rooms in ambulatory care facilities.
3. ~~2.~~ Dwelling units, and sleeping units in Group R and I-1 occupancies.
4. ~~3.~~ Light-hazard occupancies as defined in NFPA 13.

**[F] 907.2.2 (IFC 907.2.2) Group B.** A manual fire alarm system shall be installed in Group B occupancies where one of the following conditions exists:

1. The combined Group B *occupant load* of all floors is 500 or more.
2. The Group B *occupant load* is more than 100 persons above or below the lowest *level of exit discharge*.
3. The ~~Group-B fire area~~ contains a ~~Group-B ambulatory health care facility~~.

**Exception:** Manual fire alarm boxes are not required where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

**[F] 907.2.2.1 (IFC 907.2.2.1) Group-B ambulatory health care facilities.** Fire areas containing ~~Group-B ambulatory health care facilities~~ shall be provided with an electronically supervised automatic smoke detection system installed within the ambulatory ~~health care facility~~ and in public use areas outside of tenant spaces, including public *corridors* and elevator lobbies.

**Exception:** Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, provided the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

**Reason:** The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April/2005, the CTC has held seventeen meetings - all open to the public.

This proposed change is a result of the CTC's investigation of the area of study entitled "Care Facilities". The scope of the activity is noted as: Study issues associated with Day Care/Adult Care, Ambulatory Health Care and Assisted Living facilities with an emphasis on the number of occupants in relation to the supervision, and the determination of the resident's capability of responding to an emergency situation without physical assistance from the facility's supervision.

The Code Technology Committee Study Group on Care Facilities has conducted a comprehensive review of current building and fire codes, federal regulations and prior code change proposals dealing with the provision of "care". "Care" as it relates to the scope of this work relates to an occupant of a building who is compromised (mentally or physically) and receives some type of support (care). These facilities encompass a full spectrum of acuity and span a wide range of occupancy types including Groups B, E, I and R. On the lower end of the spectrum, occupants may be aged and receive occasional day living assistance such as cooking and cleaning. On the opposite end of the spectrum, occupants may be completely bedridden and dependant on medical gases and emergency power to maintain life.

The proposed changes provide clear direction for design and construction by using terms and concepts consistently and clearly identifying thresholds related to the condition of an occupant. Federal regulations and state licensing provisions were considered, but primarily in terms of avoiding conflicting requirements. It is not the intent of these changes to address licensing or operational issues. We do believe that the proposed changes will provide consistent and correlated language between these multiple sources of regulations that will help design and code professionals address the needs of care recipients in the many different types of facilities.

A major goal is to provide clarity and consistency of terminology. New definitions are added to specifically describe each type of care or facility and identify the distinct differences in these. Some terms are consolidated to be more descriptive of a group of occupants, yet generic enough to be used interchangeably. For example: a "Patient" is now identified as a "care recipient" and "nurse" is now "care provider". People receive care of varying types but they are not always referred to as "patients". They receive care from a wide range of persons with different technical abilities, not just a "nurse" or "staff". Other definitions address existing terms not defined within current code. The study group believes that these changes bring a practical response to the recent developments within the healthcare delivery system.

#### **Ambulatory Care Facilities, Section 422 and related sections**

This public comment represents the collaborative efforts to address the more specifically concerns regarding these uses over the past several cycles.

Change modifying the existing language includes:

Remove an unneeded reference to "Health" as the definition clearly expresses that these types of facilities are related to some form or care. Also relocate the definition to Section 304.2 to align with the formatting of other Groups that provide definitions for special occupancies within that specifically related section.

Remove an unneeded reference to "Group B" whenever the term Ambulatory Health Care Facility is used.

Added Section 422.2 to require fire partition separation from adjacent spaces in facilities with greater than 4 care recipients. The intent is to subdivide the floor to allow for a reasonable level of safety for care recipients who made need assistance to evacuate, or to allow for the option of protecting in place for a limited period of time.

Modified the continuity requirements of a smoke barrier to deal with intersection or connection to adjacent tenants, and maintain the integrity and safety.

Several of these changes are mindful of existing buildings to allow for renovations without going into other tenant spaces.

Added 22,500 square foot limit to a smoke compartment, similar to Group I-2s.

For multiple tenant spaces, language is added to the area of refuge requirements to clarify that the area of refuge must be accessed without going through adjacent tenant spaces.

Correlative changes to Sections 710, 903 and 907 are bringing consistency of terminology and provision cross references.

**Cost Impact:** This proposal will increase the cost of construction.

ICCFILENAME: HEILSTEDT-G2-304.1.doc

## **Public Hearing Results**

**Committee Action:**

**Approval as Submitted**

**Committee Reason:** The changes clarify the regulations of the ambulatory care facilities. It will also result in the IBC requirements being more consistent with CMS standards than they are currently.

**Assembly Action:**

**None**

## Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

### *Public Comment:*

**Joe Pierce, Dallas Fire Department, representing Joint Fire Service Review Committee, requests Approval as Modified by this Public Comment.**

#### **Modify the proposal as follows:**

**[F] 903.2.2 (IBC 903.2.2) Ambulatory care facilities.** An automatic sprinkler system shall be installed throughout ~~all fire areas~~ the entire floor containing an ambulatory care facility, when either of the following conditions exist at any given time:

1. Four or more care recipients are incapable of self preservation, whether rendered incapable by staff or staff have accepted responsibility for care recipients already incapable.
2. One or more care recipients that are incapable of self preservation are located at other than the level of exit discharge.

In buildings where care is provided on levels other than the level of exit discharge, an automatic sprinkler system shall be installed on the entire floor where care is provided as well as all floors below, and all floors between the level of care and the closest level of exit discharge, including the level of exit discharge.

*(Portions of proposal not shown remain unchanged)*

**Commenter's Reason:** Item F68-09/10 was Approval as Submitted and addresses several of the same issues as this revision in G15-09/10. Item F68 was approved as follows:

**903.2.2 (IBC [F] 903.2.2) Group B Ambulatory health care facilities.** An *automatic sprinkler system* shall be installed throughout ~~all fire areas~~ the entire floor containing a Group B ambulatory health care facility ~~occupancy~~ and all floors between the ambulatory health care facility and the level of exit discharge, including the level of exit discharge when either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self preservation.
2. One or more care recipients that are incapable of self preservation are located at other than the *level of exit discharge* serving such an occupancy.

As you can see, both code change proposals revised the following items:

1. Deletion of the word "occupancy"
2. Requirement to have the fire sprinkler installed from the floor of the ambulatory care facility and the level of exit discharge; however each proposal worded this in a different fashion.

G15 additionally revised the title of the facility to simply "ambulatory care facility". F68 also required the fire sprinkler system to be installed on the entire floor, not just the fire area. G15 also requires the entire floor to sprinklered when on a floor other than the level of exit discharge.

This Public Comment combines all the revisions between the two code changes. The last phrase in the final paragraph is added to ensure that the level of exit discharge is included in the floors requiring fire sprinklers.

Final Action:                    AS                    AM                    AMPC \_\_\_\_\_                    D

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## G16-09/10

305.1, 305.2 (New), 305.2 (IFC [B] 202); 308.5, 308.5.1, 308.5.2 (IFC [B] 202), 310.2; [F] 903.2.6 (IFC 903.2.6); 1015.1, Table 1015.1, 1015.7 (New), 1021.2, Table 1021.2 (IFC [B] 1015.1, Table 1015.1, 1015.7 (New), 1021.2, Table 1021.2); 1103.2.12; [P] Table 2902.1, [P] 2903.1, [P] 2903.2 (IPC Table 403.1, 403.1, 403.2)

### Proposed Change as Submitted

**Proponent:** Paul K. Heilstedt, P.E., Chair, representing ICC Code Technology Committee (CTC)

#### 1. Revise as follows:

#### SECTION 305 EDUCATIONAL GROUP E

**305.1 (IFC [B] 202) Educational Group E.** Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade.

**Exception:** Religious educational rooms and religious auditoriums, which are accessory to *places of religious worship* in accordance with Section 303.1 and have *occupant loads* of less than 100, shall be classified as a Group A-3 occupancies.

**305.2 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

*(Relocated definition for Personal Care Service from Section 310.2, and revise.)*

**PERSONAL CARE SERVICE.** The care of ~~residents~~ occupant's who do not require ~~chronic or convalescent~~ medical or nursing care. Personal care involves responsibility for the safety of the ~~residents~~ occupants while inside the building.

**305.2 305.3 (IFC [B] 202) Group E, Day care facilities.** The use of a building or structure, or portion thereof, for educational, supervision or *personal care services* or more than five children older than 2 1/2 years of age, shall be classified as a Group E occupancy.

A facility such as the above within a dwelling unit and having five or fewer persons shall be classified as a Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2.

#### SECTION 308 INSTITUTIONAL GROUP I

**308.5 (IFC [B] 202) Group I-4, day care facilities.** This group shall include buildings and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents or guardians, relatives by blood, marriage or adoption, and in a place other than the home of the person cared for. ~~A facility such as the above five or fewer persons shall be classified as a Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2. Places of worship during religious functions are not included. This group shall include, but not be limited to, the following:~~

Adult day care  
Child day care

~~**308.5.1 (IFC [B] 202) Adult care facility.** A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and custodial care shall be classified as Group I-4.~~

~~**Exception:** A facility where occupants are capable of responding to an emergency situation without physical assistance from the staff shall be classified as Group R-3.~~

~~**308.5.2 (IFC [B] 202) Child care facility.** A facility that provides supervision and custodial care on less than a 24-hour basis for more than five children 2 1/2 years of age or less shall be classified as Group I-4.~~



**Exceptions:**

1. A child day care facility that provides custodial care for more than five but no more than 100 children 2-1/2 years or less of age, when the rooms where such children are cared for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.
2. Rooms and spaces within places of worship providing such care during religious functions shall be classified as part of the primary occupancy.

A facility such as the above within a dwelling unit and having five or fewer persons shall be classified as a Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2.

**[F] 903.2.6 (IFC 903.2.6) Group I.** An *automatic sprinkler system* shall be provided throughout buildings with a Group I fire area.

**Exceptions:**

1. An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 or 903.3.1.3 shall be allowed in Group I-1 facilities.
2. An *automatic sprinkler system* is not required where day care facilities are at the *level of exit discharge* and where every room where care is provided has at least one exterior *exit door*.
3. In buildings where Group I-4 day care is provided on levels other than the level of exit discharge, an *automatic sprinkler system* in accordance with 903.3.1.1 shall be installed on the entire floor where care is provided as well as all floors below, and all floors between the level of care and the closest level of exit discharge.

**1015.1 (IFC [B] 1015.1) Exits or exit access doorways from spaces.** Two *exits* or *exit access doorways* from any space shall be provided where one of the following conditions exists:

**Exception:** Group I-2 occupancies shall comply with Section 1014.2.2 through 1014.2.7.

1. The *occupant load* of the space exceeds one of the values in Table 1015.1.

**Exception:** In Group R-2 and R-3 occupancies, one *means of egress* is permitted within and from individual dwelling units with a maximum *occupant load* of 20 where the dwelling unit is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.

2. The *common path of egress travel* exceeds one of the limitations of Section 1014.3.
3. Where required by Section 1015.3, 1015.4, 1015.5, 1015.6 or 1015.6.1, or 1015.7.

Where a building contains mixed occupancies, each individual occupancy shall comply with the applicable requirements for that occupancy. Where applicable, cumulative *occupant loads* from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1.

**TABLE 1015.1 (IFC [B] TABLE 1015.1)  
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY**

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E <sup>a</sup> , F, M, U	49
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	29

a. Day care maximum occupant load is 10.

**2. Add new text as follows:**

**1015.7 (IFC [B] 1015.7) Day care means of egress.** Day care facilities, rooms or spaces where care is provided for more than 10 children that are 2-1/2 years of age or less, shall have access to not less than two exits or exit access doorways.

**3. Revise as follows:**

**1021.2 (IFC [B] 1021.2) Single exits.** Only one *exit* shall be required from Group R-3 occupancy buildings or from stories of other buildings as indicated in Table 1021.2. Occupancies shall be permitted to have a single *exit* in buildings otherwise required to have more than one *exit* if the areas served by the single *exit* do not exceed the limitations of Table 1021.2. Mixed occupancies shall be permitted to be served by single *exits* provided each individual occupancy complies with the applicable requirements of Table 1021.2 for that occupancy. Where applicable, cumulative *occupant loads* from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1. Basements with a single *exit* shall not be located more than one *story* below *grade plane*.

**TABLE 1021.2 (IFC [B] TABLE 1021.2)  
STORIES WITH ONE EXIT**

STORY	OCCUPANCY	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
First story or basement	A, B <sup>d</sup> , E <sup>e</sup> , F <sup>d</sup> , M, U, S <sup>d</sup>	49 occupants and 75 feet travel distance
	H-2, H-3	3 occupants and 25 feet travel distance
	H-4, H-5, I, R	10 occupants and 75 feet travel distance
	S <sup>a</sup>	29 occupants and 100 feet travel distance
Second story	B <sup>d</sup> , F, M, S <sup>a</sup>	29 occupants and 75 feet travel distance
	R-2	4 dwelling units and 50 feet travel distance
Third story	R-2 <sup>c</sup>	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm.

- a. For the required number of exits for parking structures, see Section 1021.1.2.
- b. For the required number of exits for air traffic control towers, see Section 412.3.
- c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
- d. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
- e. ~~Day care occupancies shall have a maximum occupant load of 10.~~

**1103.2.12 Day care facilities.** Where a day care facility (Groups A-3, E, I-4 and R-3) is part of a dwelling unit, only the portion of the structure utilized for the day care facility is required to be accessible.

**[P] TABLE 2902.1 (IPC TABLE 403.1)  
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES<sup>a</sup>  
(See Sections 2902.2 and 2902.3)**

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS/SHOWERS	DRINKING FOUNTAINS <sup>e, f</sup> (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				MALE	FEMALE	MALE	FEMALE			
5	Institutional	I-4	Adult day care and child day care	1 per 15		1 per 15		1	1 per 100	1 service sink

(Portions of table not shown are unchanged.)

**[P] 2903.1 (IPC 403.1) Water closet compartment.** Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.

**Exceptions:**

1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.
2. Toilet rooms located in ~~day care and~~ child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.
3. This provision is not applicable to toilet areas located within Group I-3 housing areas.

**[P] 2903.2 (IPC 403.2) Urinal partitions.** Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The walls or partitions shall begin at a height not more than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal a minimum of 18 inches (457 mm) or to a point not less than 6

inches (152 mm) beyond the outermost front lip of the urinal measured from the finished back wall surface, whichever is greater.

**Exceptions:**

1. Urinal partitions shall not be required in a single occupant or unisex toilet room with a lockable door.
2. Toilet rooms located in ~~day care~~ and child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.

**Reason:** The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April/2005, the CTC has held seventeen meetings - all open to the public.

This proposed change is a result of the CTC's investigation of the area of study entitled "Care Facilities". The scope of the activity is noted as: Study issues associated with Day Care/Adult Care, Ambulatory Health Care and Assisted Living facilities with an emphasis on the number of occupants in relation to the supervision, and the determination of the resident's capability of responding to an emergency situation without physical assistance from the facility's supervision.

The Code Technology Committee Study Group on Care Facilities has conducted a comprehensive review of current building and fire codes, federal regulations and prior code change proposals dealing with the provision of "care". "Care" as it relates to the scope of this work relates to an occupant of a building who is compromised (mentally or physically) and receives some type of support (care). These facilities encompass a full spectrum of acuity and span a wide range of occupancy types including Groups B, E, I and R. On the lower end of the spectrum, occupants may be aged and receive occasional day living assistance such as cooking and cleaning. On the opposite end of the spectrum, occupants may be completely bedridden and dependant on medical gases and emergency power to maintain life.

The proposed changes provide clear direction for design and construction by using terms and concepts consistently and clearly identifying thresholds related to the condition of an occupant. Federal regulations and state licensing provisions were considered, but primarily in terms of avoiding conflicting requirements. It is not the intent of these changes to address licensing or operational issues. We do believe that the proposed changes will provide consistent and correlated language between these multiple sources of regulations that will help design and code professionals address the needs of care recipients in the many different types of facilities.

A major goal is to provide clarity and consistency of terminology. New definitions are added to specifically describe each type of care or facility and identify the distinct differences in these. Some terms are consolidated to be more descriptive of a group of occupants, yet generic enough to be used interchangeably. For example: a "Patient" is now identified as a "care recipient" and "nurse" is now "care provider". People receive care of varying types but they are not always referred to as "patients". They receive care from a wide range of persons with different technical abilities, not just a "nurse" or "staff". Other definitions address existing terms not defined within current code. The study group believes that these changes bring a practical response to the recent developments within the healthcare delivery system.

**Day Care Facilities, Section 305.3 and related sections**

This public comment represents the collaborative efforts of the CTC Study Group on Care to clarify the scope and intent of the code as it applies to the subject of when care is provided and what are the appropriate elements of the building code to address the risks associated with Day Care. Changes to modify the existing language include:

Changing the provisions for religious educational facilities to become an exception.

Adding a definition section for the educational group and moving the definition of personal care services from 310.2 to 305.2, clarifying the day care as a day care facility, and adding the correlation to classify that a Group E, day care facility with five or fewer is allowed in an R-3 or may be constructed per the IRC.

Adding clarifications to the I-4 Group to include both adult and child day care services, and adding an exception for such services within a place of worship, and clarifying that day care facility with five or fewer is allowed in an R-3 or may be constructed per the IRC.

Correlating the requirements for fire suppression in Chapter 9 with the provisions for day care.

Clarifying the requirement for means of egress from day care where more than 10 children receive care.

Removing the occupancy group designations from the scoping criteria in Chapter 11 as being unnecessary, C

Clarifying that the plumbing table is applicable for day care, and that the exclusion for partitions is meant to apply to child day care, not all day care.

Issues concerning the multitude of occupancies, conflicting criteria and/or confusion between the occupancies identified as "Day Care vs. Child or Adult Day Care" were the initial impetus for the study of care. The overlap and inconsistencies for all types of care were eventually included once the true scope of the issues was recognized.

**Cost Impact:** The code change proposal will not increase the cost of construction.

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**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The change would leave a gap in the code for facilities where 1 to 5 people are receiving care but they are not located in a dwelling unit. The proposal appeared to not provide an occupancy classification for this size of facilities.

**Assembly Action:**

**None**

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## Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

### *Public Comment 1:*

**Paul K. Heilstedt, PE, Hon. AIA, Chair, representing the ICC Code Technology Committee (CTC), requests Approval as Modified by this Public Comment.**

Further modify the proposal as follows:

**305.3 (IFC [B] 202) Group E, Day care facilities.** The use of a building or structure, or portion thereof, for educational, supervision or *personal care services* ~~or for~~ more than five children older than 2 1/2 years of age, shall be classified as a Group E occupancy.

**305.3.1 Five or fewer children.** A facility having five or fewer persons receiving such care shall be classified as part of the primary occupancy.

**305.3.2 Five or fewer in a dwelling unit.** A facility such as the above within a dwelling unit and having five or fewer persons receiving such care shall be classified as a Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2.

**308.5 (IFC [B] 202) Group I-4, day care facilities.** This group shall include buildings and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents or guardians, relatives by blood, marriage or adoption and in a place other than the home of the person cared for. This group shall include, but not be limited to, the following:

Adult day care  
Child day care

#### **Exceptions:**

1. A child day care facility that provides custodial care for more than five but no more than 100 children 2-1/2 years or less of age, when the rooms where such children are cared for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.
2. Rooms and spaces within places of worship providing such care during religious functions shall be classified as part of the primary occupancy.
3. A building or space that has more than 5 people that receive custodial care and are occupants of that building or space as their place of employment or as a volunteer.

**308.5.1 Five or fewer occupants receiving care.** A facility having five or fewer persons receiving such care shall be classified as part of the primary occupancy.

**308.5.2 Five or fewer occupants receiving care in a dwelling unit.** A facility such as the above within a dwelling unit and having five or fewer persons receiving such care shall be classified as a Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2.

**[F] 903.2.6 (IFC 903.2.6) Group I.** An *automatic sprinkler system* shall be provided throughout buildings with a Group I *fire area*.

#### **Exceptions:**

1. An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 or 903.3.1.3 shall be allowed in Group I-1 facilities.
2. An *automatic sprinkler system* is not required where day care facilities are at the *level of exit discharge* and where every room where care is provided has at least one exterior *exit door*.
3. In buildings where Group I-4 day care is provided on levels other than the level of exit discharge, an automatic sprinkler system in accordance with 903.3.1.1 shall be installed on the entire floor where care is provided ~~as well as all floors below~~, and all floors between the level of care and the ~~lowest~~ level of exit discharge, all floors below the level of exit discharge, other than areas classified as an open parking garage.

*(Portions of proposal not shown are unchanged)*

**Reason:** The code change committee correctly noted in Sections 305.3 and 308.5 that there are gaps where the occupants receiving care are not in a dwelling unit. This public comment maintains intent of the original proposal but clarifies that the threshold number of individuals are those receiving care and not the total occupant load of the dwelling unit. The additions of Exception 3 to Section 308.5 addresses the instance where there are people that may need or receive custodial care but are not in the building for that purpose; it is their place of employment. Examples are facilities such as Goodwill or Salvation Army that provides employment opportunities for persons that need custodial care in the course of their work day.

The proposed revisions to Exception 3 in Section 903.2.6 clarifies the application of the sprinkler system based on code parameters of "level of exit discharge".

*Public Comment 2:*

**Maureen Traxler City of Seattle, representing the Department of Planning & Development, requests Approval as Modified by this Public Comment.**

Further modify the definition of PERSONAL CARE SERVICE as in the original proposal, and move to Chapter 2.

**PERSONAL CARE SERVICE.** The care of occupants who do not require medical care. Personal care involves responsibility for the safety of the occupants while inside the building.

*(Portions of proposal not shown remain unchanged.)*

**Commenter's Reason:** The term "personal care service" is used in several code sections (305, 308 & 310), and so belongs in Chapter 2 rather than in one of the sections of Chapter 3.

*Public Comment 3:*

**Maureen Traxler, City of Seattle, representing the Department of Planning & Development, requests Approval as Modified by this Public Comment.**

Further modify the proposal as follows:

**SECTION 305  
EDUCATIONAL GROUP E**

**305.1 (IFC [B] 202) Educational Group E.** Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade.

**305.1.1 Accessory to places of worship.** Religious educational rooms and religious auditoriums, which are accessory to *places of religious worship* in accordance with Section 303.1 and have *occupant loads* of less than 100, shall be classified as Group A-3 occupancies.

**305.2 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

*(Relocated definition for Personal Care Service from Section 310.2, and revise.)*

**PERSONAL CARE SERVICE.** The care of ~~residents~~ occupants who do not require ~~chronic or convalescent~~ medical ~~or nursing~~ care. Personal care involves responsibility for the safety of the ~~residents~~ occupants while inside the building.

~~**305.2 305.3 (IFC [B] 202) Group E, Day care facilities.** This group includes buildings and structures or portions thereof occupied by more than five children older than 2-1/2 years of age who receive educational, supervision or *personal care services* for less than 24 hours per day. The use of a building or structure, or portion thereof, for educational, supervision or *personal care services* or more than five children older than 2-1/2 years of age, shall be classified as a Group E occupancy.~~

~~**305.3.1 Within places of worship.** Rooms and spaces within places of worship providing such care during religious functions shall be classified as part of the primary occupancy.~~

~~**305.3.2 Five or fewer children.** A facility having five or fewer children receiving such care shall be classified as part of the primary occupancy.~~

~~**305.3.3 Five or fewer in a dwelling unit.** A facility such as the above within a dwelling unit and having five or fewer children receiving such care shall be classified as a Group R-3 occupancy or shall comply with the *International Residential Code*.~~

**SECTION 308  
INSTITUTIONAL GROUP I**

~~**308.5 (IFC [B] 202) Group I-4, day care facilities.** This group shall include buildings and structures occupied by more than five persons of any age who receive custodial care for less than 24 hours per day by individuals other than parents or guardians, relatives by blood, marriage or adoption, and in a place other than the home of the person cared for. ~~A facility such as the above five or fewer persons shall be classified as a Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2. Places of worship during religious functions are not included.~~ This group shall include, but not be limited to, the following:~~

~~Adult day care  
Child day care~~

~~**308.5.1 (IFC [B] 202) Adult care facility.** A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and custodial care shall be classified as Group I-4.~~

~~**Exception:** A facility where occupants are capable of responding to an emergency situation without physical assistance from the staff shall be classified as Group R-3.~~

**308.5.2 (IFC [B] 202) Child care facility.** A facility that provides supervision and custodial care on less than a 24-hour basis for more than five children 2-1/2 years of age or less shall be classified as Group I-4.

**Exception:**

**308.5.1 Classification as Group E.** A child day care facility that provides custodial care for more than five but no more than 100 children 2-1/2 years or less of age, when the rooms where such children are cared for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

**308.5.2 Within a place of worship.** Rooms and spaces within places of worship providing such care during religious functions shall be classified as part of the primary occupancy.

**308.5.3 Five or fewer occupants receiving care.** A facility having five or fewer persons receiving custodial care shall be classified as part of the primary occupancy.

**308.5.4 Five or fewer occupants receiving care in a dwelling unit.** A facility such as the above within a dwelling unit and having five or fewer persons receiving custodial care shall be classified as a Group R-3 occupancy or shall comply with the *International Residential Code*.

**Commenter's Reason:** This modification carries out the intent of the original proposal in a more comprehensive, focused and coordinated manner. It focuses on clarifying the relationship between E and I day cares by using parallel charging language in Sections 305.3 and 308.5. Both E and I classifications apply where more than 5 occupants receive care for less than 24 hours per day. The differences are that Group E only applies where the occupants are children older than 2-1/2 years and they are receiving educational, supervision or personal care services and not custodial care.

First please note that this public comment provides a consistent format in Sections 305.1, 305.3 and 308.5 in which each provision that establishes an exception to the classification and places a building use into a different classification is specified in its own subsection rather than as exceptions or a sentence lost in the main occupancy section.

This public comment adds to Section 305.3 the same 'exception' that was originally proposed only for Section 308.5. The 'exception' allows areas used for care of children during religious functions to be considered part of the main occupancy.

New subsections are proposed in both Sections 305.3 and 308.5 that set forth the classification for occupancies with five or fewer people receiving care.

This public comment does not make any changes to the substantive provisions in chapters other than Chapter 3.

Final Action: AS AM AMPC\_\_\_\_\_ D

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## G20-09/10

**308.1, 308.2, 308.3, 308.3.1, 310.1, 310.2, (IFC [B] 202); [F] 903.2.6, [F] 903.2.8, [F] 903.3.1.3, [F] 903.3.2, [F] 907.2.6, [F] 907.2.6.2, (IFC 903.2.6, 903.2.8, 903.3.1.3, 903.3.2, 907.2.6, 907.2.6.2); Table 1021.2 (IFC [B] Table 1021.2); 1107.5.3; [P] Table 2902.1 (IPC Table 403.1)**

### **Proposed Change as Submitted**

**Proponent:** Paul K. Heilstedt, P.E., Chair, representing ICC Code Technology Committee (CTC)

**Revise as follows:**

**308.1 (IFC [B] 202) Institutional Group I.** Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which ~~people are cared for or live in a supervised environment, having physical limitations because of health or age are harbored for medical treatment or other care or treatment, or in which people are detained for penal or correctional purposes or in which the liberty of the occupants is restricted care or supervision is provided to individuals who, are or are not capable of self preservation without physical assistance or in which people are detained for penal or correctional purposes or in which the liberty of the occupants is restricted.~~ Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4.

**308.2 1 (IFC [B] 202) Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

*(Relocate revised definitions from Section 308.3.1, and revise.)*

**24 HOUR CARE.** The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours.

**CUSTODIAL CARE.** Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living, usually on a long-term basis. Custodial care include occupants who evacuate at a slower rate and/or who have mental and psychiatric complications.

**DETOXIFICATION FACILITIES.** ~~Facilities that serve patients who are~~ provided treatment for substance abuse ~~on a 24-hour basis and~~ serving care recipients who are incapable of self-preservation or who are harmful to themselves or others.

**CHILD FOSTER CARE FACILITIES.** ~~Facilities that provide care on a 24-hour basis to~~ more than five children, 2<sup>1</sup>/<sub>2</sub> years of age or less,

**HOSPITALS AND MENTAL PSYCHIATRIC HOSPITALS.** ~~Facilities buildings or portion thereof used on a 24-hour basis that provides care or treatment for the medical, psychiatric, obstetrical, or surgical treatment of inpatients who care recipients that~~ are incapable of self-preservation.

**INCAPABLE OF SELF PRESERVATION.** Persons because of age; physical limitations; mental limitations; chemical dependency; or medical treatment cannot respond as an individual to an emergency situation.

**MEDICAL CARE.** Care involving medical or surgical procedures, nursing or for psychiatric purposes.

**NURSING HOMES.** ~~Nursing homes are long-term care~~ Facilities that provide long-term care on a 24-hour basis, including both intermediate care facilities and skilled nursing facilities, ~~servicing more than five persons and where any of the persons are incapable of self-preservation.~~

**308.2 308.3 (IFC [B] 202) Group I-1.** This occupancy shall include buildings, structures or portions thereof ~~housing for more than 16 persons who reside on a 24 hour basis who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services and receive custodial care.~~ The occupants are capable of ~~responding to an emergency situation without physical assistance from staff~~ self preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- Initial stage Alzheimer's facilities
- Residential board and custodial care facilities
- Social rehabilitation facilities

A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. A facility such as above, housing at least six and not more than 16 persons, shall be classified as Group R-4.

**308.3 308.4 (IFC [B] 202) Group I-2.** This occupancy shall include buildings and structures used for medical, ~~surgical, psychiatric, nursing or custodial care~~ on a 24 hour basis for more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

- Foster Child care facilities
- Detoxification facilities
- Hospitals
- Nursing homes
- ~~Mental~~ Psychiatric hospitals

A facility such as the above with five or fewer residents shall be classified as Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2.

**308.3.1 (IFC [B] 202) Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

*(Relocate revised definitions to Section 308.2)*

**310.1 (IFC [B] 202) Residential Group R.** Residential Group R includes, among others, the use of a building, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the International Residential Code in accordance with Section 101.2. Residential occupancies shall include the following:

**R-1** Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

- Boarding houses (transient)
- Hotels (transient)
- Motels (transient)

Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

**R-2** Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

- Apartment houses
- Boarding houses (not transient)
- Convents
- Dormitories
- Fraternities and sororities
- Hotels (nontransient)
- Live/work units
- Monasteries
- Motels (nontransient)
- Vacation timeshare properties

Congregate living facilities with 16 or fewer individuals are permitted to comply with the requirements for Group R-3.

**R-3** Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, or I, including:

- Buildings that do not contain more than two dwelling units.
- ~~Adult care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.~~
- ~~Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.~~
- Care facilities as that provide accommodations for five or fewer persons
- Congregate living facilities with 16 or fewer individuals.

~~Adult care and child~~ Care facilities for 5 or fewer individuals receiving care that are within a single-family home dwellings are permitted to comply with the International Residential Code.

**R-4.** This occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24 hour basis in a supervised residential environment and receive custodial care. The occupants are capable of self preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- Initial stage Alzheimer's facilities
- Residential board and custodial care facilities
- Social rehabilitation facilities

~~Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff.~~



Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code or shall comply with the *International Residential Code* provided the building is protected by an *automatic sprinkler system* installed in accordance with Section 903.2.8.

**310.2 (IFC [B] 202) Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**BOARDING HOUSE.** A building arranged or used for lodging for compensation, with or without meals, and not occupied as a single-family unit.

**CONGREGATE LIVING FACILITIES.** A building or part thereof that contains sleeping units where residents share bathroom and/or kitchen facilities.

**DORMITORY.** A space in a building where group sleeping accommodations are provided in one room, or in a series of closely associated rooms, for persons not members of the same family group, under joint occupancy and single management, as in college dormitories or fraternity houses.

**GROUP HOME.** A facility for social rehabilitation, substance abuse or mental health problems that contain a group housing arrangement that provides custodial care but does not provide acute care.

~~**RESIDENTIAL CARE/ASSISTED LIVING FACILITIES.** A building or part thereof housing persons on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.~~

**TRANSIENT.** Occupancy of a *dwelling unit* or *sleeping unit* for not more than 30 days.

**[F] 903.2.6 (IFC 903.2.6) Group I.** An *automatic sprinkler system* shall be provided throughout buildings with a Group I *fire area*.

**Exception:** An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 or 903.3.1.3 shall be ~~allowed~~ permitted in Group I-1 facilities.

**[F] 903.2.8 (IFC 903.2.8) Group R.** An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R *fire area*.

An *automatic sprinkler system* installed in accordance with 903.3.1.3 shall be permitted in congregate residences with 16 or fewer residents. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals a single family dwelling.

**[F] 903.3.1.3 (IFC 903.3.1.3) NFPA 13D sprinkler systems.** *Automatic sprinkler systems* installed in one and two-family *dwelling*s, Group R-3 and R-4 congregate residences and *townhouses* shall be permitted to be installed throughout in accordance with NFPA 13D.

**[F] 903.3.2 (IFC 903.3.2) Quick-response and residential sprinklers.** Where automatic sprinkler systems are required by this code, quick-response or residential automatic sprinklers shall be installed in the following areas in accordance with Section 903.3.1 and their listings:

1. Throughout all spaces within a smoke compartment containing ~~patient care recipient~~ care recipient sleeping units in Group I-2 in accordance with this code.
2. Dwelling units, and sleeping units in Group R and I-1 occupancies.
3. Light-hazard occupancies as defined in NFPA 13.

**[F] 907.2.6 (IFC 907.2.6) Group I.** A manual fire alarm system that activates the occupant notification system shall be installed in Group I occupancies. An automatic smoke detection system that activates the occupant notification system shall be provided in accordance with Sections 907.2.6.1, 907.2.6.2 and 907.2.6.3.3.

**Exceptions:**

1. Manual fire alarm boxes in ~~resident or patient~~ sleeping units of Group I-1 and I-2 occupancies shall not be required at *exits* if located at all ~~nurses' care providers'~~ control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.4.2 are not exceeded.
2. Occupant notification systems are not required to be activated where private mode signaling installed in accordance with NFPA 72 is *approved* by the fire code official.

**[F] 907.2.6.2 (IFC 907.2.6.2) Group I-2.** An automatic smoke detection system shall be installed in *corridors* in nursing homes, long term care facilities (~~both intermediate care and skilled nursing facilities~~), detoxification facilities and spaces permitted to be open to the *corridors* by Section 407.2. The system shall be activated in accordance with Section 907.5. Hospitals shall be equipped with smoke detection as required in Section 407.

**Exceptions:**

1. *Corridor* smoke detection is not required in smoke compartments that contain ~~patient~~ sleeping units where such units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the *corridor* side of each ~~patient~~ *sleeping unit* and shall provide an audible and visual alarm at the ~~care provider~~ *nursing* station attending each unit.
2. *Corridor* smoke detection is not required in smoke compartments that contain ~~patient~~ *sleeping units* where ~~patient~~ *sleeping unit* doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

**1021.2 (IFC [B] 1021.2) Single exits.** Only one *exit* shall be required from Group R-3 occupancy buildings or from stories of other buildings as indicated in Table 1021.2. Occupancies shall be permitted to have a single *exit* in buildings otherwise required to have more than one *exit* if the areas served by the single *exit* do not exceed the limitations of Table 1021.2. Mixed occupancies shall be permitted to be served by single *exits* provided each individual occupancy complies with the applicable requirements of Table 1021.2 for that occupancy. Where applicable, cumulative *occupant loads* from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1. Basements with a single *exit* shall not be located more than one *story* below *grade plane*.

**TABLE 1021.2 (IFC [B] TABLE 1021.2)  
STORIES WITH ONE EXIT**

STORY	OCCUPANCY	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
First story or basement	A, B <sup>d</sup> , E <sup>e</sup> , F <sup>d</sup> , M, U, S <sup>d</sup>	49 occupants and 75 feet travel distance
	H-2, H-3	3 occupants and 25 feet travel distance
	H-4, H-5, I, R, <del>R-1, R-2, R-4</del>	10 occupants and 75 feet travel distance
	S <sup>a</sup>	29 occupants and 100 feet travel distance
Second story	B <sup>b</sup> , F, M, S <sup>a</sup>	29 occupants and 75 feet travel distance
	R-2	4 dwelling units and 50 feet travel distance
Third story	R-2 <sup>c</sup>	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm.

- a. For the required number of exits for parking structures, see Section 1021.1.2.
- b. For the required number of exits for air traffic control towers, see Section 412.3.
- c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
- d. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
- e. Day care occupancies shall have a maximum occupant load of 10.

**1107.5.3 Group I-2 hospitals.** Accessible units and Type B units shall be provided in General-purpose hospitals, psychiatric facilities, and detoxification facilities and residential care/assisted living facilities of Group I-2 occupancies in accordance with Sections 1107.5.3.1 and 1107.5.3.2.

**[P] TABLE 2902.1 (IPC TABLE 403.1)  
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES<sup>a</sup>  
(See Sections 2902.2 and 2902.3)**

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS <sup>e</sup> f (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				MALE	FEMALE	MALE	FEMALE			
7	Residential	R-3	Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-4	Residential care/assisted living facilities Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink

*(Portions of table not shown remain unchanged.)*

**Reason:** The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April/2005, the CTC has held seventeen meetings - all open to the public.

This proposed change is a result of the CTC's investigation of the area of study entitled "Care Facilities". The scope of the activity is noted as:

Study issues associated with Day Care/Adult Care, Ambulatory Health Care and Assisted Living facilities with an emphasis on the number of occupants in relation to the supervision, and the determination of the resident's capability of responding to an emergency situation without physical assistance from the facility's supervision.

The Code Technology Committee Study Group on Care Facilities has conducted a comprehensive review of current building and fire codes, federal regulations and prior code change proposals dealing with the provision of "care". "Care" as it relates to the scope of this work relates to an occupant of a building who is compromised (mentally or physically) and receives some type of support (care). These facilities encompass a full spectrum of acuity and span a wide range of occupancy types including Groups B, E, I and R. On the lower end of the spectrum, occupants may be aged and receive occasional day living assistance such as cooking and cleaning. On the opposite end of the spectrum, occupants may be completely bedridden and dependant on medical gases and emergency power to maintain life.

The proposed changes provide clear direction for design and construction by using terms and concepts consistently and clearly identifying thresholds related to the condition of an occupant. Federal regulations and state licensing provisions were considered, but primarily in terms of avoiding conflicting requirements. It is not the intent of these changes to address licensing or operational issues. We do believe that the proposed changes will provide consistent and correlated language between these multiple sources of regulations that will help design and code professionals address the needs of care recipients in the many different types of facilities.

A major goal is to provide clarity and consistency of terminology. New definitions are added to specifically describe each type of care or facility and identify the distinct differences in these. Some terms are consolidated to be more descriptive of a group of occupants, yet generic enough to be used interchangeably. For example: a "Patient" is now identified as a "care recipient" and "nurse" is now "care provider". People receive care of varying types but they are not always referred to as "patients". They receive care from a wide range of persons with different technical abilities, not just a "nurse" or "staff". Other definitions address existing terms not defined within current code. The study group believes that these changes bring a practical response to the recent developments within the healthcare delivery system.

**Group I-1, I-2, R-4; Section 308 and related correlations**

Change modifying the existing language includes:

A modification is proposed to the general charging language of Group I to more clearly express the various types of occupancy conditions found within Group I.

Consolidate the definitions from Section 308.3.1 and 308.1 to create a definition Section 308.2 for all of Group I, consistent with current format within the code. Some of the definitions have been modified to add clarity; others are new to remove confusion of meaning and intent.

Modified the general language of specific use occupancies within Group I and R to reflect the new definitions proposed and be more current with industry and licensing descriptions, but not the provisions.

Modifications or additions have been made to the example listings of uses and correlate the terminology for a consistency of application. The threshold of more than 5 persons was added to the first paragraph of Group I-2 and the last sentence was added after the example listing to allow for families to care for person without becoming an I-2 use. This also correlates how the occupancies with less than 5 persons are handled in the other care facilities.

The definition of Child Care Facilities has been to Foster Care Facilities and the provision of 24 hours was removed as it is redundant to the general language of an I-2 use. Foster Care for more than 5, children 2 ½ years of age or less is still an I-2 use. Facilities providing care to 6 to 16 children greater than 2 ½ years of age, is an R-4 and facilities for greater than 16 children it will be an I-1. Additionally, this will eliminate the confusion between day care and 24 hour care facilities.

In Section 903.2.6 it is proposed to delete the option for the NFPA13D sprinkler system for Group I-1 because a NFPA 13D system is not permitted based on the threshold for Group I-1 being greater than 16 occupants. The sprinkler requirements for Group R is generic and currently not clear for facilities such as small congregate residences. As a small assisted living facility, the NFPA 13D sprinkler system is appropriate permitted in Group R-4 (see the revisions to Section 903.2.8) as well as other congregate residences with 16 or fewer occupants. Indicating the used in Section 903.1.3 clarifies that congregate residences with 16 or fewer occupants, while not single family dwellings, are permitted to use NFPA 13D systems. This is consistent with NFPA13D requirements. This was permitted specifically for Group R-4 in the 2000 IBC. This would also be consistent with Fair Housing Act court cases based on non-discrimination for group homes.

Changes proposed beyond Chapter 3 are correlative in nature to reflect the new definitions or provisions previously allowed under chapter 3 provisions but not correlated for ease of use.

**Cost Impact:** This proposal will not increase the cost of construction.

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## **Public Hearing Results**

**Committee Action:**

**Approved as Modified**

**Modify the proposal as follows:**

**308.2 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**DETOXIFICATION FACILITIES.** Facilities that ~~provided~~ provide treatment for substance abuse serving care recipients who are incapable of self-preservation or who are harmful to themselves or others.

**HOSPITALS AND PSYCHIATRIC HOSPITALS.** Facilities that ~~provides~~ provide care or treatment for the medical, psychiatric, obstetrical, or surgical treatment of inpatients care recipients that are incapable of self-preservation.

**[F] 903.2.8 (IFC 903.2.8) Group R.** An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R *fire area*.

An *automatic sprinkler system* installed in accordance with 903.3.1.3 shall be permitted in congregate residences with 16 or fewer residents. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals in a single family dwelling.

*(Portions of proposal not shown remain unchanged)*

**Committee Reason:** The change reflects a collaborative effort to refine and clarify the various care occupancies. The committee remains concerned about the definition of foster care and its relationship to various state laws. In addition there was concern regarding undefined terms introduced by the change, specifically "Initial stage Alzheimer's" and 'long term care'. The committee acknowledged that this is not the same as the various state regulations, but provided a better framework for states to coordinate their regulations. On balance, the change improves the code and the committee hopes to see public comments to clarify the definitions.

**Assembly Action:**

**None**

## **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because public comments were submitted.**

*Public Comment 1:*

**Paul K. Heilstedt, PE, Hon. AIA, Chair, representing ICC Code Technology Committee (CTC), requests Approval as Modified by this Public Comment.**

**Further modify proposal as follows:**

**308.2 (IFC [B] 202) Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**CUSTODIAL CARE.** Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living, ~~usually on a long-term basis~~. Custodial care include occupants who evacuate at a slower rate and/or who have mental and psychiatric complications.

**NURSING HOMES.** Facilities that provide ~~long-term~~ care, including both intermediate care facilities and skilled nursing facilities, where any of the persons are incapable of self-preservation.

**308.3 (IFC [B] 202) Group I-1.** This occupancy shall include buildings, structures or portions thereof for more than 16 persons who reside on a 24 hour basis in a supervised environment and receive custodial care. The occupants are capable of self preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- ~~Initial stage Alzheimer's facilities~~
- Residential board and custodial care facilities
- Social rehabilitation facilities

A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. A facility such as above, housing at least six and not more than 16 persons receiving such care, shall be classified as Group R-4.

**[F] 903.2.8 (IFC 903.2.8) Group R.** An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R *fire area*.

An *automatic sprinkler system* installed in accordance with 903.3.1.3 shall be permitted in congregate residences with 16 or fewer residents. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals in a single family dwelling.

*(Portions of proposal not shown remain unchanged.)*

**Commenter's Reason:** While the code committee agreed that the code change clarifies various care occupancies, they noted in there reason for As Modified the concern over vague terminology, specifically in regards to "long term care" and "Initial stage Alzheimer's". The CTC agrees and submits this public comment in order to rectify those concerns and correlate the language "receiving such care" in Section 308.3 to that added in G16 -09/10.

## *Public Comment 2:*

### **Ed Altizer, Virginia State Fire Marshall's Office, requests Approval as Modified by this Public Comment.**

**Further modify the proposal as follows:**

#### **1. Add definition to 308.2 (IFC [B] 202)**

**ASSISTED LIVING FACILITIES.** Custodial care congregate residential settings that provide or coordinate personal and health care services, 24-hour supervision, and assistance (scheduled and unscheduled) for the maintenance or care of adults who are aged, infirm or disabled and who are cared for in a primarily residential setting. Maintenance or care means the protection, general supervision and oversight of the physical and mental well-being of an aged, infirm or disabled individual. Residents may or may not need assistance to evacuate.

#### **2. Revise as follows:**

**308.3 (IFC [B] 202) Group I-1.** This occupancy shall include buildings, structures or portions thereof housing for more than 16 persons who reside on a 24 hour basis who because of age, mental disability or other reasons, live in a supervised residential environment that provides *personal care services* and receive custodial care. The occupants are capable of self preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities with residents capable of self preservation
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- Initial stage Alzheimer's facilities
- Residential board and custodial care facilities
- Social rehabilitation facilities

**308.4 (IFC [B] 202) Group I-2.** This occupancy shall include buildings and structures used for medical or custodial care on a 24 hour basis for more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

- Assisted living facilities with residents incapable of self preservation
- Foster Child care facilities
- Detoxification facilities
- Hospitals
- Nursing homes
- Psychiatric hospitals

A facility such as the above with five or fewer residents shall be classified as Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2.

*(Portions of proposal not shown remain unchanged.)*

**Commenter's Reason:** Requesting further modification to G20-09/10. The current proposal in G20-09/10 limits I-2 to only medical care facilities which in itself would be in conflict with foster child care facilities. There are many facilities housing residents incapable of self preservation that are not medical facilities by state definitions. As an example, assisted living facilities are a group in Virginia that are not medical facilities but are licensed care facilities and can house residents incapable of self preservation. The term assisted living facility is also used in the I-1 laundry list but G20 removes the definition. This proposal to modify G20 would add a definition of assisted living facilities and include them as well as other care facilities in the I-2 use group.

### **Public Comment 3:**

#### **Joe Pierce, Chairman - Joint Fire Service Review Committee, requests Approval as Modified by this Public Comment.**

##### **Further modify the proposal as follows:**

**308.4 (IFC [B] 202) Group I-2.** This occupancy shall include buildings and structures used for medical care on a 24 hour basis for more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

- Child care facilities
- Detoxification facilities
- Hospitals
- Nursing homes
- Psychiatric hospitals

A facility such as the above with five or fewer residents shall be classified as Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2 provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or *International Residential Code* Section P2904.

**310.1 (IFC [B] 202) Residential Group R.** Residential Group R includes, among others, the use of a building, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the International Residential Code in accordance with Section 101.2. Residential occupancies shall include the following:

**R-1** Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

- Boarding houses (transient)
- Hotels (transient)
- Motels (transient)

Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

**R-2** Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

- Apartment houses
- Boarding houses (not transient)
- Convents
- Dormitories
- Fraternities and sororities
- Hotels (nontransient)
- Live/work units
- Monasteries
- Motels (nontransient)
- Vacation timeshare properties

Congregate living facilities with 16 or fewer individuals are permitted to comply with the requirements for Group R-3.

**R-3** Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, or I, including:

- Buildings that do not contain more than two dwelling units.
- Care facilities ~~as~~ that provide accommodations for five or fewer persons
- Congregate living facilities with 16 or fewer individuals.

Care facilities for 5 or fewer individuals receiving care that are within a single-family dwellings are permitted to comply with the *International Residential Code* provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or *International Residential Code* Section P2904.

**R-4** This occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24 hour basis in a supervised residential environment and receive custodial care. The occupants are capable of self preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities

- Group homes
- Halfway houses
- Initial stage Alzheimer's facilities
- Residential board and custodial care facilities
- Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.

*(Portions of proposal not shown remain unchanged)*

**Commenter's Reason:** This Public Comment revises the reference to construct small I-2 facilities and care facilities housed in a dwelling constructed under the IRC. This Public Comment will continue to allow the smaller facilities to be constructed either as an R-3, or under the IRC. When the IBC is used to construct an R-3, the facility will be equipped with fire sprinklers. And if the option is exercised to build the facility under the IRC, the facility must also be equipped with fire sprinklers. These revisions specify that even though the IRC is used, the facility must still be equipped with fire sprinklers. These occupancies, even though housing less than six occupants, still have the same clientele as the larger occupancy.

In the IBC, the reference to 903.3.1.3 is the appropriate reference and sends the user to NFPA 13D. In the IRC, Section P2904 is the appropriate reference, and Section P2904 can be used to design the fire sprinkler system or it also provides the option to use NFPA 13D.

If a new structure is built, it will be required to be sprinklered. A new facility can be constructed either as an R-3 under the IBC which will require a fire sprinkler system, or as a one-family dwelling under the IRC which will also require a fire sprinkler system is installed. However, many congregate care facilities open and occupy an existing structure. This revision will require that when an existing single family home is used as a small congregate care facility, it will also be sprinklered.

### *Public Comment 4:*

**Joe Pierce, Chair, representing Joint Fire Service Review Committee, requests Approval as Modified by this Public Comment.**

**Further modify proposal as follows:**

**308.3 (IFC [B] 202) Group I-1.** This occupancy shall include buildings, structures or parts thereof for more than 16 *persons* who reside on a 24-hour basis in a supervised environment and receive custodial care. The occupants are capable of self-preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- Initial stage Alzheimer's facilities
- Residential board and custodial care facilities
- Social rehabilitation facilities

A facility such as the above with five or fewer ~~persons~~ residents shall be classified as Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2 provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or International Residential Code Section P2904.

A facility such as above, housing at least six and not more than 16 *persons*, shall be classified as Group R-4.

*(Portions of proposal not shown remain unchanged)*

**Commenter's Reason:** This Public Comment revises the reference to construct small I-1 facilities constructed under the IRC. This Public Comment will continue to allow the smaller congregate care facilities to be constructed either as an R-3, or under the IRC.

When the IBC is used to construct an R-3, the facility will be equipped with fire sprinklers. And if the option is exercised to build the facility under the IRC, the facility must also be equipped with fire sprinklers. These revisions specify that even though the IRC is used, the facility must still be equipped with fire sprinklers. These occupancies, even though housing less than six occupants, still have the same clientele as the I-1 occupancy. The facility is still a Group Home, a Congregate Care Facility, or an Assisted Living Facility, etc.

In the IBC, the reference to 903.3.1.3 is the appropriate reference and sends the user to NFPA 13D. In the IRC, Section P2904 is the appropriate reference, and Section P2904 can be used to design the fire sprinkler system or it also provides the option to use NFPA 13D.

If a new structure is built, it will be required to be sprinklered. A new facility can be constructed either as an R-3 under the IBC which will require a fire sprinkler system, or as a one-family dwelling under the IRC which will also require a fire sprinkler system is installed. However, many congregate care facilities open and occupy an existing structure. This revision will require that when an existing single family home is used as a small congregate care facility, it will also be sprinklered.

In the first line of the paragraph the term "persons" is replaced with the term "residents". This is consistent with the revision in the charging paragraph which refers to the number of persons who reside in the facility. This would not include daytime employees for example.

### *Public Comment 5:*

**Joe Pierce, Chairman - Joint Fire Service Review Committee, requests Approval as Modified by this Public Comment.**

**Further modify the proposal as follows:**

**[F] 903.2.8 (IFC 903.2.8) Group R.** An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in Group R-3 or R-4 congregate residences with 16 or fewer residents. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals a in single family dwelling.

*(Portions of proposal not shown remain unchanged)*

**Commenter’s Reason:** This code change currently allows all Group R buildings to be protected with a fire sprinkler system design according to Section 903.3.1.3, which is NFPA 13D. The approved code change allowed all congregate residences to use NFPA 13D as the design standard. This Public Comment will limit the application of NFPA 13D fire sprinkler systems to congregate residences when classified as Group R-3 or R-4.

The NFPA 13D standard is only applicable to one- and two-family dwellings. A one- and two-family dwelling is what you will find within the classification of Group R-3 or R-4. The other R occupancies such as R-1 and R-2 cannot be protected with a fire sprinkler system designed according to NFPA 13D.

This Public Comment will allow the reference to appropriately apply to R-3 and R-4 occupancies.

Final Action:                    AS                    AM                    AMPC\_\_\_\_                    D

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## **G21-09/10**

**308.2 (IFC 202), 310.1, 310.2, 420.1, 420.2, 420.4 (New), 420.4.1 (New), 420.4.2 (New), 420.4.3 (New), 420.5 (New), 420.5.1 (New), Table 503, 504.2, 508.2.4, 508.3.3, Table 706.4, 710.5, 1006.1, 1107.6.4.1; IFC 903.2.6, 907.2.6.1, 907.5.2.3.3**

### **Proposed Change as Submitted**

**Proponent:** Daniel Purgiel, LRS Architects Inc.

#### **1. Revise as follows:**

**308.2 (IFC [B] 202) Group I-1.** This occupancy shall include buildings, structures or parts thereof housing more than ~~46~~ five persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants require physical assistance with evacuation in responding to an emergency situation. ~~The occupants are capable of responding to an emergency situation without physical assistance from staff.~~ This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Alzheimer’s facilities
- Assisted living facilities
- ~~Congregate care facilities~~
- Convalescent facilities
- Group homes
- ~~Halfway houses~~
- Residential board and care facilities
- ~~Social rehabilitation facilities~~

A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2. A facility such as above, housing at least six and not more than 16 persons, ~~shall be classified as Group R-4.~~ shall meet the requirements for construction as defined for Group R-3, except as otherwise provided in this code or shall comply with the *International Residential Code*, provided the building complies with Section 903.2.6. A facility such as above, where occupants are capable of responding to an emergency situation without physical assistance, shall be classified as Group R-4.

**310.1 (IFC [B] 202) Residential Group R.** Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *International Residential Code* in accordance with Section 101.2. Residential occupancies shall include the following:

**R-1** Residential occupancies where the occupants are primarily transient in nature, including:



Boarding houses (transient)  
Hotels (transient)  
Motels (transient)

Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

**R-2** Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

Apartment houses  
Boarding houses (not transient)  
Convents  
Dormitories  
Fraternities and sororities  
Hotels (nontransient)  
Monasteries  
Motels (nontransient)  
Vacation timeshare properties

Congregate living facilities with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

**R-3** Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I including:

Buildings do not contain more than two dwelling units.

Adult facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.

Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.

Congregate living facilities with 16 or fewer persons.

Adult and child care facilities that are within a single-family home are permitted to comply with the *International Residential Code*.

**R-4** ~~Residential occupancies shall include buildings, arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff. Residential occupancies located in buildings or portions thereof housing more than five persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance. This group shall include, but not be limited to, the following:~~

Alcohol and drug centers  
Assisted living facilities  
Congregate care facilities  
Convalescent facilities  
Group homes  
Halfway houses  
Residential board and care facilities  
Social rehabilitation facilities

Group R-4 occupancies housing 16 or fewer persons, shall meet the requirements for construction as defined for Group R-3 except as otherwise provided for in this code, or shall comply with the *International Residential Code* provided the building is protected by an automatic sprinkler system installed in accordance with Section 903.2.7.

**310.2 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**RESIDENTIAL CARE/ASSISTED LIVING FACILITIES.** A building or part thereof housing persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal care services. ~~The occupants are capable of responding to an emergency situation without physical~~

~~assistance from staff. The occupants are not bedridden, except during temporary sickness. Occupancy classification is based on the ability of occupants to respond to an emergency situation with or without physical assistance. This classification Residential care/ assisted living facilities shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.~~

*(Definitions not shown are unchanged.)*

## **SECTION 420 GROUPS I-1, R-1, R-2, R-3 and R**

**420.1 General.** Occupancies in Groups I-1, R-1, R-2, R-3 and R shall comply with the provisions of this section and other applicable provisions of this code.

**420.2 Separation walls.** Walls separating dwelling units in the same building, walls separating sleeping units in the same building and walls separating dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 709.

**Exception:** Walls separating dwelling units and sleeping units within Groups I-1 and R-4 occupancies, housing 16 or fewer persons are not required to be constructed as fire partitions.

**420.3 Horizontal separation.** Floor assemblies separating dwelling units in the same buildings, floor assemblies separating sleeping units in the same building and floor assemblies separating dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as horizontal assemblies in accordance with Section 712.

### **2. Add new text as follows:**

**420.4 Groups I-1 Smoke barriers.** Group I-1 occupancies housing more than 16 residents shall be provided with smoke barriers in accordance with Section 710. Smoke barriers shall subdivide every story used by residents for sleeping or treatment into at least two smoke compartments. Each smoke compartment shall have a maximum of 16 sleeping rooms, or 10,500 square feet (976 m<sup>2</sup>), whichever is less, and the travel distance from any point in a smoke compartment to a smoke barrier door shall not exceed 150 feet (60 960 mm).

**420.4.1 Refuge area.** At least 6 net square feet (0.56 m<sup>2</sup>) of refuge area per resident shall be provided within the aggregate area of corridors, treatment rooms, or other low hazard common space rooms on each side of each smoke barrier.

**420.4.2 Independent egress.** A means of egress shall be provided from each smoke compartment created by smoke barriers without having to return through the smoke compartment from which means of egress originated.

**420.4.3 Horizontal assemblies.** Horizontal assemblies supporting smoke barriers required by this section shall be designated to resist the movement of smoke and shall comply with Section 712.9.

**420.5 Group I-1 corridors.** Group I-1 occupancies shall have an exit access door from dwelling units or sleeping rooms leading directly to a corridor. Corridors in Group I-1 shall be continuous to the exits and separated from other areas in accordance with Section 1018, except areas conforming to Section 420.5.1

**Exception:** Sleeping rooms and dwelling units with exit doors opening directly to the exterior at ground level shall not be required to have an exit access door leading directly to a corridor.

**420.5.1 Group I-1 multipurpose areas.** Multipurpose areas directly adjacent to sleeping rooms that are not part of a dwelling unit shall be permitted to be open to the corridor where the following criteria are met:

1. The area shall be under continuous 24 hour supervision by the facility staff;
2. The area is not used as an exit access for more than 16 sleeping rooms;
3. Travel distance within the smoke compartment, where the sleeping rooms and multipurpose areas are located, shall not exceed 75 feet (30 480 mm);
4. The area shall have direct access to an exit or shall exit into a fire-resistance rated corridor in accordance with Section 1018;
5. The area is arranged so as not to obstruct any access to the required exits;

6. The area is equipped with an automatic fire detection system installed in accordance with Section 907.2;
7. The walls and ceilings of the area outside the sleeping rooms are constructed as required for corridors;
8. The area shall be separated from incidental accessory occupancies in accordance with Section 508.2.5; and
9. Doors from the sleeping rooms opening into the area shall not have a required protection rating and shall not be required to be equipped with self-closing or automatic closing devices, but shall provide an effective barrier to limit the transfer of smoke and shall be equipped with positive latching. Roller latches are not permitted.

3. Revised text as follows:

**TABLE 503**  
**ALLOWABLE HEIGHT AND BUILDING AREAS**  
 Height limitations shown as stories and feet above grade plane.  
 Area limitations as determined by the definition of "Area, building," per floor

GROUP	HEIGHT (feet) HEIGHT (s)	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
		UL	160	65	55	65	55	65	50	40
I-1 <sup>e</sup>	S	UL	96	42	31	41	31	41	31	2 NP
	A	UL	55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500 NP
R-4	S	UL	449	4	43	4	43	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
			55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500

(Portions of Table and footnotes not shown remain unchanged)

**504.2 Automatic sprinkler system increase.** Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one, but shall not exceed 60 feet (18 288 mm) or four *stories*, respectively.

**Exceptions:**

1. Buildings or portions of buildings, classified as a Group I-1 occupancy, specifically designated or licensed by a state to house residents with Alzheimer's disease in Types IIB, III, IV, or V construction.
- 4.2. Buildings or portions of buildings, classified as a Group I-2 occupancy of Type IIB, II, IV or V construction.
- 2.3. Buildings or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.
- 3.4. Fire resistance rating substitution in accordance with Table 601, Note d.

**508.2.4 Separation of occupancies.** No separation is required between accessory occupancies and the main occupancy.

**Exceptions:**

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Incidental accessory occupancies required to be separated or protected by Section 508.2.5.
3. Group I-1, R-1, R-2 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.
4. Groups I-1 and R-4 occupancies with more than 16 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.

**508.3.3 Separation.** No separation is required between nonseparated occupancies.

**Exceptions:**

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group ~~I-1~~, R-1, R-2 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.
3. Groups I-1 and R-4 occupancies with more than 16 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.

**Table 706.4  
FIRE WALL FIRE RESISTANCE RATINGS**

A, B, E, H-4, I, R-1, R-2, <del>R-4</del> , U	3 <sup>a</sup>
F-1, H-3 <sup>b</sup> , H-5, M, S-1	3
H-1, H-2	4 <sup>b</sup>
F-2, S-2, R-3, <del>R-4</del>	2

(Footnotes not shown, remain unchanged)

**710.5 Openings.** Openings in a smoke barrier shall be protected in accordance with Section 715.

**Exceptions:**

1. In Groups I-1 and I-2, where such doors are installed across corridors, a pair of opposite-swinging doors without a center mullion shall be installed having vision panels with fire-protection-rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested. The doors shall be close fitting within operational tolerances, and shall not have undercuts in excess of 3/4- inch, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges and shall be automatic-closing by smoke detection in accordance with Section 715.4.8.3. Where permitted by the door manufacturer's listing, positive-latching devices are not required.
2. In Groups I-1 and I-2, horizontal sliding doors installed in accordance with Section 1008.1.4.3 and protected in accordance with Section 715.

**[F] 903.2.6 (IFC 903.2.6) Group I.** An automatic sprinkler system shall be provided throughout buildings with Group I fire area.

**Exception:** An automatic sprinkler system installed in accordance with Section 903.3.1.2 or 903.3.1.3 shall be allowed in Group I-1 facilities, housing 16 or fewer persons.

**[F] 907.2.6.1 (IFC 907.2.6.1) Group I-1.** An automatic smoke detection system shall be installed in *corridors*, waiting areas open to *corridors* and *habitable spaces* other than *sleeping units* and kitchens. The system shall be activated in accordance with Section 907.5.

**Exceptions:**

- ~~1. Smoke detection in habitable spaces is not required where the facility is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.~~
- 2.1. Smoke detection is not required for exterior balconies.

**[F] 907.5.2.3.3 (IFC 907.5.2.3.3) Groups I-1, and R-1, and R-4.** Groups I-1, and R-1, and R-4 dwelling units or sleeping units in accordance with Table 907.5.2.3.3 shall be provided with a visible alarm notification appliance, activated by both the in-room smoke alarm and the building fire alarm system.

**Exception:** Visible alarm notification appliances are not required in Groups I-1 and R-4 occupancies, housing 16 or fewer persons.

**1006.1 (IFC [B] 1006.1) Illumination required.** The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied.

**Exceptions:**

1. Occupancies in Group U.

2. Aisle accessways in Group A.
3. Dwelling units and sleeping units in Groups R-1, R-2, ~~and~~ R-3 and R-4.
4. Dwelling units and sleeping units of Group I occupancies.

**1107.6.4 Group R-4.** Accessible Units and Type B units shall be provided in Group R-4 occupancies shall be provided in accordance with Sections 1107.6.4.1 and 1107.6.4.2.

**1107.6.4.1 Accessible units.** At least 4 percent but not less than one of the dwelling or sleeping units shall be an Accessible unit.

**1107.6.4.2 Type B units.** In structures with four or more dwelling or sleeping units or sleeping units intended to be occupied as a residence, every dwelling and sleeping unit intended to be occupied as a residence shall be a Type B unit.

**Exception:** The number of Type B units is permitted to be reduced in accordance with Section 1107.7.

**Reason: IBC PERSONAL CARE OCCUPANCY REVISIONS: SUMMARY OVERVIEW OF THE ISSUE**

This proposal revises Group I-1 to allow not capable of self preservation residents in facilities that provide personal care services. This reflects the actual conditions that currently occur across the country as is now indicated in a referenced national study. This proposal keeps all not capable of self preservation occupants in the Group I occupancy. The study also shows that there are capable of self preservation personal care uses. This proposal moves the current capable Groups I-1 and R-4 uses exclusively to the R-4. This makes Group R for overnight residential and personal care uses that are capable of self preservation. The smaller 6-16 resident personal care uses (current R-4), and their five current "exceptions" due to size, are now proposed to be made by "exceptions" in the new proposed I-1 and R-4, instead of by a separate occupancy classification.

This following Summary Overview provides background information required to understand why these revisions are proposed. More detailed background information is provided in attachment G- Additional Detailed Substantiation and the other referenced attachments in *(parenthesis and italics)*.

**Issue:**

The IBC Groups I-1 and R-4 are the occupancy designations for personal care. The resident profile requirement in Section 308.2 states that the "occupants are capable of responding to an emergency situation without physical assistance from staff."

The IBC statement above about the types of residents in personal care assisted living, is a central point of reference in the findings of a 130 page national analysis conducted by the State of Hawaii in 2007. The analysis is entitled "Assisted Living Analysis of All State Regulations Relative to Building Codes and Life Safety Codes," hereafter referred to as the study or analysis. Attachments A, B, and D are from the Hawaii analysis. This national review of assisted living resident types and related protection features was conducted to give recommendations to Hawaii on how it should regulate its assisted living. The findings included in the study are also used here to help substantiate the reasons for the proposed changes to the IBC.

**The Hawaii Study Is The Only Known In Depth National Review of Assisted Living Relative to These Subjects.**

The analysis indicates that assisted living facilities and Alzheimer's facilities have the largest populations in personal care service occupancies. There are approximately 35,000 assisted living facilities in the United States. They are licensed by state governments under similar assisted living licenses in all 50 states, each with their own unique licensure regulations.

The study shows that the current resident profile requirements in the IBC I-1 and R-4 occupancies are exclusively applicable in just 4 states, relative to assisted living. *(See Attachment A-All State Summary Table.)*

The study finds that 51 of the 89 total assisted living categories in all 50 states have residents that require physical assistance with evacuation. The IBC does not currently allow non capable types of residents in its I-1 or R-4 personal care assisted living occupancies, and personal care is not listed in the I-2 occupancy.

The study recommends that the IBC personal care occupancies should be revised to include personal care service assisted living with its actual resident types, while adding more I-2 protection requirements.

It recommends that personal care assisted living not incorporate numerous other I-2 requirements and exceptions for reasons stated later in this summary.

The recommendations in the study also allow for personal care occupancies having capable of self preservation residents as is currently found in the I-1 and R-4 occupancies, closely matching the current R-2 requirements.

The IBC revisions proposed here follow concepts from the Hawaii recommendations and three other states that have created statewide amendments to the IBC, for the same reasons found in the Hawaii study.

**Both Federal and Individual State Licensing Requirements Override Current IBC Personal Care Criteria and Requirements**

The study shows that approximately 36 states allow Federal Medicaid waivers to allow Medicaid reimbursement to residents in their state's assisted living facilities, bringing other Federal requirements to personal care assisted living. *(See Attachment A-All State Summary Table)*. Most of these states and other individual state licensing regulations then add other life safety protection requirements not currently covered in the IBC personal care I-1 and R-4 occupancies. *(See Attachment G-Additional Detailed Substantiation-Protection Feature Sampling of Recent Projects)*. The Federal Centers for Medicare and Medicaid Services (CMS) enforce these requirements in many states, similar to what occurs in nursing facilities. This majority of states across the country, under additional enforcement of life safety, allow residents who need evacuation assistance, now further limit wood frame stories, and require full coverage commercial sprinklers and smoke barriers. *(See Attachment C-IBC Revision Summary Table.)*

The current lack of coordination with a majority of state licensing regulations life safety requirements, Federal CMS regulations, and the lack of classification of actual conditions in assisted living in the IBC, cause inconsistent application of the IBC across the country. Assisted living with residents of the same capabilities, and the same number of residents and stories, may be wood frame, have residential sprinklers with no smoke barriers in one city; and be required to be steel frame, have full coverage commercial sprinklers, and have smoke barriers in a nearby city. *(See Attachment G-Additional Detailed Substantiation.)*

**Proposal Includes a Broad Spectrum National Approach**

Finally, this proposal takes a broad spectrum national approach to personal care service uses, while not emphasizing preferences of one or a few states. It deals with the issue that each state has numerous types of these personal care uses and that each state regulates them differently.

This proposal realigns the personal care occupancies to match the actual conditions and variations of occupant capabilities across the country. It will help eliminate the current inconsistent application of the IBC and make the code more consistent with other Federal and state enforced regulations. Once incorporated, the proposed revisions in the IBC will cover the full spectrum of the different types of personal care uses. (See *Attachment B-Elder Care Resident Profile Guide and C-IBC Revision Summary Table.*)

## SUMMARY OF CONCEPTS & PROPOSED REVISIONS

### A. Proposed Not Capable of Self Preservation Personal Care Requiring Similar Protection Found in Nursing

Most actual personal care assisted living have residents that may not be capable of self evacuation. This revision concept makes the Group I occupancy for those who are not capable of responding to emergencies on their own, and makes the R occupancy for those who are capable of responding on their own. The revision allows the non capable personal care resident type in the I-1. It then revises the I-1 to have similar protection features found in I-2 nursing. This is versus the current I-1 closely matching the current the R-2 resident capability and protection features. The remaining personal care uses that have residents that are capable of evacuation are proposed to be moved to the R-4 occupancy. (See *Attachment C-IBC Revision Summary Table, E-Current IBC Occupancy Requirements Comparison Table, and F-Proposed IBC Occupancy Requirements Comparison Table.*)

These revisions:

Allow residents that may need assistance with evacuation in the I-1 occupancy. (Matching current CMS and a majority of state assisted living regulations.)

Keep the current IBC "personal care" definition the same: Personal care is care of residents that do not require chronic nursing care etc.

Adds the three main applicable protection features from I-2 into the I-1: Further story limitations on wood framing, full sprinklerization (NFPA 13 versus the current NFPA 13R), and smoke barriers providing compartmentalization. (Matching current CMS and a majority of state regulation concepts.)

Changes the I-1 from housing more than 16 to housing over five persons, and then includes "exceptions" for 6 to 16 occupant facilities, instead of making a separate occupancy classification for them.

Includes specially designated Alzheimer's facilities in I-1 while providing exceptions for corridors and story limitations in the proposed Chapters 4 and 5 for Alzheimer's facilities. (Aligning with current CMS concepts, matching 47 states that allow Alzheimer's facilities under assisted living licenses, and matching a majority of state licensing regulations.)

### B. Proposed Not Capable of Self Preservation Personal Care Requiring More Stringent Protection than Nursing

The State of Hawaii review of all 50 states assisted living regulations showed that personal care assisted living is different from I-2 nursing care. (See *Attachment A-All State Summary Table and G-Additional Detailed Substantiation*)

It showed that all states limit assisted living care to not include nursing care beyond intermittent care which is also consistent with the current IBC personal care definition. All states regulate nursing as another higher level of care not allowed in assisted living.

All states do not allow bedridden residents in personal care assisted living, except due to short term sickness. Residents who are bedridden beyond temporary sickness, or require beyond intermittent nursing care from temporary sickness, are required to be discharged to a nursing facility in all states assisted living regulations.

Assisted living residents are required to participate in fire drills and eventually disperse to a point of safety in case of an emergency in the fire code, in state assisted living regulations, and by most CMS enforced regulations. Nursing facilities are "protect in place," meaning residents are instructed to stay in their rooms and wait for rescue as needed.

Assisted living has generally less required staff to resident ratios than nursing due to assisted living residents generally being more capable of evacuation than nursing residents.

These four criteria differentiate personal care services in assisted living from nursing care, substantiating why it is and should continue to be classified as a different occupancy. These differences then require personal care service occupancies to have some different protection features that the I-2 nursing occupancy does not require. (See *Attachment G-Additional Detailed Substantiation*)

These proposed IBC revisions:

Make corridors in I-1 and R-4 more stringent than in I-2 nursing. The current requirement for protected rated corridors in I-1 and R-4 is maintained in most cases. This is more stringent than the unprotected corridor openings and spaces open to corridors allowed in I-2 nursing in the IBC Chapter 4. Having protected corridors in personal care service assisted living is appropriate because they are not "protect in place" and they have lower staff to resident ratios.

Make smoke barriers in I-1 more stringent than in I-2 nursing. The proposal requires the smoke barrier "compartments" to be smaller in size versus what is allowed in nursing. This effectively reduces travel distance and travel time to reach a point of safety, taking into account slower residents than the general public and less staff than found in nursing.

### C. Proposed Capable of Self Preservation Personal Care Requiring Similar Protection Found in Residential Occupancies

The proposed IBC revisions moves current personal care service uses with occupants capable of exiting on their own without physical assistance, to Group R-4. This makes Group R for overnight uses for those that are considered generally capable of self preservation except for short term sickness. This proposal accomplishes the following:

Makes R-4 as fully capable personal care: It moves the current I-1 and R-4 personal care uses that have all residents that can evacuate on their own to the R-4 occupancy. It changes the current R-4 from housing 6 to 16 to housing over five persons. It then includes "exceptions" for 6 to 16 occupant facilities in other sections, instead of making a whole occupancy classification for them. There are only five exceptions for differentiating the current I-1 from the R-4, so combining the two resident counts into one-occupancy is appropriate.

The detailed analysis of the current I-1, R-2 and R-4 shows essentially the same protection features between these occupancies. (See *the Attachment E Current IBC Occupancy Requirements Comparison Table*) The only differences currently between I-1 and R-2 are minor Chapter 5 and 9 differences. There are also currently no differences between the R-2 and R-4 allowable areas and stories. So moving personal care uses that have residents capable of self evacuation such as boarding homes, halfway houses, social rehab, and some assisted living to the general Group R and specifically Group R-4 is appropriate.

### D. Proposal Offers Conceptual Differentiation Between Two Letter Group Occupancies

This proposal creates a true conceptual difference between the Group I and R occupancies. It also eliminates the splitting of personal care uses between the Group I (I-1) and Group R (R-4) occupancies, based solely on the number of occupants. That current condition of changing an

occupancy letter group (I and R) solely for the number of residents, only occurs in these two occupancies in the code. This proposal changes this previous “number only” split, and now provides a definitive user capability difference between Groups I and R. It makes the general Group I for persons most likely depending on others to exit a building. It creates a capability level order in Group I from limited capability to fully detained occupants:

Group I-1 is revised for non bedridden conscious persons needing limited assistance in exiting a building.

Group I-2 is maintained as a “protect in place” occupancy and for persons who may require full assistance to exit a building, including bedridden and unconscious patients.

Group I-3 is maintained for persons under restraint or security.

Group I-4 is maintained as more of an exception to typical 24 hour Group I, but who’s occupants still most likely require assistance with evacuation.

The proposal then keeps the R for overnight sleeping occupancies for persons generally capable of self preservation. It keeps transient and non transient differences in R, while now also including only capable of self preservation personal care uses.

#### E. Other Proposed Assisted Living Substantiations

The proposed IBC revisions maintain assisted living as I-1 and R-4. It keeps other non-related nursing protection features and exceptions out of these personal care service occupancies. The revisions also more closely match CMS and a majority of states existing additional building protection requirements, while having little or no cost effect.

This proposal accomplishes the following:

**Keep sole I-2 requirements in I-2:** It keeps exclusive I-2 requirements that are not applicable to personal care, only in I-2 and not in I-1 or R-4 personal care. They include a shorter 200’ general allowable travel distance in the I-2 in Chapter 10, which is offset by the proposed smaller smoke compartment area in the I-1. There are numerous egress width differences required in the I-2 occupancy i.e. 8’ corridor, 44” door, .3 egress width, that are all related to bed movement of bedridden occupants in I-2. Bedridden residents are not allowed in personal care assisted living, so those requirements are not applicable to personal care and thus are not proposed here. There is also a structural redundancy requirement for I-2 because it is a protect in place occupancy, which is also not applicable to assisted living personal care. (See Attachment G-Additional Detailed Substantiation)

**These proposed personal care revised resident type and associated requirements closely match approximately 40 states current state regulations and CMS regulations.** Also note that last three editions of the CMS enforced life safety regulations for personal care, used in over half the states, have removed the timing of the resident formulas used in older editions that resulted in over complexity of determining capability of residents. This removal of timing is now just referenced as a guide but is not a determinate of its occupancy classification system anymore. The lack of timing of residents and other proposed changes in the IBC for personal care assisted living are consistent with the requirements already in existence in approximately 29 states through current CMS and other state licensing requirements: allowing assistance with evacuation in a non I-2 type occupancy, NFPA 13 sprinklers, further wood framing story limitations, and smoke barriers. The proposed revisions are also similar with 11 other states current licensing requirements for a total of about 40 states that already include the concepts proposed here. This continuity of requirements create national consistency similar to what already occurs between CMS life safety regulations in nursing and the IBC I-2 requirements. (See Attachment C-IBC Revision Summary Table and G-Additional Detailed Substantiation)

**Proposal allows occupancy classification options for the variations of personal care around the country:** The proposal allows assisted living in the 46 or so states that exclusively have assistance with evacuation or both assistance and no assistance categories, to use all the new appropriately categorized occupancies of I-1 and R-4, versus the current lack of applicable occupancy classifications. This then effectively eliminates the discussions that must now occur as to what IBC occupancy is to be used between the building official, fire marshal, state licensing department, and applicant, when not capable residents are proposed as often occurs.

- The proposal allows the 4 or so states that do not allow assistance with evacuation in personal care assisted living, to keep their regulations essentially the same, and now be classified as a Group R-4 occupancy.
- The 5 or so states assisted licensing regulations that currently require essentially I-2 assisted living exclusively, can continue doing that through their licensing regulations (as currently occurs) or update them to the proposed new IBC format and/ or current similar CMS regulations. It also allows the 10 or so states to have multiple assisted living classifications in the revised IBC due to requiring older CMS regulations or other licensing regulations.
- This seemingly complex issue of personal care occupancy classification is now made simpler for the building code plans reviewer compared to the lack of clarity that often now occurs. These classifications are revised and based on only whether the residents are capable or not capable of evacuation: The permit applicant must still confirm the state licensing agency resident type category and comply with their regulations (usually the Department of Human Services or Department of Health).
- The applicant will initially propose an assumed classification of I-1 or R-4. The submitted set of plans to the building department should also indicate the state license agency category, to confirm in writing that the occupancy classification is correct relative to resident counts and capabilities as defined by the state regulations. The applicant should state on the permit application drawings whether the resident type proposed are capable or not capable of self preservation. The Building Official then makes the final determination of the occupancy classification based on the applicant’s statement, and/or state licensing information provided to the building official. The applicant can also be requested by the building department to quote state licensing requirements of the state licensing regulation definitions on the drawings as now often occurs. This can be accomplished because numerous states write in their regulations whether the residents are capable or not capable of self preservation. If not shown in state licensing definitions, other parts of state licensing criteria indicate capability of residents including but not limited to: the types of facilities allowed, admissions and discharge criteria, or referenced CMS enforced life safety code and their resident capability classifications. This can help prove to the Building Official whether the I-1 or R-4 is the appropriate classification.

**Keeps personal care out of I-2.** There are advocates for moving personal care to the I-2 occupancy. This is misdirected due to the numerous reasons indicated in the above overview including: assisted living having less than the nursing level of care residents, having less staff to resident ratios, not being protect in place, and nursing having numerous non applicable exceptions and additional protection requirements due to being a protect in place occupancy.

- The major difference though is having less staff to resident ratios in assisted living. Higher staff ratios allows nursing and hospitals to be protect in place and exempt corridor protections, while also adding additional structural redundancy requirements.
- These I-2 advocates also do not recognize that moving non capable personal care to I-2 would cause a non justified increase in construction costs with no relative increased occupant protection: A majority of assisted living facilities are constructed of protected wood frame and many are over one story. Wood frame costs are generally in the \$100 to \$130 per square foot range for these facilities. Steel frame costs up to 5 stories, are generally in the \$130 to \$160 per square foot range for the limited number of these facilities built this way. Changing these personal care facilities to I-2 would cause a majority of facilities to be steel frame (I-2 limits

wood frame to 1 story) for little if any protection increases in comparison to the other protection features included in this proposal. This potential construction cost increase of 20% would be an undue burden on the industry. Keeping them in the new proposed I-1 (2 story wood) and R-4 (4 story wood) will have little if any affect on construction costs, especially in the majority of states under current CMS and state regulations with similar story and protection requirements matching this proposal.

**Other options for including both capable and non capable personal care, with their different requirements, cause as many or more revised sections to the IBC, but create or do not solve other issues.** Keeping personal care in the I-1 and R-4, while delineating capability differences between these two occupancies is the most appropriate occupancy designation solution for dealing with personal care. The following are summaries of numerous options for revising personal care. All the revision options below assume including both capable and non capable personal care while adding new requirements to non capable uses, similar to what is in this proposal. The following summary concludes that this proposal option in this submittal is the best overall long term solution to match actual conditions across the country.

- o This proposal option:
  - (+) Makes conceptual I and R use differences with I as not capable and R as capable.
  - (+) Ads new requirements in the revised I-1.
  - (+) Removes the number only split of the current I-1 and R-4.
  - (+) Best long term conceptual revision.
  - (+/-) 22 sections revised.
- o Option for making I-1 and R-4 not capable personal care, keeping current number split, and adding capable personal care to R-2:
  - (+) Leaves current I-1 and R-4 mostly in tact with just revising resident type, while adding new requirements.
  - (-) Adds capable personal care list to R-2 and mixes the use with R-2.
  - (-) Leaves the number only split of the current I-1 and R-4.
  - (+) Requires 10-15 revised sections.
- o Option for keeping the current capable I-1 and R-4, and adding not capable personal care to I-2:
  - (+) Leaves current I-1 and R-4 in tact.
  - (-) Adds not capable personal care list to I-2 and adds various exceptions for non bed, not protect in place, and lower staff ratio personal care requirements and exceptions to I-2.
  - (-) Limits not capable personal care to one story wood, increasing construction costs.
  - (-) Leaves the number only split of the current I-1 and R-4.
  - (+/-) Requires 15-20 revised sections.
- o Option for adding a new not capable personal care occupancy designation number in either I or R (R-5?):
  - (-) Creates a new occupancy
  - (-) Requires 40+ revised sections plus major IFC revisions.

## ITEMIZED IBC SECTION REASONS

**Section 308.2** is revised to allow residents in Group I-1 that require assistance with evacuation. Residential care/assisted living facilities and other personal care uses that are allowed by individual state licensing regulations to have these types of residents remain in this revised Group I-1.

The previous reference of “assistance from staff” is removed, since assistance can be from staff as was previously mentioned in this section, or from other residents, or from first responders, such as fire department personal. The proposed reference of just “assistance” assumes that assistance with evacuation can be from anyone. Assistance from anyone then places a resident in this category.

The term “not capable of self preservation” is not included as part of the personal care occupancy descriptions since the term is not currently defined in the IBC. The term is currently used in the I-2 and is generally accepted as meaning that an occupant is not capable of self preservation when they are incapable of responding to an emergency situation on their own to exit a building without physical assistance. The current I-1 Section 308.2 clarifies what the implied definition of capable of self preservation is by stating that occupants are capable of responding to an emergency situation on their own without physical assistance. This approach of stating the implied definition versus using the term itself is maintained in the proposed I-1 and R-4 occupancy resident type descriptions to clarify the intent without referencing a definition. The statements in the current I-1 and both the proposed I-1 and R-4, then definitively delineate resident capability classification.

Alzheimer’s facilities are also specifically itemized since the Hawaii study showed that 47 states allow these facilities under assisted living licenses. (See *Attachment A-All State Summary Table*). Current CMS regulations also allow these facilities in their non nursing health care regulations. Alzheimer’s facilities have additional requirements in the proposed Chapter 5 story limitation revisions. There is also a corridor protection exception to allow the current common “neighborhood” designs for Alzheimer’s facilities in the proposed Chapter 4. See those section’s “Reasons” for substantiation.

Some other types of uses are removed from the current I-1 list because none of those uses are considered to have occupants that are not capable of self preservation.

Group I-1 is also changed from housing more than 16 to housing over five persons, matching the current I-2 resident count. The “exceptions” for 6 to 16 occupant facilities are listed in other revised sections under I-1, instead of making a separate occupancy classification. The facilities that have residents capable of self evacuation are moved from the current I-1 category to the R-4 category since there are currently only minor differences between the I-1, R-2, and R-4 occupancies. The categories moved to the R-4 include the complete list of uses from the current I-1, since some or all of these types of facilities have residents that are capable of self preservation. They include: Alcohol and drug centers, congregate care facilities, convalescent facilities, group homes, halfway houses, social rehabilitation facilities, and the limited types of assisted living and residential care facilities that require full capability. Clarification of the differences between the I-1 and I-2 is that I-1 facilities only provide “personal care service” as appropriately defined in the current IBC. Personal care services (I-1, R-4) do not provide “chronic convalescent, health, medical or surgical care.” The Group I-2 occupancy is the appropriate facility to provide those types of services. (See *Attachment C-IBC Revision Summary Table*)

The last paragraph of this section continues cross-referencing other related occupancies, which now include adding cross-referencing R-3, and referring capable personal care to the R-4 occupancy. Exceptions for complying with construction requirements for R-3 are maintained for facilities with 6-16 residents, including requiring added compliance with Section 903.2.6 (sprinklers), written in the same format as the current R-4 last paragraph description.

**Section 310.1** Group R-4 is revised to include personal care facilities, all of which have residents that do not require physical assistance with evacuation, similar to the current I-1. The whole section is re-written to match the current I-1 description. These types of facilities that have residents that are capable of self evacuation are moved from the current I-1 category to the R-4 category since there are currently only minor differences between the I-1, R-2, and R-4 occupancies. The categories moved to the R-4 include the complete list of uses from the current I-1, since some or all of these types of personal care service facilities have residents that are capable of self preservation. They include: Alcohol and drug centers, congregate care facilities, convalescent facilities, group homes, halfway houses, social rehabilitation facilities, and the limited types of assisted living



and residential care facilities that require full capability by certain individual state licensing regulations. (See Attachment A-All State Summary Table). (See Attachment C-IBC Revision Summary Table)

The number of residents is revised from the current 6-16 to more than five residents. The "exceptions" for 6 to 16 occupant facilities are listed in other revised sections under R-4, instead of making a separate occupancy classification. The last paragraph of this section continues cross-referencing other related occupancies, which now include adding cross-referencing R-3.

**Section 310.2** The "Residential Care/Assisted Living" definition is revised to delete the previous resident capability limitation. The revised definition states that occupancy classification is based on the ability of occupants to respond to an emergency situation with or without assistance. The limitation on not allowing assistance with evacuation is now only written into the R-4 occupancy description. The Group I-1 occupancies are revised to allow assistance with evacuation. The definition further adds text that the occupants are non bedridden persons, except during temporary common sicknesses that occur in the general public. This is added to clarify the limitation of personal care versus I-2 nursing care. It is consistent with the current "personal care" definition and current assisted living regulations across the country. See the Summary Overview substantiating the concept reasons for the change. Other aspects of the current definitions remain unchanged, since they reflect current common distinctions in the personal care service industry.

**Section 420.1** Group R-4 is added since it is now proposed to be similar to the current I-1 in terms of resident types. The new R-4 requirements mostly parallel the current I-1 requirements.

**Section 420.2** The exceptions for 6 to 16 occupant facilities are listed here matching current requirements, instead of making a separate occupancy classification.

**Section 420.4** Smoke barriers are added as a requirement in Group I-1 occupancies with over 16 residents. They are added to I-1 due to the abilities of the new proposed resident type allowed and to match already existing CMS and state licensing regulations in a majority of states.

The section utilizes similar language and format from the current I-2 Section 407 for smoke barriers. This proposed section provides smoke barrier size and travel distance requirements that are more restrictive than the Group I-2 requirements. These limits, compared to I-2 smoke compartment size, are proposed because of the probability of less staff in personal care occupancies to assist in evacuation when compared to nursing. Smaller smoke compartments and shorter travel distance assumes less time to reach a point of safety from the compartment of origination. The proposed revisions limit the size of smoke compartments to 16 sleeping rooms, or 10,500 square feet, whichever is less, versus the 22,500 square feet allowed in I-2. The proposed limit is taken from the basic Group I-1 exceptions for over 16 occupant criteria throughout the code, or 10,500 square feet, the basic allowable area allowed in the I-1 occupancy. There are four states that have statewide amendments to the IBC for personal care implementing the overall concepts in this proposal. The State of Oregon and Hawaii statewide building code amendments reduce smoke compartment size in their non capable personal care occupancies to the approximately the size proposed here. Oregon has over a twenty year history of amendments for personal care occupancies with residents who are not capable of self preservation, including reduced smoke compartment size.

The use of the term "sleeping room" is included so not to mix the more limiting Chapter 10 occupant load calculations into this requirement. The concept is that actual sleeping rooms will be counted. The travel distance will additionally control the size. The reduction from the I-2 travel distance of 200' is reduced in the I-1 by 25 percent to 150'. This reduction is also based on the probability of less staff to assist residents in personal care during evacuation.

(See Attachment C-IBC Revision Summary Table)

**Section 420.4.1** The added refuge area requirement utilizes wording matching the current I-2 Section 407.4.1.

**Section 420.4.2** The added Independent egress requirement utilizes wording matching the current I-2 Section 407.4.2.

**Section 420.4.3** The added Horizontal assembly requirement utilizes wording matching the current I-2 Section 407.4.3.

**Section 420.5** is added to confirm that corridors are required in I-1 occupancies and to provide a scoping statement for the multipurpose areas next to sleeping room exception in lieu of corridors proposed in the new following Section 420.5.1. The language in this Section 420.5 is derived from the same scoping language requiring corridors in I-2 in Section 1014.2.2, then introducing the "suite" exception in the next Section 1014.2.3.

**Section 420.5.1** is added to allow "neighborhood designs" often seen in many Alzheimer's facilities. These designs often have 10 to 16 sleeping rooms open into a common shared living, activity, and dining area. Many facilities currently using this design layout use the accessory provisions allowed in the exit access intervening room requirements in Chapter 10, or use Section 407 exceptions if classified as the I-2 occupancy. These proposed provisions utilize concepts and wording from the spaces open to corridor provisions for nursing in found Section 407.2.3.

The intent here is to allow these neighborhood designs when there are only sleeping rooms that open into the spaces as found in Alzheimer's facilities. Typical assisted living units that have their own bathroom, kitchenette, and living rooms, are dwelling units so they are excluded from utilizing this exception. They are not included in this exception due to a self contained dwelling unit not requiring a common shared living, eating and activity area just outside a sleeping room. The key controlling requirement of this exception to corridor protection is the size of the compartment by the further limiting travel distance to 75' within that smoke compartment. This affectively limits travel time before reaching the required protection areas outside the compartment. The 16 sleeping room limit is derived from the maximum number of sleeping rooms allowed in a smoke compartment in the proposed Section 419.4. Other controlling features are from Section 407.2.3.

**Table 503** IBC Table 503 is proposed to be revised to reflect changes to the definitions and resident type in the revised Group I-1 occupancy:

The proposed I-1 basic allowable areas remain with the same limits as the current I-1.

There are revised limitations on the number of stories allowed that reflect current Federal CMS limits on these occupancies. (See Attachment D Areas & Height Table)

Approximately 36 states reference Federal CMS regulations for their assisted living occupancies, so general continuity between CMS enforced regulations and the IBC should occur. The revisions to the story limitations show a variance from one to three stories. The two story limitation in Type VA construction, also match California's IBC statewide amendments to the story limitations for its similar occupancy. California's state amendments also match other key protection features of CMS board and care regulations. (See Attachment C-IBC Revision Summary Table)

The two story limitation for up to one hour wood protection matches current CMS requirements and is appropriate for this occupancy due to the type of residents. These occupants are expected to be able to evacuate the building with or without assistance in case of emergencies. They are not bedridden as in I-2 nursing, (with one story limits), and with the I-2 occupants that may stay in place during emergencies in a "protect in place" occupancy. This further substantiates the difference in Group I-1 two-stories versus the Group I-2 one story. There are already numerous existing two story wood frame assisted living facilities. This will allow these existing facilities to continue to be in compliance.

Type IIA with fire sprinklers allows three stories. This matches the Federal CMS limits.

Type IB is allowed seven stories with fire sprinklers, half way in between the current I-1 and I-2 limits, with two more stories than the current I-2 limits. Type IB construction contains the most differences between various versions of CMS and other state enforced regulations. This proposal is an average of the difference between Federal CMS regulations and Group I-2.

Table 503 is revised for the new Group R-4 to match the current Group I-1, being that the current I-1 is essentially moved to the new R-4. The revisions here are more clerical revisions than actual revisions because of moving the current I-1 occupancy to the R-4.

**Section 504.2 Exceptions.** Most Group I-1 and all Group R-4 occupancies are still allowed the sprinkler increase of one story and 20 feet in height from Table 503 by the base scoping language of the unrevised Section 504.2. Group I-1 occupancies with specifically designated Alzheimer's facilities are added to the exceptions for not being allowed the sprinkler story and height increases in Type IIB, III, IV, or V construction, similar to the current I-2 exception. The wording of the phrase includes the text "specifically designated or licensed by a state" to clarify that these are specially designated facilities licensed by most state Department of Human Services or Department of Health. This text is included to exclude applying the exception to assisted living facilities that may have some residents with dementia and early Alzheimer's disease as occurs in many assisted living facilities. The exception is only intended for exclusively designated Alzheimer's facilities, due to the likelihood of all residents not being capable of self preservation.

This is an additional requirement for these facilities matching the story limitations of wood frame construction of the I-2, which most jurisdictions have categorized Alzheimer's facilities in the past. The revision affectively keeps Alzheimer's facilities with all the appropriate I-2 protection features except for non applicable protect in place and bedridden requirements. This is a practical exception versus placing these facilities in the I-2 occupancy, which would cause additional exceptions for Alzheimer's facilities due to the additional and reduced protection features required in the I-2 as stated in the Summary Overview. The State of Hawaii study also shows that Alzheimer's facilities are allowed with a special license in 47 state assisted living regulations. So keeping them in the same I-1 occupancy with the additional I-2 protection features, making them almost equivalent to I-2 protection, is appropriate.

The limitation of occurring on the first story in combustible and non protected construction is proposed because numerous state assisted living regulations and states using older CMS life safety codes limit these facilities to the first story in these construction types. (The last three editions of CMS enforced life safety code does allow two stories though.) The first story limitation is appropriate though mostly due to the likelihood that few if any of an exclusive Alzheimer's facility's residents have the capability of responding to an emergency on their own. This is compared to non Alzheimer's assisted living facilities proposed to be allowed to be two stories in height. These proposed two story types of assisted living facilities have fewer to substantially fewer occupants requiring assistance with evacuation.

**Section 508.2.4** is revised to reflect the revisions to the I-1 and R-4 occupancies, now incorporating more than 5 residents. Group I-1 and R-4 are moved to number 4 of this section to cover the 16 resident exceptions for both occupancies. The exception for 16 and under residents in I-1 and R-4 occupancies is added to maintain current requirements found in the similar current R-4. This is proposed versus making a whole new occupancy classification based only on the number of residents. The revisions here are more clerical revisions than actual revisions because of revising resident counts in the I-1 and R-4.

**Section 508.3.3** is revised to reflect the revisions to the I-1 and R-4 occupancies now incorporating more than 5 residents. Group I-1 and R-4 are moved to number 4 of this section to cover the 16 resident exceptions for both occupancies. The exception for 16 and under residents in I-1 and R-4 occupancies is added to maintain current requirements found in the similar current R-4. This is proposed versus making a whole new occupancy classification based only on the number of residents. The revisions here are more clerical revisions than actual revisions because of revising resident counts in the I-1 and R-4.

**Table 706.4** is revised to reflect the revisions to the R-4 occupancy, being that the current I-1 is essentially moved to the new R-4 while now incorporating more than 5 residents. The revisions here are more clerical revisions than actual revisions because of essentially moving the I-1 to the R-4.

**Section 710.5** is revised to include cross corridor doors in the new required smoke barriers in Group I-1, matching the same exceptions allowed for I-2. This exception matches current CMS requirements.

**Section 903.2.6** is revised to require full NFPA 13 sprinkler coverage in the I-1 occupancy when housing over 16 residents. This is proposed to reflect that the new I-1 residents may require physical assistance to evacuate. The exception is revised to allow NFPA 13R in smaller facilities versus creating a whole new occupancy classification for them for the few exceptions. The requirements also match current CMS and state assisted living regulations in a majority of states. (See *Attachment A-All State Summary Table and C-IBC Revision Summary Table*)

**Section 907.2.6.1** is revised to eliminate the exception for eliminating automatic smoke detection when sprinklers are provided. This proposal requires smoke detection even with sprinkler exceptions to reflect that the new less capable I-1 resident type.

**Section 907.5.2.3.3** is revised to match the current I-1 and current R-4 requirements. Group R-4 is added because it is now proposed to match the current I-1 in resident capability but not in resident counts. The exception is added to match current R-4 not requiring visible alarms when there are 16 or less residents. The exception for 16 and under residents in I-1 and R-4 occupancies is added to maintain current requirements found in the similar current R-4. This is proposed versus making a whole new occupancy classification based only on the number of residents. The revisions here are more clerical revisions versus technical requirement changes solely due to moving the current I-1 to the new R-4 occupancy and changing resident counts in the occupancies.

**Section 1006.1** is revised to match the current I-1 and new R-4 requirements. Group R-4 is added because it is essentially moved from the current I-1. Dwelling units are added in Group I because some I-1 uses have dwelling units, making them consistently exempt.

**Section 1107.6.4** is revised to match the current I-1 with the new R-4 requirements. The revisions are clerical revisions versus technical requirement changes solely due to moving the current I-1 to the new R-4 occupancy and changing resident counts in the occupancies.

**Cost Impact:** The code change proposal will not increase the cost of construction due to current enforcement of similar requirements by other regulations such as CMS and state licensing regulations.

Personal Care "Assisted Living" Regulations and NFPA/IBC References														
State	ALF 1,2	Evacuation Criteria	Type of Facility	No of Residents	Alzheimer Residents Allowed	Admission / Discharge Criteria			Referenced NFPA Codes 2,6			Referenced IBC 6 Occupancy		
						Evacuation Capability 5	Ongoing Nursing Care Allowed	Beyond Facil. Capabilities	Other	NFPA Referenced	NFPA Occupancy Type	Other 4,6	IBC Adoption & Stated IBC Occupancy	Assumed 16+ Res. IBC 6,7,8
Washington (M)	(AFH)		Adult Family Home Level 1:	1-6 adults	No	Self-evacuate required	Limited intermittent	14 days max	Discharge	Unable to self-evacuate	IFC	1-2 Family Dwelling	S	
			Adult Family Home Level 2:	1-6 adults	No	AEA	Limited intermittent	14 days max	Discharge	Continuous or skilled care	IFC	1-2 Family Dwelling		1-1, 1-2
			Adult Family Home Level 3:	1-6 adults	Yes	Impractical to evacuate	Limited intermittent	14 days max	Discharge	Continuous or skilled care	IFC			
	AEA Y		Boarding Home: Same 3 levels of care	7+ adults	No level 1&2, Yes level 3	Same 3 levels as AFH	Limited intermittent	14 days max	Discharge	Continuous or skilled care	IFC		sprinklers required	
West Virginia			Legally Unlicensed Health Care Home - Class I	1-3 adults	No		Limited intermittent	Y if licensed	Discharge	Ongoing or extensive nursing care	NFPA 101, 2003 edition	1-2 Family Dwelling	S	
	AEA Y		Assisted Living Residence - Class II:	4+ adults	Yes w/special license		Limited intermittent	Y if licensed	Discharge	Ongoing or extensive nursing care	NFPA 101, 2003 edition		IBC	1-1, 1-2
	AEA X		Residential Care Community - Class III	17+ adults	No	Self-evacuation required	Limited intermittent	No	Discharge	Unable to self-evacuate	NFPA 101, 2003 edition		IBC	
Wisconsin (M)	(CBRF)		Community Based Residential Facilities - Class A	5+ adults	No	Self-evacuate required	3hr/wk, 90 day max	No	Discharge	Ongoing nursing care	NFPA 101	Based on evacuation ability & time	S	1-1, 1-2
	AEA Y		Community Based Residential Facilities - Class C	5+ adults	Yes w/special license	AEA	3hr/wk, 90 day max	90 day max	Discharge	Ongoing nursing care	NFPA 101	NFPA 13D & 13R		
Wyoming			Assisted Living Facility - Small:	1-8 adults	No	Self-evacuation required	Limited intermittent	No	Discharge	Several health conditions	NFPA 101, 2003 edition	Residential Board & Care, Prompt		
	AEA Y		Assisted Living Facility - Large:	9+ adults	No	AEA - Cueing Only	Limited intermittent	No	Discharge	Several health conditions	NFPA 101, 2000 edition	Resid. Board & Care - Prompt & Slow	J	1-1, 1-2
	AEA Y		Assisted Living - Large:	9+ adults	Yes	Impractical to evacuate	Limited intermittent	No	Discharge	Several health conditions	NFPA 101, 2000 edition	Limited Care	2003 IBC	
<b>Totals</b>	<b>AEA in +/- 46 States</b>		<b>Assisted Living or Similar</b>		<b>Alzheimer's</b>	<b>AEA in +/-37 States</b>	<b>Limited Nursing</b>	<b>Short term Bedridden up to</b>			<b>NFPA 101</b>	<b>NFPA and it's</b>	<b>IBC used in 50 States</b>	<b>1-1 in +/- 4 States</b>
<b>Medicaid Waiver allowed in 36 States</b>	<b>Y in +/- 35 States</b> <b>X in +/- 15 States</b>		<b>Allowed in 50 States</b>		<b>Allowed in +/- 47 States</b>		<b>Intermittent for 45-90 days max. allowed in +/- 50 States</b>	<b>7 - 45 days max. allowed in +/- 21 States</b>			<b>referenced in 37 States</b>	<b>Board &amp; Care, and Limited Care Occupancies referenced in +/- 28 States</b>	<b>26 states adopt (S)Statewide</b> <b>24 states adopt by each (J) Jurisdiction</b> <b>IBC Referenced in 10 state assisted regulations</b>	<b>1-2 in +/- 14 States</b> <b>1-1 &amp; 1-2 in +/- 32 States</b>

**FOOTNOTES**

1. If no Assisted licensing category exists in a particular State, the closest category is listed. See more detailed description in "Assisted Living Occupancy Criteria Analysis by State."
2. (M) Indicates Medicaid Waiver is allowed in State.
3. AEA: Assistance with Evacuation Allowed is specifically stated. NCOASP: (Not) Capable of Self Preservation
4. Y: NFPA resident criteria allowed with its wood construction and limitation on wood stories. No limitation of location of residents on first floor when requiring assistance with evacuation is stated.
5. X: Self evacuation or nursing design is required, or location of residents on first floor is required when requiring assistance with evacuation is stated.
6. IBC: International Building Code. NFPA: National Fire Protection Association. IFC: International Fire Code
7. Assumed base IBC Occupancy classification as determined by this analysis without any individual State amendments or interpretations. If "unable to evacuate" is a criteria for discharge, then IBC 1-1 (Assisted Living) is the assumed IBC classification under this analysis. If "unable to evacuate" is not a criteria for discharge, and assistance with evacuation is allowed, only when noted, then the interpretation by this analysis under the IBC is that the occupancy classification would be I-2 (Nursing "not capable of self preservation" i.e. resident cannot get out on their own). If continuous nursing is allowed, and unable to evacuate are not marked, then it is assumed that all facilities would fit into the I-2 occupancy under this analysis. If Alzheimer's care is allowed then I-2 occupancy is the assumed designation under this analysis. If NFPA Residential Board and Care is referenced, then "prompt" is assumed to be I-1, and "slow" and "impractical" are assumed as I-2. Assumed IBC occupancy is stated because the personal care/ assisted living occupancy is not listed as part of the IBC 1-2 occupancy.
8. Where noted, most likely 2 occupancies are assumed to be used in the State dependent on "Level of Care," or whether Alzheimer's residents allowed in special licensed units.

**ATTACHMENT B (From the State of Hawaii Analysis)**

<b>ELDER CARE RESIDENT PROFILE GUIDE TABLE <sup>1</sup></b>				
<b>Retirement/ Apartments</b>	<b>Assisted Living</b>			<b>Skilled Nursing</b>
<b>Independent</b>	<b>Minimum Assistance</b>	<b>Standby Assistance</b>	<b>Hands-on Assistance</b>	<b>Total Assistance</b>
<b>IBC: R-2 <sup>2</sup></b>	<b>IBC: I-1 <sup>2</sup></b>	<b>IBC: I-2 <sup>2</sup></b>	<b>IBC: I-2 <sup>2</sup></b>	<b>IBC: I-2 <sup>2</sup></b>
<b>NFPA: Apartments<sup>2</sup></b>	<b>NFPA: Board &amp; Care<sup>2</sup></b>	<b>NFPA: Board &amp; Care<sup>2</sup></b>	<b>NFPA: Board &amp; Care<sup>2</sup></b>	<b>NFPA: Health Care<sup>2</sup></b>
Able to respond independently in an emergency	Able to respond in an emergency	May need assistance in an emergency	Needs assistance in an emergency	Needs supervision and hands-on assistance in an emergency
Able to negotiate stairs in an emergency and exit the building	Walks/transfers independently - infrequent falls	Transfers - Standby assistance may be needed	Transfers- 1 person assist usually needed, and fall risk	Transfers - 2 person assist may be needed/Mechanical lift/bedfast
ADL (Acts of Daily Living)- Resident is able to accomplish all without assistance from staff	ADL - Independent to verbal reminders	ADL - Reminders to giving verbal cues	ADL - Verbal cues and/or hands-on assistance	ADL - Hands-on assistance
Transfer & ambulate. Eats and takes medications	Independent with medications & Dr. appointments	Medication reminders and management	Medication management	Medication adjustments and behavior management
Capable of own toileting and personal hygiene	Continent of bowel and bladder	Occasional incontinence assistance	Incontinence management	Incontinence management
Bathes, dresses, grooms	Independent in bathing	Bathing set up and monitoring	Bathing assistance	Bathing assistance
Meals/housekeeping, provide if chosen. No personal care assistance or monitoring	Meals, nutrition and housekeeping assistance is helpful	Meals, nutrition and housekeeping assistance is helpful	Meals, nutrition and housekeeping assistance is helpful	Verbal cues and hands-on assistance to eat
Would benefit from socialization and activities with minor encouragement	Able to independently plan and participate in social activities	Reminders and encouragement to participate in activities	Encourage and escort to participate inactivities	Encourage and escort to activities
No memory impairment	Little memory impairment	Mild memory impairment - sometimes disoriented	Impaired memory, poor orientation and mild confusion	Needs 24 hour nursing supervision or skilled services such as physical, occupational and/or speech therapy
Capacity for decision-making and understanding consequences	Some decline in capacity for self care and understanding consequences of actions	Declining capacity for self care and understanding consequences	Limited capacity and inability to understand consequences of actions	Limited or no capacity for self care and understanding of consequences of actions
Family does not "need" to move	Family "slightly concerned"	Family "concerned"	Family "very concerned" -"Have to do something"	Family must do something

1. Based on and edited from Nevada Elder Care Assisted Living Guidelines.
2. This analysis assumed occupancy designations from the 2006 IBC and 2003 NFPA 101.

**(From the State of Hawaii Analysis)**

**Specific Criteria of Self-Preservation:**

There are very specific details of the ability of occupants of a building to be "capable of self-preservation." NFPA and its codes and guides outline very specific details of this topic. The NFPA 101A Guide on Alternative Approaches to Life Safety (2001 Edition) is referenced and summarized here to underscore the many details of self-preservation.

Chapter 6 of the NFPA defines variations of capabilities of occupants for Residential Board and Care occupancies. This is the most important aspect of determining if a building should have additional life safety elements incorporated into its design, therefore the topic is discussed in detail

here. This NFPA Chapter 6 reviews capability and then offers calculation tables to determine occupant's ability of self-preservation. The review below summarizes some specific points of this NFPA Chapter 6. It then assumes the determination of self-preservation at the end of each category in *italics*.

#### Risk of Resistance

Some residents may resist leaving the building during an emergency situation. "Minimal risk" indicates that there is no specific evidence to suggest that the resident might resist an evacuation.

"Mild resistance" indicates that there is specific evidence that the resident had previously resisted instructions from staff or may have hidden from the staff and then might resist leaving the building in a situation similar enough to a fire emergency. "Strong resistance" includes resistance by the resident who necessitates the full attention of one or more staff members. The resident may have struggled vigorously, refused to cooperate, or has hidden in similar fire situations to predict that behavior recurring in an actual emergency.

*Residents who show mild and strong resistance are considered not capable of self-preservation.*

#### Impaired Mobility

The resident is rated according to how easily he can leave a building "given the presence of factors such as physical barriers that hinder movement (e.g. stairs), the resident's ability to get out of bed, or the chairs normally used. The resident should be given credit for being able to use devices that aid movement (e.g., wheelchairs, walkers, crutches, and leg braces) only if those devices are always available in an emergency situation....Guiding or directing the resident by giving gentle pushes or leading by the hand is not considered requiring physical assistance."

"Self starting" means a resident is physically able to start and complete an evacuation without physical assistance.

"Slow" is when the resident prepares to leave and travels to the exit or area of refuge at a speed significantly slower than the general population. The NFPA classifies the general population as "prompt," meaning they can reach an exit (point of safety or area of refuge) within approximately 3 minutes. The NFPA categorizes a resident as being "slow" if it takes the resident more than 90 or 180 seconds to travel from a sleeping room to an exit, point of safety, or area of refuge. NFPA describes "very slow" as requiring over 150 seconds to reach an exit.

*Residents who are self starting and slow or very slow are considered being capable of self-preservation. Residents who are not self starting and are considered beyond slow are not capable of self-preservation.*

"Needs limited assistance" means "that the resident might need some initial or brief intermittent assistance but can accomplish most of the evacuation without assistance." The residents may require help getting into a wheelchair, descending stairs, getting out of bed, or opening a door, for example.

"Needs full assistance" means the resident either needs physical assistance from a staff member during most of the evacuation or must be assisted by staff by being carried from the facility, helped into the wheelchair and wheeled out of the facility, or helped into leg braces and helped to descend stairs.

*Residents who require limited and full assistance are considered not capable of self-preservation.*

#### Impaired Consciousness

The resident has experienced seconds or minutes of temporary impairment of consciousness over six times during the previous three months. The resident is only classified this way if the impairment would significantly interfere with his or her ability to exit the building. Temporary medical problems are also not counted in this definition. "Partially" impaired consciousness means the resident is still able to participate in an evacuation to some degree. "Totally" impaired consciousness means the resident needs full assistance by at least one staff member to evacuate out of a building.

*Residents who are partially or totally impaired are considered not capable of self-preservation.*

#### Need for Extra Help

The resident may need assistance in various circumstances from more than one staff to egress a building, whether to initially get out of bed or other individual actions or if the resident requires assistance during the duration of exiting the building.

#### Response to Instructions

This is the resident's ability to receive, comprehend and follow through with simple instructions during a self directed evacuation. Residents may require non constant "supervision, considerable attention, or might not respond during an evacuation."

*Residents who need extra help or require supervision, considerable attention, or might not respond during an evacuation are considered not capable of self-preservation.*

#### Waking Response to Alarm

Buildings with non-centralized alarm systems, residents who are on medication that inhibits responses to alarms, residents who have apparent hearing impairment (unless they are in a room with visual alarms), or if hearing aids are removed during the night, or residents who are exceptionally sound sleepers are all considered as "response not probable" to responding to an alarm.

*Residents who are not probable to responding to an alarm are considered not capable of self-preservation.*

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## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee acknowledged the proponent's effort to provide clarity to these regulations, but felt that the restructuring of the Group I-1, I-2 and R-4 occupancies to be unclear. There was concern that the resulting reductions in Table 503 were not justified. They found the additional provisions proposed in Section 420 to be confusing as to how they would be applied. The proposed smoke compartments are small and did not seem coordinated with other portions of the proposal.

**Assembly Action:**

**None**

## Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

### *Public Comment:*

**Daniel Purgiel, LRS Architects Inc. and Tom Jaeger, Jaeger & Associates, LLC, representing American Health Care Association (AHC), American Association of Homes & Services for the Elderly (AAHSA), requests Approval as Modified by this Public Comment.**

Replace the proposal as follows:

#### 1. Revise as follows:

**308.2 (IFC [B] 202) Group I-1.** This occupancy shall include buildings, structures or portions thereof housing more than 16 persons on a 24 hour basis who because of age, mental disability or other reasons, live in a supervised environment that provides *personal care services*. ~~The occupants are capable of responding to an emergency situation without physical assistance from staff. Occupants are either capable or incapable of self preservation.~~

I-1 A facility with occupants receiving personal care that are capable of self preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- ~~Assisted living facilities~~
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- ~~Residential board and care facilities~~
- Social rehabilitation facilities

I-1 Incapable. A facility with occupants receiving personal care that are incapable of self preservation, shall be classified as a Group I-1 Incapable condition and shall comply with the additional requirements of Group I-Incapable. This group shall include, but not be limited to, the following:

- Assisted living facilities
- Residential board and care facilities

A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. A facility such as above, housing at least six and not more than 16 persons, shall be classified as Group R-4.

#### 2. Add new text as follows:

**308.3.1 (IFC [B] 202) Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**INCAPABLE OF SELF PRESERVATION.** Persons because of age, physical limitations, mental limitations, chemical dependency or medical treatment cannot respond as an individual to an emergency situation.

*(Definitions not shown are unchanged.)*

#### 3. Revise as follows:

**310.2 (IFC [B] 202) Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**RESIDENTIAL CARE/ASSISTED LIVING FACILITIES.** A building or part thereof housing persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal care services. The occupants are either capable or incapable of self preservation. ~~of responding to an emergency situation without physical assistance from staff.~~ This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.

*(Definitions not shown are unchanged.)*

### **SECTION 420 GROUPS I-I, R-1, R-2, R-3**

**420.1 General.** Occupancies in Groups I-1, R-1, R-2, and R-3 shall comply with the provisions of this section and other applicable provisions of this code.

**420.2 Separation walls.** Walls separating dwelling units in the same building, walls separating sleeping units in the same building and walls separating dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 709.

**420.3 Horizontal separation.** Floor assemblies separating dwelling units in the same buildings, floor assemblies separating sleeping units in the same building and floor assemblies separating dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as horizontal assemblies in accordance with Section 712.

**420.4 Smoke barriers in Group I-1 Incapable.** Smoke barriers shall be provided in Group I-1 Incapable facilities to subdivide every story used by occupants receiving care into a minimum of two smoke compartments. Such stories shall be divided into smoke compartments with an area of not more than 22,000 square feet (2092 m<sup>2</sup>) and the travel distance from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 710.

**420.4.1 Smoke compartment areas.** Smoke compartment areas shall be used for relocation of occupants as part of building evacuation in a fire emergency. At least 15 net square feet (1.4 m<sup>2</sup>) shall be provided per occupant receiving care within the aggregate area of corridors, lounge or dining areas and other low hazard areas on each side of each smoke barrier, for the total number of occupants in adjoining smoke compartments.

**420.4.2 Independent egress.** A means of egress shall be provided from each smoke compartment created by smoke barriers without having to return through the smoke compartment from which means of egress originated.

**420.4.3 Horizontal assemblies.** Horizontal assemblies supporting smoke barriers required by this section shall be designated to resist the movement of smoke and shall comply with Section 712.9.

**504.2 Automatic sprinkler system increase.** Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one, but shall not exceed 60 feet (18 288 mm) or four *stories*, respectively.

**Exceptions:**

1. Buildings or portions of buildings, classified as a Group I-1 Incapable or I-2 occupancy of Type IIB, III, IV or V construction.
2. Buildings or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.
3. Fire resistance rating substitution in accordance with Table 601, Note d.

**710.5 Openings.** Openings in a smoke barrier shall be protected in accordance with Section 715.

**Exceptions:**

1. In Group I-1 Incapable and Group I-2, where such doors are installed across corridors, a pair of opposite-swinging doors without a center mullion shall be installed having vision panels with fire-protection-rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested. The doors shall be close fitting within operational tolerances, and shall not have undercuts in excess of 3/4- inch, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges and shall be automatic-closing by smoke detection in accordance with Section 715.4.8.3. Where permitted by the door manufacturer's listing, positive-latching devices are not required.
2. In Group I-1 Incapable, and Group I-2, horizontal sliding doors installed in accordance with Section 1008.1.4.3 and protected in accordance with Section 715.

**[F] 903.2.6 (IFC 903.2.6) Group I.** An automatic sprinkler system shall be provided throughout buildings with Group I fire areas.

**Exception:** An automatic sprinkler system installed in accordance with Section 903.3.1.2 or 903.3.1.3 shall be allowed in Group I-1 facilities, other than those classified as Group I-1 Incapable.

**[F] 907.2.6.1 (IFC 907.2.6.1) Group I-1.** An automatic smoke detection system shall be installed in *corridors*, waiting areas open to *corridors* and *habitable spaces* other than *sleeping units* and kitchens of Group I-1 occupancies. The system shall be activated in accordance with Section 907.5.

**Exceptions:**

1. For buildings other than those classified as Group I-1 Incapable, s Smoke detection in habitable spaces is not required where the facility is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Smoke detection is not required for exterior balconies.

**Commenter's Reason: GENERAL SUMMARY OF G21 SUBSTITUTION & MODIFICATION:**

This modified and simplified G21 completely substitutes the original G21. It reflects the actual resident types that currently occur nationally and creates associated requirements already enforced across much of the country by individual state regulations. This background information and substantiation was referenced in the original G21 proposal. The modified G21 will bring more consistency to enforcement of the variety of Group I-1 uses.

The revised G21 is a response to the Baltimore hearings committee and public comments to the original G21 proposal. This revised proposal simplifies the original G21 substantially:

It leaves the number counts unrevised: I-1: >16/ R-4: 6-16 occupants.

It revises Group I-1 to allow both capable and incapable occupants versus the current only capable occupants.

It adds only to a new Group I-1 Incapable occupancy condition four more restrictive requirements: smoke barriers, story limitations, increased NFPA 13 sprinkler protection, and additional smoke detection.

The Group R-4 use definition is changed to allow either capable or incapable occupants. Group R-4 still matches what most states currently enforce even with capable and incapable residents in protection, story, and sprinkler requirements.

The modified G21 can also align and mix easily with the relative proposed revisions in the G20 if both are approved, since only three of the G21 sections would require integration with the correlating G20 sections.

This proposal also shows that the new Group I-1 Incapable categorization is appropriately more protective than having the use in the Group I-2 occupancy as some prefer.

It shows in the following table analysis that this revised Group I-1 Incapable still has appropriate corridor protections, smoke detection, and smoke alarms, which Group I-2 does not include. It shows that there are seven sections in the new Group I-1 that are more stringent than I-2, versus only three IBC sections in Group I-2 that are more stringent than the proposed I-1 Incapable requirements.

It also shows that I-1 assisted living normally have less staff to resident ratios than Group I-2, which is why assisted living requires a higher level of safety to compensate for these lower staff levels.

The new "Group I-1 Incapable" condition includes smoke barriers which provide an additional protective separation for occupants from a fire event. They provide temporary protection for occupants that require assistance from others to eventually reach an exit in an emergency. These Group I-1 facilities still complete building evacuation and residents participate in fire drills, which is consistent with the current International Fire Code. This is versus the "defend in place" concept of Group I-2.

The table below shows the differences of the two occupant types, staffing ratios and compares protection features based on those similarities and differences. The table is based on the original G21 referenced national Hawaii study on assisted living.

<b>G21: INCAPABLE Personal Care to Health Care Comparisons</b>	
<b>LEGEND: (+ +) = New G21 Change or Requirement / Grey Fill = MORE Protection Required</b>	
<b>I-1 Incapable-Personal Care-Assisted Living</b> I-1: >16 Slower / <u>Incapable</u> R-4: 6-16 Slower / <u>Incapable</u> Conscious/ Evacuate with Assistance	<b>I-2 Health Care-Nursing</b> I-2: >5 Incapable Incapable/ Bedridden/ Life Support Defend in Place
<p><b>38,000 facilities</b> regulated in 50 states under individual state regulations</p> <p><b>-51 of 89 Categories Incapable</b> &gt; 5 residents. (Some states have up to 3 categories). +/- 32 states have both Capable and Incapable categories. +/- 14 states categorize all facilities as Incapable. +/- 4 states require all their facilities to be Capable.</p> <p><b>Bedridden NOT allowed</b> except to allow for typical short term illnesses ranging from 7-14 days in 21 states.</p> <p><b>Nursing Care generally only allowed or only limited</b> intermittent in all 50 states. If allowed only when the facility can provide services for short term illness.</p> <p>Night time staff to resident ratio: +/- 1:20 to 1:35</p>	<p><b>17,000 facilities</b> regulated in all 50 states under federal regulations.</p> <p><b>All facilities are considered Incapable.</b></p> <p><b>Bedridden allowed and common.</b></p> <p><b>Nursing care allowed and common.</b></p> <p>Night time staff to res. Ratio: +/- 1:8 to 1:15.</p>
<p><b>(+ +) Ch 4: SMOKE BARRIERS</b> for Incapable only.</p> <p><b>Ch 4: NO OPEN SPACE</b> to corridor exceptions. (Less staff)</p> <p><b>CH 4: NO EXCEPTIONS</b> for corridor and door rating.</p> <p><b>Ch 4: FIRE PARTITIONS</b> between units.</p>	<p><b>Ch 4: Smoke Barriers</b> required.</p> <p><b>Ch 4: Open space</b> to corridor allowed. (More staff and Protect In Place)</p> <p><b>CH 4: NO</b> corridor and door rating by exception. (More staff.)</p> <p><b>Ch 4: NO</b> Fire Partitions between units.</p>
<p><b>Ch 5: (+ +) NO SPRINKLER STORY INCREASE ALLOWED</b> 3 stories Type VA, 4 stories Type IIA for I-1 <u>For Incapable only.</u></p>	<p><b>Ch 5: No sprinkler story increase allowed</b> 1 story Type VA, 3 in Type IIA</p>
<p><b>(+ +) Ch 9: NFPA 13 SPRINKLERS</b> <u>For I-1 Incapable only.</u> 13R/ D for others and R-4</p> <p><b>(+ +) CH 9: SMOKE DETECTION</b> In common spaces for <u>Incapable only.</u> <b>No exception.</b> (Less staff)</p> <p><b>CH 9: SMOKE ALARMS</b> required. (Less staff)</p>	<p><b>Ch 9: NFPA 13 sprinklers</b></p> <p><b>CH 9: NO</b> Smoke detection by exception allowed in common spaces. (More staff.)</p> <p><b>CH 9: NO</b> smoke alarms required. (More staff)</p>
<p><b>CH 10: NO SUITE</b> exception to corridor protection allowed. (Less staff)</p> <p><b>Ch 10: RATED CORRIDORS &amp; DOORS .</b> (Less staff)</p>	<p><b>CH 10: Suites allowed.</b> (More staff )</p> <p><b>Ch 10: NO rated corridor and doors.</b> (More staff)</p>
<p><b>CH 10: No bedridden</b> corridor width. (No bedridden/ life support)</p>	<p><b>CH 10: Bedridden</b> corridor width. (Bedridden/ life support)</p>
<p><b>Ch 16: No structural redundancy</b> (No bedridden/ life support)</p>	<p><b>Ch 16: Structural redundancy</b> required &gt;50. (Bedridden/ life support)</p>

**ITEMIZED IBC SECTION REASONS:**

**Section 308.2** The G21 is modified to allow both capable and incapable of self preservation occupants in Group I-1. Currently nearly all state licensing agencies allow a majority of their assisted living classifications to have incapable residents according to the original G21 referenced Hawaii study. The general Group I-1 section is revised to be formatted similar to the Chapter 3 Group A format to cover both the capable and incapable conditions. The "condition" concept for Group I-1 is also used in the Group I detention occupancy.



Group I-1: The modified G21 maintains all current Group I-1 (capable of self preservation) facilities to remain as they are currently classified with the same associated requirements thru ought the code. Labeling Group I-1 without the “capable” condition heading maintains consistency with the past labeling of Group I-1 permits and classifications. The G21 then adds a new additional “incapable” condition:

Group I-1 Incapable: Both assisted living and residential board and care uses are relocated under the new heading “Group I-1 Incapable” condition, since the Hawaii study shows that a majority of these uses allow incapable occupants. This change will require most assisted living to conform to Group I-1 Incapable requirements. The revised G21 then confirms that Group I-1 Incapable will meet the basic Group I-1 requirements and “additional” requirements of Group I-1 Incapable” in four areas of the code. This type of “in addition” charging statement is also used in Chapter 4 requirements. A majority of state licensing agencies already implement similar protection requirements, since they enforce either NFPA 101 for new buildings or include state amendments to the IBC. The “Incapable” occupancy condition keeps an obvious permit record to show the resident capability type.

**Section 308.3.1** is added to introduce the term incapable if self preservation. This term is required to correspond to the modification of Section 308.2. This is the term introduced for its use in the Group I-1 charging statement. The revised G21 purposely matches the term and definition from the G20, in case both proposals are approved.

**Section 310.2** The modified G21 revises the “Residential Care/Assisted Living” definition to allow either capable or incapable of self preservation occupants similar to the G21 Group I-1 changes. The modified G21 does not propose any other changes to the Group R-4 protection requirements for the following reasons:

Most state licensing agencies already allow the incapable resident type in these smaller 6-16 facilities. The reason for this is that three quarters of the state licensing agencies enforce NFPA 101 in their small facilities for 6-16 residents. All versions of NFPA 101 allow both capable and incapable residents in their small 6-16 category. The current IBC R-4 (capable) and correlating NFPA 101 Small (6-16) (incapable) Residential Board and Care facility requirements have essentially the same requirements. The key matching protection feature in both codes for these small facilities is the requirement of residential sprinklers. They both allow up to four stories in combustible construction. Other detailed protection requirements match each other. Both codes do not add smoke barriers since they are only required in facilities with over 16 residents (Group I-1 and NFPA Large). The smaller size of these facilities means travel time and possible exposure is less.

If the R-4 occupant type was not changed in the G21, those R-4 incapable uses would continue to not be specifically classified or be classified as Group I-2. Group I-2 classification for these small facilities requires excessive protection and cost such as NFPA 13 sprinklers, one story wood frame limitation, and hard conduit.

**Section 420.4** Smoke barriers are modified in the G21 as a requirement in the Group I-1 Incapable condition. The heading is per heading formats currently found in other Chapter 4 sections and Section 1017. Smoke barriers are added due to new proposed resident type allowed and to match already existing state licensing regulations in a majority of states. The section utilizes and matches technical requirements, language and format from the current I-2 Section 407 for smoke barriers. The smaller smoke compartment size from the previous original G21 is removed and the current size requirements from the current Group I-2 are implemented.

**Section 420.4.1** The modified G21 added “smoke compartment area” requirement utilizes similar current text from Section 422 Ambulatory Health Care Facilities and I-2 Section 407.4.1. The 15 square feet per occupant matches the non bed occupant area requirements of the current corresponding NFPA 101 Residential Board and Care requirements enforced over its last three editions. This 15 square foot requirement is already required by state assisted living licensing agencies in approximately 20 states. The area proposed is half the current bed and litter requirement but more than double the 6 square feet for non bed and litter areas in the Group I-2. Treatment rooms are purposely omitted from this I-1 version compared to the I-2, since occupants in personal care are not considered patients and thus do not receive treatment. Patient rooms are purposely omitted from this I-1 version compared to the I-2 for the same term reason and resident rooms are generally not a place where these types of residents are instructed to temporarily go to before exiting in emergency drills.

The charging statement is purposely different than the Group I-2 “Refuge Area” description and intent. The charging statement provides that smoke compartment areas are “for relocation of occupants as part of building evacuation in a fire emergency.” This concept is different than the “defend in place” concept of the refuge area of the Group I-2 section 407.4.1. The Group I-2 defend in place concept assumes higher staff levels capable of assisting mostly incapable occupants, with some bedridden and some occupants on life support systems. Group I-1 incapable occupants, by not being bedridden or on life support, have typically less staff to resident ratios assisting residents than Group I-2. Less staff makes Group I-1 less of a viable option for the “defend in place” concept. For this reason the G21 Group I-1 Incapable “smoke compartments areas” only provide an additional temporary protection area for occupants. These occupants with assistance from others are trained through fire drills, to still eventually reach an exit in an emergency.

This emergency evacuation concept proposed is consistent with the current International Fire Code that states that Group I-1 residential care assisted living facilities shall include eventual complete building evacuation and that residents participate in fire drills. Residents are also still active participants in the required fire drills versus Group I-2 occupants. The Group I-1 Incapable residents still practice evacuation during fire drills to a “selected assembly point and shall provide experience in exiting through all required exits” as stated in the Fire Code. That practice evacuation assembly point is assumed to not require full building evacuation during fire drills due to impractical and unsafe weather but to train residents in evacuation drills to eventually reach an exit in a real emergency with assistance as needed.

**Section 420.4.2** The independent egress requirement remains as is from the original G21 proposal and utilizes exact wording matching the current I-2 Section 407.4.2 for smoke barriers.

**Section 420.4.3** The horizontal assembly requirement remains as is from the original G21 proposal and utilizes exact wording matching the current I-2 Section 407.4.3 for smoke barriers.

**Section 504.2.** The modified G21 requires that the new Group I-1 Incapable condition not be allowed to use sprinklers for story increases in Type IIB, III, IV, or V construction. The limitation is proposed due to the new incapable resident type allowed. It is also because about 30 states already limit their incapable assisted living facilities to less than the four stories that are currently allowed in Group I-1 in the combustible construction types. The three story limitation for the most commonly utilized Type VA construction is a “middle ground” of current enforcement across the 50 states. The four stories in Type VA are still allowed in this new G-21 for only Group I-1 capable facilities. Below is an approximate tally of the varying story requirements enforced by states licensing agencies that allow incapable occupants in their assisted living facilities. It is derived from the Hawaii study and compares the three different story requirements enforced by limited state IBC amendments and various editions of NFPA 101 that most states currently enforce.

- o About 15-20 state licensing agencies limit incapable assisted living Type VA wood frame to 4 stories: They use older NFPA 101 1998 and prior editions for their “Slow” incapable category. The largest percentage of assisted are considered “Slow,” which allows 3-13 minutes with assistance to reach a point of safety, including the state of Washington incapable R-2 (I-1) IBC amendments.
- o About 15-20 state licensing agencies limit incapable assisted living Type VA wood frame to 2 stories: They use current NFPA 101 2003 and 2006 editions which eliminate the “Prompt,” “Slow” and “Impractical” timing categories and assume incapable occupants. This tally also includes the older NFPA 101 1998 and prior editions “Impractical” categorization alternate means with horizontal exits with smoke barriers, and include incapable I-1 state of California and Hawaii IBC amendments.
- o Less than 10 state licensing agencies limit incapable assisted living Type VA wood frame to 1 story: This is because those state licensing agencies use the most restrictive NFPA 101 2000 edition and they only allow the “Impractical” category, which is the most stringent NFPA category. About five of these states require that all of their incapable assisted living categories be limited to being classified as NFPA 101

2000 "Impractical" one story Type VA limit with no "Slow" categorization allowed: NJ, ID, SC, OK, TX. (NFPA itself has eliminated this categorization in its last three more current editions.)

**Section 710.5** is modified in the G21 to include cross corridor doors in the new required smoke barriers in Group I-1 Incapable condition, matching the same exceptions allowed for I-2.

**Section 903.2.6** is modified in the G21 to require full NFPA 13 sprinkler coverage in the Group I-1 Incapable condition facility fire areas. The NFPA 13 requirement is added due to the new proposed resident type allowed. Currently over half the states licensing agencies already require NFPA 13 sprinklers in their assisted living facilities with incapable occupants. This is due to their requiring various versions of NFPA 101 or by their state amendments to the IBC. The exception is revised to allow NFPA 13R in other capable of self preservation I-1 facilities, maintaining the current exception for the current capable Group I-1 uses.

**Section 907.2.6.1** is revised in the modified G21 to eliminate the smoke detection exception only in Group I-1 Incapable condition buildings when sprinklers are provided. Currently over half the states licensing agencies already require smoke detection in their assisted living facilities with incapable occupants. This is due to their requiring various versions of NFPA 101 or by their state amendments to the IBC. This proposal still allows the exception to be applied to other Group I-1 when all residents are capable of self preservation within a building as defined by fire walls or exterior walls.

**Cost Impact:** The code change proposal will not increase the cost of construction due to current enforcement of similar requirements by other regulations such as state licensing regulations enforced in about three quarters of the states.

Final Action: AS AM AMPC\_\_\_\_\_ D

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## G24-09/10 308.2 (IFC [B] 202)

### Proposed Change as Submitted

**Proponent:** Tom Lariviere, Chairman, representing Joint Fire Service Review Committee

#### Revise as follows:

**308.2 (IFC [B] 202) Group I-1.** This occupancy shall include buildings, structures or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- Residential board and care facilities
- Social rehabilitation facilities

A facility such as the above with housing five or fewer persons shall be classified as Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2, provided the building is protected by an automatic sprinkler system installed in accordance with Section 903.2.8. A facility such as above, housing at least six and not more than 16 persons, shall be classified as Group R-4.

**Reason:** This proposal will continue to allow the smaller congregate care facilities to be constructed either as an R-3, or under the IRC. But when the IRC is used for this facility, the facility must be sprinklered.

If a new structure is built, it will be required to be sprinklered. A new facility can be constructed either as an R-3 under the IBC which will require a fire sprinkler system, or as a one-family dwelling under the IRC which will also require a fire sprinkler system is installed. However, many congregate care facilities open and occupy an existing structure. This revision will require that when an existing single family home is used as a small congregate care facility, it will also be sprinklered.

These occupancies, even though housing less than six occupants, still have the same clientele as the I-1 occupancy. The facility is still a Group Home, a Congregate Care Facility, or an Assisted Living Facility, etc. Many of the occupants in these facilities have limited capability or delayed response for self-preservation in an emergency.

This proposed wording in this proposal was approved in Item G36 07-08 for R-4 occupancies where a similar concept applies. The sprinkler system provides the desired level of life safety regardless of whether the facility houses 5 or 6 occupants.

**Cost Impact:** The code change proposal will increase the cost of construction.

ICCFILENAME: LARIVIERE-G1-308.2

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The IRC has its own sprinkler requirements and the IBC should not be used to specify sprinkler requirements in buildings subject to the IRC. In addition it would set up a conflict between the sprinkler systems allowed by the IRC and those that would be required under this change.

**Assembly Action:**

**None**

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### Individual Consideration Agenda

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Joe Pierce, Chairman, representing Joint Fire Service Review Committee, requests Approval as Submitted.**

**Commenter's Reason:** This proposal was Disapproved at the Code Development Hearing because it was felt that this is not consistent language with the I-Codes. However, Section 310.1 contains identical language for referring an R-4 to the IRC for construction.

The IBC governs construction for commercial purposes, and a Congregate Residence is a commercial facility. The IBC also allows construction of the Congregate Residence under the IRC provided that the building is equipped with a fire sprinkler system.

The references in the IBC assume that the building constructed under the IRC will be sprinklered, and it is important to maintain this requirement. This revision is the same as is currently required for an R-4 occupancy, and is only more critical in these facilities since they are classified as Group I occupancies.

Final Action:                    AS                    AM                    AMPC\_\_\_\_                    D

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## **G28-09/10 Part I**

### **310.1(IFC [B] 202), 310.2**

### Proposed Change as Submitted

**Proponent:** Maureen Traxler, City of Seattle, Seattle Dept of Planning & Development

#### **PART I - IBC**

##### **1. Revise as follows:**

**310.1 (IFC [B] 202) Residential Group R.** Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *International Residential Code* in accordance with Section 101.2. Residential occupancies shall include the following:

**R-1** Residential occupancies containing *sleeping units* where the occupants are primarily transient in nature, including:

- Boarding houses* (transient)
- Hotels (transient)
- Lodging houses with more than 5 guest rooms
- Motels (transient)

*Congregate living facilities* (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

**R-2** Residential occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

Apartment houses  
*Boarding houses* (nontransient)  
Convents  
Dormitories  
Fraternities and sororities  
Hotels (nontransient)  
Live/work units  
Monasteries  
Motels (nontransient)  
Vacation timeshare properties

*Congregate living facilities* with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

**R-3** Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two *dwelling units*.  
Adult care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.  
Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.  
*Congregate living facilities* with 16 or fewer persons.  
Lodging houses with 5 or fewer guest rooms

Adult care and child care facilities that are within a single-family home are permitted to comply with the *International Residential Code*.

Lodging houses with five or fewer guest rooms are permitted to comply with the *International Residential Code*.

**R-4** Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code or shall comply with the *International Residential Code* provided the building is protected by an *automatic sprinkler system* installed in accordance with Section 903.2.7.

## 2. Add new definitions as follows:

**310.2 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**GUEST ROOM.** Any room or rooms used or intended to be used by one or more guests for living or sleeping purposes.

**LODGING HOUSE.** A dwelling occupied as a single-family unit where rent is paid for guest rooms.

**Reason:** This proposal allows small bed and breakfasts to be constructed according to the International Residential Code. Currently, the IRC does not address whether nightly rentals are allowed, so jurisdictions across the country are applying the code differently. We chose to add a definition of "lodging house" to generally encompass rental lodging within dwelling units, distinct from hotels and boarding houses which are "not occupied as a single-family unit." We are proposing a general term rather than the more common term "bed and breakfast" partly because that term would imply that the building official would monitor what meals were served at the lodging.

**Cost Impact:** The code change will not increase the cost of construction.

ICCFILENAME: Traxler-G10-310.doc

## **Public Hearing Results**

### **PART I- IBC GENERAL**

#### **Committee Action:**

**Disapproved**

**Committee Reason:** The proposal would set up a potential conflict with the already defined term of 'sleeping unit' and therefore the application of Chapter 11 would be unclear. There would also be a need to address this use in Chapter 29 regarding plumbing fixture requirements.

**Individual Consideration Agenda**

This item is on the agenda for individual consideration because a public comment was submitted.

*Public Comment:*

**Maureen Traxler City of Seattle representing the Department of Planning and Development, requests Approval as Modified by this Public Comment for Part I.**

**Replace the proposal as follows:**

**310.1 Residential Group R.** Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *International Residential Code* in accordance with Section 101.2. Residential occupancies shall include the following:

*(no change to R-1 and R-2)*

**R-3** Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two *dwelling units*.

Adult care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.

Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.

*Congregate living facilities* with 16 or fewer persons.

Owner-occupied bed-and-breakfasts with 5 or fewer guest bedrooms

Adult care and child care facilities that are within a single-family home are permitted to comply with the *International Residential Code*.

Owner-occupied bed-and-breakfasts with 5 or fewer guest bedrooms are permitted to comply with the *International Residential Code*.

**Commenter's Reason:** This proposal is a coordinated attempt to revise the IBC and IRC to allow small bed and breakfasts to be classified as Group R-3 or comply with the IRC. The proposal for the IRC was approved with a modification on a floor vote at the committee hearings in Baltimore, and the IBC proposal was disapproved. This public comment will coordinate the IBC with the IRC provision by stating that bed and breakfasts with 5 or fewer guest bedrooms may comply with the IRC, and by making 5 guest bedrooms the maximum allowed as R-3 occupancies. This modified proposal also requires the bed and breakfast to be owner-occupied, for consistency with the IRC, and for consistency with the charging language in Section 310.1 which says that Group R-3 includes "Residential occupancies where the occupants are primarily permanent in nature...." While the guests are not permanent, the owner-occupants are permanent and familiar with the home. This comment deletes the original proposal's provision for classifying homes with more than 5 as R-1 because we believe they would be classified that way using the current language.

Final Action: AS AM AMPC\_\_\_ D

## **G28-09/10 Part II**

### **R101.2, R202**

**Proposed Change as Submitted**

**Proponent:** Maureen Traxler, City of Seattle, representing the Department of Planning & Development

**PART II – IRC BUILDING AND ENERGY****1. Revise as follows:**

**R101.2 Scope.** The provisions of the *International Residential Code for One- and Two-family Dwellings* shall apply to the construction, *alteration*, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above *grade plane* in height with a separate means of egress and their *accessory structures*.

**Exceptions:**

1. Live/work units complying with the requirements of Section 419 of the *International Building Code* shall be permitted to be built as one- and two-family *dwellings* or townhouses. Fire suppression required by Section 419.5 of the *International Building Code* when constructed under the *International Residential Code for One- and Two-family Dwellings* shall conform to Section 903.3.1.3 of the *International Building Code*.

2. Lodging houses with five or fewer guest rooms shall be permitted to be constructed in accordance with the International Residential Code for One- and Two-family Dwellings.

**2. Add new definitions as follows:**

**SECTION R202  
DEFINITIONS**

**GUEST ROOM** is any room or rooms used or intended to be used by one or more guests for living or sleeping purposes.

**LODGING HOUSE** is a one-family dwelling where one or more occupants are primarily permanent in nature, and rent is paid for guest rooms.

**Reason:** This proposal allows small bed and breakfasts to be constructed according to the International Residential Code. Currently, the IRC does not address whether nightly rentals are allowed, so jurisdictions across the country are applying the code differently. We chose to add a definition of "lodging house" to generally encompass rental lodging within dwelling units, distinct from hotels and boarding houses which are "not occupied as a single-family unit." We are proposing a general term rather than the more common term "bed and breakfast" partly because that term would imply that the building official would monitor what meals were served at the lodging.

**Cost Impact:** The code change will not increase the cost of construction.

ICCFILENAME: Traxler-G10-310.doc

**Public Hearing Results**

**This item is on the agenda for individual consideration because an Assembly Action was different than the Committee Action.**

**Staff Note:** There was an error in the way G28-Part II was shown in the Report of Public Hearings. The text at the end of Exception 2 was added by the Assembly Action, but did not appear in the Report of Hearings.

**PART II – IRC – B/E**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee feels this is a good change but it needs more work. The term "to be constructed" implies new construction and renovations need to be addressed. Also, some of the distinctions would be better suited in the Zoning Code rather than the IRC.

**Assembly Action:**

**Approved as Modified**

**R101.2 Scope.** The provisions of the *International Residential Code for One- and Two-family Dwellings* shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above *grade plane* in height with a separate means of egress and their *accessory structures*.

**Exceptions:**

1. Live/work units complying with the requirements of Section 419 of the *International Building Code* shall be permitted to be built as one- and two-family dwellings or townhouses. Fire suppression required by Section 419.5 of the *International Building Code* when constructed under the *International Residential Code for One- and Two-family Dwellings* shall conform to Section P2904 903.3.1.3 of the ~~*International Building Code*~~.
2. Owner occupied lodging houses with five or fewer guest rooms shall be permitted to be constructed in accordance with the *International Residential Code for One- and Two-family Dwellings* when equipped with a fire sprinkler system complying with Section P2904.

*(Portions of proposal not shown remain unchanged)*

**Reason for modification:** The modification adds the term "owner occupied" and would aid the misinterpretation about accessibility. The modification also will assure these units will be sprinklered.

ICCFILENAME: Traxler-G10-310.doc

## G31-09/10

402.2.1 (New), 402.3, 402.4, 402.4.1 402.4.1.1, 402.4.1.4, 402.4.3, 402.4.4, 402.4.5, 402.5.1, 402.5.2, 402.6, 402.6.1, 402.7.1, 402.7.3, 402.8, 402.9, 402.11, 402.12, 402.12.2, 402.12.3, [F]402.14, [F]402.15, 402.16, [F]905.3.3, [F]905.4, IFC 905.3.3, 905.4.

### Proposed Change as Submitted

**Proponent:** Sarah A. Rice, C.B.O., representing self

#### 1. Add new text as follows:

**402.2.1 Open mall building perimeter line.** For the purpose of this code, a perimeter line shall be established. The perimeter line shall encircle all buildings and structures which comprise the open mall building, and shall encompass any open-air interior walkways, open-air courtyards or similar open-air spaces. The perimeter line shall define the extent of the open mall building. Anchor buildings shall be outside of the perimeter line and are not considered as part of the open mall building.

#### 2. Revise text as follows:

**402.3 Lease plan.** Each ~~covered mall building~~ owner of a covered mall building or of an open mall building shall provide both the building and fire departments with a lease plan showing the location of each occupancy and its exits after the certificate of occupancy has been issued. No modifications or changes in occupancy or use shall be made from that shown on the lease plan without prior approval of the *building official*.

**402.4 Means of egress.** ~~Each tenant space and the~~ Covered mall buildings, open mall buildings and each tenant space within a mall building shall be provided with *means of egress* as required by this section and this code. Where there is a conflict between the requirements of this code and the requirements of ~~this section~~ Sections 402.4.1 through 402.4.6, the requirements of ~~this section~~ Sections 402.4.1 through 402.4.6 shall apply.

**402.4.1 Determination of occupant load.** The *occupant load* permitted in any individual tenant space in a covered or open mall building shall be determined as required by this code. *Means of egress* requirements for individual tenant spaces shall be based on the *occupant load* thus determined.

**402.4.1.1 Occupant formula.** In determining required *means of egress* of the mall, the number of occupants for whom *means of egress* are to be provided shall be based on gross leasable area of the covered or open mall building (excluding *anchor buildings*) and the *occupant load* factor as determined by the following equation.

$$OLF = (0.00007) (GLA) + 25 \qquad \text{(Equation 4-1)}$$

where:

OLF = The *occupant load* factor (square feet per person).

GLA = The gross leasable area (square feet).

**Exception:** Tenant spaces attached to a covered or open mall building but with a *means of egress* system that is totally independent of the open mall of an open mall building or of the a covered mall building shall not be considered as gross leasable area for determining the required *means of egress* for the *covered mall building*.

**402.4.1.2 OLF range.** *(No change to text.)*

**402.4.1.3 Anchor buildings.** *(No change to text.)*

**402.4.1.4 Food courts.** The *occupant load* of a food court shall be determined in accordance with Section 1004. For the purposes of determining the *means of egress* requirements for the mall, the food court *occupant load* shall be added to the *occupant load* of the covered or open mall building as calculated above.

**402.4.2 Number of means of egress.** *(No change to text.)*

**402.4.3 Arrangements of means of egress.** Assembly occupancies with an *occupant load* of 500 or more within a covered mall building shall be so located in the *covered mall building* that their entrance will be immediately adjacent to a principal entrance to the mall and shall have not less than one-half of their required *means of egress* opening directly to the exterior of the *covered mall building*. Assembly occupancies with an occupant load of 300 or more within an open mall building shall be permitted to have their main exit open to the open mall.

**402.4.3.1 Anchor building means of egress.** *(No change to text)*

**402.4.4 Distance to exits.** Within each individual tenant space in a *covered or open mall building*, the maximum distance of travel from any point to an *exit* or entrance to the mall shall not exceed 200 feet (60 960 mm).

The maximum distance of travel from any point within a mall of a covered mall building to an *exit* shall not exceed 200 feet (60 960 mm). The maximum distance of travel from any point within an open mall to the perimeter line of the open mall building shall not exceed 200 feet.

**402.4.5 Access to exits.** Where more than one *exit* is required, they shall be so arranged that it is possible to travel in either direction from any point in a mall of a covered mall building to separate *exits* or from any point in an open mall to two separate locations on the perimeter line of an open mall building. The minimum width of an *exit passageway* or *corridor* from a mall shall be 66 inches (1676 mm).

**Exception:** Dead ends not exceeding a length equal to twice the width of the mall measured at the narrowest location within the dead-end portion of the mall.

**402.4.5.1 Exit passageways.** *(No change to text.)*

**402.4.6 Service areas fronting on exit passageways.** *(No change to text.)*

**402.5 Mall width.** For the purpose of providing required egress, malls are permitted to be considered as *corridors* but need not comply with the requirements of Section 1005.1 of this code where the width of the mall is as specified in this section.

**402.5.1 Minimum width** ~~The minimum aggregate clear egress width of the mall in either a covered or open mall building shall be a minimum of 20 feet (6096 mm). The mall width shall be sufficient to accommodate the *occupant load* served. There shall be a minimum of 10 feet (3048 mm) clear exit width.~~ No portion of the minimum required aggregate egress width of shall be less than 10 feet measured to a height of 8 feet (2438 mm) between any projection of a tenant space bordering the mall and the nearest kiosk, vending machine, bench, display opening, food court or other obstruction to *means of egress* travel.

~~**402.5.2 Minimum width Open malls.** Floor assemblies in, and roof assemblies over the mall of an open mall buildings shall be open for a minimum of 20 feet, measured perpendicular from the face of the tenant spaces on the lowest level, from edge of balcony to edge of balcony on upper floors or from edge of roof line to edge of roof line. The opening, or the unroofed area shall extend from the lowest/grade level of the mall to the sky above the roof. Balconies on upper levels of the mall shall not project into the required width. The minimum floor and roof opening width above grade shall be 20 feet (6096 mm) in open malls.~~

**Exception:** Interior pedestrian bridges connecting balconies shall be permitted in the required width.

~~**402.6 402.7 Types of construction.** The building area of any *covered mall or open building*, including *anchor buildings*, of Types I, II, III and IV construction, shall not be limited provided the *covered mall building or open mall building*, and attached adjoining *anchor buildings* and parking garages are surrounded on all sides by a permanent open space of not less than 60 feet (18 288 mm) and the *anchor buildings* do not exceed three stories above grade plane. For open mall buildings, the width of the permanent open space shall be measured from the perimeter line established by Section 402.2.1.~~

The type of construction allowable building height and building area of *anchor buildings* greater than three stories above grade plane shall comply with Section 503, as modified by Sections 504 and 506. The construction type of *open parking garages* and enclosed parking garages shall comply with Sections 406.3 and 406.4, respectively.

~~**402.6.1 402.7.1 Reduced open space.** The permanent open space of 60 feet (18 288 mm) shall be permitted to be reduced to not less than 40 feet (12 192 mm), provided the following requirements are met:~~



1. The reduced open space shall not be allowed for more than 75 percent of the perimeter of the *covered or open mall building* and *anchor buildings*.
2. The *exterior wall* facing the reduced open space shall have a minimum *fire-resistance rating* of 3 hours.
3. Openings in the *exterior wall* facing the reduced open space shall have opening protectives with a minimum *fire protection rating* of 3 hours.
4. Group E, H, I or R occupancies are not within the *covered or open mall building* or *anchor stores*.

**402.7 402.8 Fire-resistance-rated separation.** Fire-resistance-rated separation is not required between tenant spaces and the mall. Fire-resistance-rated separation is not required between a food court and adjacent tenant spaces or the mall.

**402.7.1 402.8.1 Attached garage.** An attached garage for the storage of passenger vehicles having a capacity of not more than nine persons and *open parking garages* shall be considered as a separate building where it is separated from the *covered or open mall building* by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 712, or both.

**Exception:** Where an *open parking garage* or enclosed parking garage is separated from the *covered or open mall building* or *anchor building* a distance greater than 10 feet (3048 mm), the provisions of Table 602 shall apply. Pedestrian walkways and tunnels that attach the *open parking garage* or enclosed parking garage to the *covered or open mall building* or *anchor building* shall be constructed in accordance with Section 3104.

**402.7.2 402.8.2 Tenant separations.**

(No change to text.)

**402.7.3 402.8.3 Anchor building separation.** An *anchor building* shall be separated from the *covered or open mall building* by *fire walls* complying with Section 706.

**Exceptions:**

1. *Anchor buildings* of not more than three *stories above grade plane* that have an occupancy classification the same as that permitted for tenants of the ~~*covered mall building*~~ shall be separated by 2-hour fire-resistive *fire barriers* complying with Section 707.
2. The exterior walls of anchor buildings separated from an open mall building by an open mall shall comply with Table 602.

**402.7.3.1 402.8.3.1 Openings between anchor building and mall.**

(No change to text.)

**402.8 402.9 Interior finish.** *Interior wall* and *ceiling finishes* within the mall of a covered mall and within the exits of covered or open mall buildings shall have a minimum *flame spread index* and smoke-developed index of Class B in accordance with Chapter 8. *Interior floor finishes* shall meet the requirements of Section 804.

**[F] 402.9 402.10 Automatic sprinkler system.** ~~The *Covered and open mall building buildings*~~ and buildings connected shall be ~~equipped~~ protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, which shall comply with the all of the following:

1. The *automatic sprinkler system* shall be complete and operative throughout occupied space in the ~~*covered mall building*~~ prior to occupancy of any of the tenant spaces. Unoccupied tenant spaces shall be similarly protected unless provided with *approved* alternative protection.
2. Sprinkler protection for the mall of a covered mall building shall be independent from that provided for tenant spaces or ~~anchors~~ anchor buildings.
3. Sprinkler protection for the tenant spaces of an open mall building shall be independent from that provided for anchor buildings.
4. Sprinkler protection shall be provided beneath exterior circulation balconies located adjacent to an open mall.
5. Where tenant spaces are supplied by the same system, they shall be independently controlled.

**Exception:** An *automatic sprinkler system* shall not be required in spaces or areas of *open parking garages* separated from the *covered or open mall* in accordance with Section 402.7.1 and constructed in accordance with Section 406.3.

**402.9.4 [F] 402.11 Standpipe system.** (No change to text.)

**402.10 402.12 Smoke control.** (No change to text.)

**402.14 402.13 Kiosks.** Kiosks and similar structures (temporary or permanent) located within the mall of a covered mall building or within the perimeter line of an open mall building shall meet the following requirements:

1. Combustible kiosks or other structures shall not be located within ~~the~~ a covered or open mall unless constructed of any of the following materials:

(Text not shown remains unchanged.)

**402.12 402.14 Children's playground structures.** Where located within the mall of a covered mall or within the perimeter line of an open mall building, structures intended as children's playgrounds that exceed 10 feet (3048 mm) in height and 150 square feet (14 m<sup>2</sup>) in area shall comply with Sections 402.12.1 through 402.12.4.

**402.12.4 402.14.1 Materials.** (No change to text.)

**402.12.2 402.14.2 Fire protection.** Children's playground structures located within ~~the~~ a mall or open mall shall be provided with the same level of *approved* fire suppression and detection devices required for kiosks and similar structures.

**402.12.3 402.14.3 Separation.** Children's playground structures shall have a minimum horizontal separation from other structures within ~~the~~ a mall or open mall of 20 feet (6090 mm).

**402.12.4 402.14.4 Area limits.** (No change to text.)

**402.13 402.15 Security grilles and doors.** (No change to text.)

**402.14 [F] 402.16 Standby power.** Covered mall buildings exceeding 50,000 square feet (4645 m<sup>2</sup>) and open mall buildings exceeding 50,000 square feet within the established perimeter line shall be provided with standby power systems that are capable of operating the emergency voice/alarm communication system.

**402.15 [F] 402.17 Emergency voice/alarm communication system.** ~~Covered mall buildings exceeding 50,000 square feet (4645 m<sup>2</sup>) in total floor area shall be provided with an emergency voice/alarm communication system.~~ Where the total floor area exceeds 50,000 square feet within either a covered mall building or within the perimeter line of an open mall building, an emergency voice/alarm communication system shall be provided.

Emergency voice/alarm communication systems serving a mall, required or otherwise, shall be accessible to the fire department. The system shall be provided in accordance with Section 907.5.2.2.

**402.16 402.18 Plastic signs.** Plastic signs affixed to the storefront of any tenant space facing ~~the~~ a mall or open mall shall be limited as specified in Sections ~~402.16.1 through 402.16.5.2~~ 402.17.1 through 402.17.5.2.

(Text not shown remains unchanged.)

**402.17 [F] 402.19 Fire department access to equipment.** (No change to text.)

**[F] 905.3.3 (IFC 905.3.3) Covered and open mall buildings.** ~~A Covered mall building and open mall buildings~~ shall be equipped throughout with a standpipe system where required by Section 905.3.1. ~~Covered Mall buildings~~ not required to be equipped with a standpipe system by Section 905.3.1 shall be equipped with Class I hose connections connected to the *automatic sprinkler system* sized to deliver water at 250 gallons per minute (946.4 L/min) at the most hydraulically remote hose connection while concurrently supplying the *automatic sprinkler system* demand. The standpipe system shall be designed not to exceed a 50 pounds per square inch (psi) (345 kPa) residual pressure loss with a flow of 250 gallons per minute (946.4 L/min) from the fire department connection to the hydraulically most remote hose connection. Hose connections shall be provided at each of the following locations:

1. Within the mall at the entrance to each *exit* passageway or *corridor*.
2. At each floor-level landing within enclosed stairways opening directly on the mall.
3. At exterior public entrances to the mall of a covered mall building
4. At public entrances at the perimeter line of an open mall building.

5. At other locations as necessary so that the distance to reach all portions of a tenant space does not exceed 200 feet (60 960 mm) from a hose connection.

**[F] 905.4 (IFC 905.4) Location of Class I standpipe hose connections.** Class I standpipe hose connections shall be provided in all of the following locations:

1 through 3. *(No change in text.)*

4. In covered and open mall buildings, adjacent to each exterior public entrance to ~~the~~ a covered mall, adjacent to each public entrance at the perimeter line of an open mall and adjacent to each entrance from an exit passageway or exit corridor to the covered mall or an open mall.

5. and 6 *(No change in text.)*

**Reason:** The 2009 IBC was amended to allow an open mall to be built under the Covered Mall provisions of Section 402. However, the change was minimal in that it defined an open mall and open mall building and provided some specificity about the openness of the mall from the ground to the sky, but it did not address how each of the requirements within Section 402 would be applied to an open mall situation. For example, measuring the travel distance from a tenant space within a mall to an exit is unclear when the whole mall is 'exterior' to the buildings. This proposal goes through each section and revises each to clarify application to open malls. In general this required adding 'and open mall' or 'and open mall building' in various locations. Other locations the existing text stating application to a 'mall' was sufficient to allow application to both covered and open mall situations. Without providing revisions of this sort, the application of Section 402 will result in inconsistent interpretation from designer to designer and from jurisdiction to jurisdiction.

The intent of the 2009 change was to allow an open mall building to enjoy all of the benefits of being considered one unlimited area building with various tenants and occupancies. The key difference is that instead of the mall being covered, it is open to the sky. One then can begin wondering if the mall is 'exterior' to the building and therefore needs to be treated as exit discharge and the walls of the tenant spaces as exterior walls facing an assumed property line, or is it simply a covered mall building without a roof. The balance of this proposal takes the latter position, that the open mall building is simply a covered mall building without a roof.

**Sec. 402.2.1.** Only one new concept is established by the proposal – 'open mall building perimeter line'. The premise is that the designer establishes a boundary between what is considered to be part of the open mall building and what is outside of the building. This allows determination of the equivalent of exit travel distance for an exterior mall similar to a covered mall without there being a physical separation between the 'mall' and what is outside of the mall.

**Sec. 402.3.** Editorially revised to address owners of both types of malls and the required lease plan.

**Sec. 402.4.** Editorially revised to make it clear the egress provisions apply to covered and open malls. "This section" is replaced in two places with the specific section numbers for clarity of reference.

**Sec. 402.4.1.** Editorially revised in 3 subsections to clarify application of occupant load determinations.

**Sec. 402.4.3.** This is substantive change for open malls compared to covered mall buildings. Currently assembly occupancies with an occupant load over 500 needs to be located so that the entrance to the occupancy is adjacent to the mall entrance and 50% of the egress capacity goes directly outdoors. This proposal limits the application of this existing section to covered mall buildings. It then goes on to permit the open mall to be used as the discharge location for a main exit for assembly spaces over 300. There are many examples of this arrangement around the country including the theaters on the City walk open mall at Universal City in the Los Angeles area.

**Sec. 402.4.4 and 4.5.** These sections use the open mall perimeter line as a substitute for the exterior wall of a covered mall to determine when means of egress transitions from 'within' the mall to 'outside' of the mall.

**Sec. 402.5.1** The proposal makes section 402.5.1 generic for both types of malls. There is no intent to make a substantive change here.

**Sec. 402.5.2.** The existing code is currently in the wrong place –the requirement for 20 foot open is not related to egress but rather to the need for floor and roof assemblies in the mall portion of an open mall building to be open. There is no intent to make a substantive change here only to move to be a separate unique criteria.

**Sec. 402.6.** Since the concept of an open mall building is that there are many detached buildings, this provision of indicating the 60 foot open perimeter was around the attached buildings needed to be fixed to address that the anchor buildings next to an open mall building may not be physically attached.

**Sec. 402.7.3.** In an open mall building design, it is likely that the anchor buildings won't actually be attached. Therefore neither the fire wall nor fire barrier concept is appropriate. Therefore an exception is provided to treat such walls as exterior walls. But Section 402.7.3.1 will still apply and the openings in the wall need not be rated.

**Sec. 402.8.** This section currently requires wall and ceilings of the covered mall to meet specified flame spread of interior finishes. This applies to the mall itself. Tenant spaces need to comply with Chapter 8 independently. However, the walls of the open mall are not interior walls but actually exterior walls, which makes application of Chapter 8 inappropriate in most cases. The added language would still apply to any enclosed exits in an open mall building as well as the exits in a covered mall building.

**Sec. 402.9.** Since the open mall is open, without roof, there would be no requirement to provide sprinkler protection in the 'mall'. However, this proposal would still require sprinkler protection under exterior balconies which are providing circulation in the open mall. The concept here is there could be a multilevel open mall building with pedestrian walkways paralleling the front of the upper tenant spaces or bridges crossing the open mall. This would require sprinkler protection under such walkways.

**Sec. 402.9.1 is changed to 402.10.** This section refers to the standpipe requirements in Chapter 9. It is not a subset of sprinklers as is implied by the current numbering. This proposal moves it to its own equal section. Section 402 could use a reformatting of the sections similar to that provided to the 403 Highrise provisions in the 2009 code.

**Sec. 402.11 Kiosks and 402.12 Children's play structures.** This proposal treats those within the established perimeter line of an open mall building as if they were 'within' the mall.

**Sec. 402.14 Standby power and 402.15 Emergency Communication.** These would use the open mall building perimeter line to determine when the 50,000 square foot threshold was reached.

**Sec. 402.16 Signs.** The consistent approach of this proposal is to treat the 'open mall' as if it were interior facades along a mall which will have lots of occupants that are in restricted pathways until there get outside of the perimeter line. Therefore the limitation on signs should apply to those facing the open mall as well.

**Sec. 905.3.3 and 905.4.** These sections state the requirement for standpipes in a mall building and requires placement near the exits. As the open mall doesn't have 'exits' per se between the mall and the outside, the building perimeter line is used in lieu of the exits to specify the standpipe locations.

**Other locations.** The term 'covered mall building' is also used in the following sections of the IBC: 507.12, 709.1, 709.4, 716.5.4, Table 903.2.11.6, 907.2.7, 907.2.14, 2702.2.14, 2902.3.2, 2902.3.3 and 3412.6.19. In most of these locations the code should be editorially revised for consistency with this proposal. In most of these sections it will be sufficient to change 'covered mall building to 'covered and open mall buildings'.

**Cost Impact:** The code change proposal to the extent that it clarifies the application of the code in various situations may result in an increase the cost of construction where otherwise a designer or building official may have not thought that a provision of Section 402 applied.

**Analysis:** If this change is approved, staff can provide editorial revisions to the balance of the code and to the other I-Codes to be consistent with the intent of this proposal.

ICCFILENAME: RICE-G6-503.1.4.doc

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee acknowledged the effort to clarify the application of the covered mall provisions to the open mall concept. The proposal needs additional refinements. Of specific concern is the lack of clarity regarding balconies and bridges and the extent to which they could 'cover' the open mall; the relationship of the perimeter line to the anchor buildings and to the required open area around the open mall building; the relationship of the perimeter line with exit discharge as it would appear to permit exit access to dead end where a perimeter line adjoined an anchor building.

**Assembly Action:**

**None**

## **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Sarah A. Rice, CBO, representing self, requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**402.2.1 Open mall building perimeter line.** For the purpose of this code, a perimeter line shall be established. The perimeter line shall encircle all buildings and structures which comprise the open mall building, and shall encompass any open-air interior walkways, open-air courtyards or similar open-air spaces. The perimeter line shall define the extent of the open mall building. Anchor buildings and parking structures shall be outside of the perimeter line and are not considered as part of the open mall building.

**402.4.3 Arrangements of means of egress.** Assembly occupancies with an *occupant load* of 500 or more located within a covered mall building shall be so located ~~in the covered mall building~~ such that their entrance will be immediately adjacent to a principal entrance to the mall and shall have not less than one-half of their required *means of egress* opening directly to the exterior of the *covered mall building*. Assembly occupancies ~~with an occupant load of 300 or more~~ located within the perimeter line of an open mall building shall be permitted to have their main exit open onto the open mall.

**402.4.5 Access to exits.** Where more than one *exit* is required, they shall be so arranged that it is possible to travel in either direction from any point in a mall of a covered mall building to separate *exits*, or from any point in an open mall of a open mall building to two separate locations on the perimeter line ~~of an open mall building~~, provided neither location is an exterior wall of an anchor building or parking garage. The minimum width of an *exit passageway* or *corridor* from a mall or open mall shall be 66 inches (1676 mm).

**Exception:** Dead ends not exceeding a length equal to twice the width of the mall measured at the narrowest location within the dead-end portion of the mall.

**402.6 Open malls.** Floor assemblies in, and roof assemblies over, the open mall of an open mall ~~buildings~~ building shall be open to the atmosphere for a minimum of 20 feet, measured perpendicular from the face of the tenant spaces on the lowest level, from edge of balcony to edge of balcony on upper floors ~~or and~~ from edge of roof line to edge of roof line. The opening within, or the unroofed area of an open mall shall extend from the lowest/grade level of the open mall ~~through to the atmosphere sky above~~ the entire roof assembly. Balconies on upper levels of the mall shall not project into the required width of the opening.

**402.6.1 Pedestrian walkways.** ~~Exception: Interior Pedestrian walkways bridges connecting balconies in an open mall shall shall be located not less than 20 feet from any other pedestrian walkway be permitted in the required width.~~

*(Portions of proposal not shown remain unchanged.)*

**Commenter's Reason:** The fundamental intent of this proposal is to bring some design refinements to the relatively new code concept of an "open mall building." While these types of structures have been and are being constructed, the code has not had language that literally recognized the

concept. With the introduction of the term “open mall building” in the 2009 IBC these designs were not recognized, but the code lacked the design details. This proposal is intended to give the code user those details.

The Committees fundamental reason for disapproving this code change was the need for “additional refinement.” They were concerned by the following:

- the lack of clarity regarding balconies and bridges and the extent to which they could ‘cover’ the open mall;
- the relationship of the perimeter line to the anchor buildings and to the required open area around the open mall building;
- the relationship of the perimeter line with exit discharge as it would appear to permit exit access to dead end where a perimeter line adjoined an anchor building.

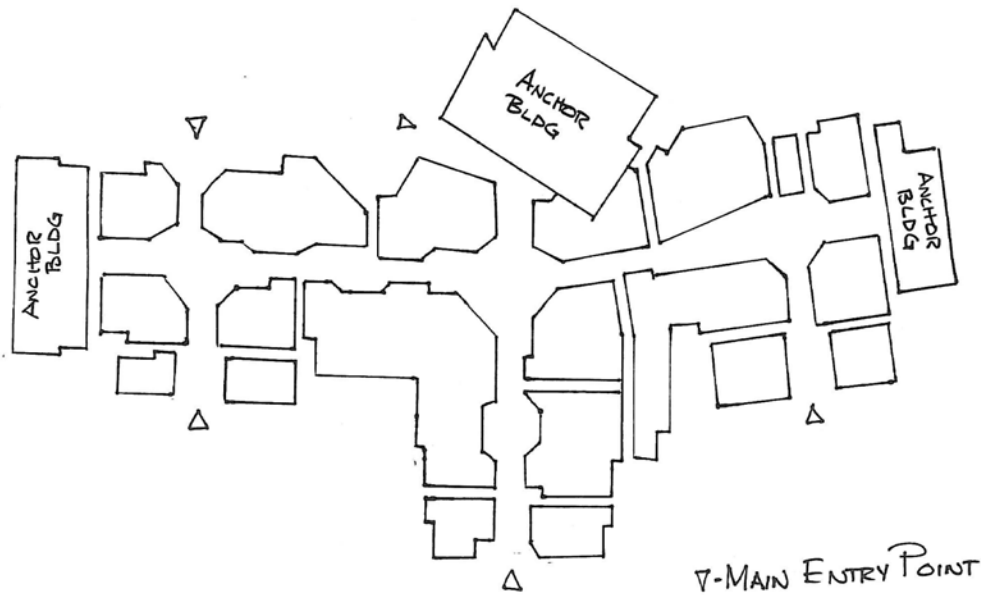
To bring clarity to the new provisions for open mall buildings and in response to the committee’s comments the following revisions have been made:

In Section 402.4.3 the redundant language has been addressed.

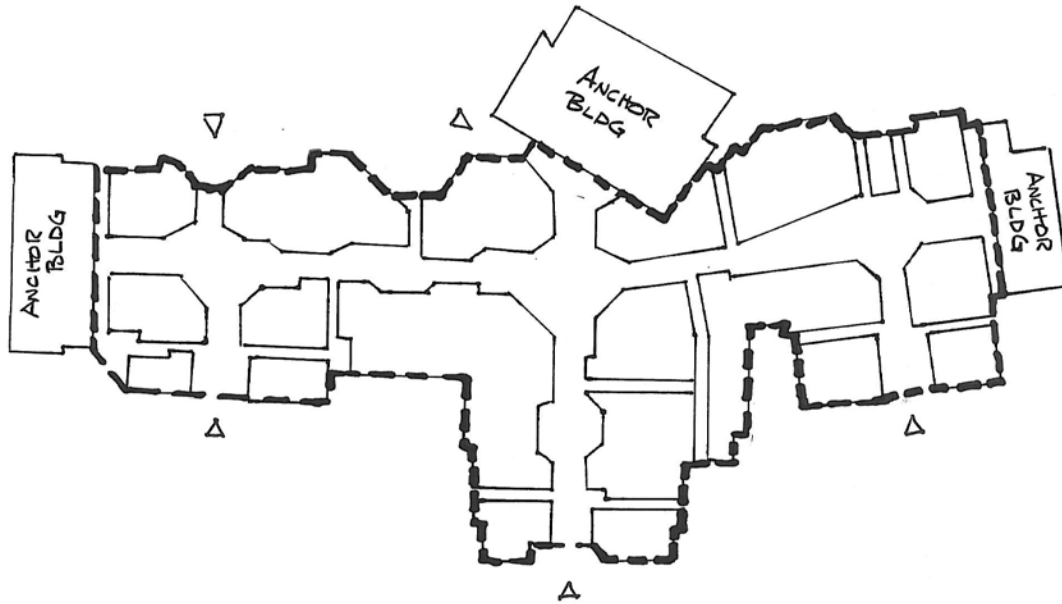
In Section 402.4.5 the language has been revised to clarify how the exit access travel distance in the open mall will be measured and that it cannot terminate at an exterior wall of an anchor building.

In Section 402.6 the language has been revised to clarify the sizing of the openings that must be in place for a structure to qualify as an open mall building. It also makes the Exception now a limitation on how pedestrian walkways are to be located in an open mall.

While not noted in the committee reason, there was some concern on where the “perimeter line” would be located. While each open mall building will be unique, the diagrams shown below is an example of how the various structures that typically make up an open mall building would be laid out, and then how the “perimeter line” would be situated around the structures. The designer will have the discretion as to the relative location of the “perimeter line,” similar to the discretion they have to place an imaginary line for purposes of determining the “fire separation distance” when two buildings are located on the same lot. But even with that discretion, it is anticipated that the “perimeter line” created for an open mall building will in essence enclose the same space as exterior walls would in a covered mall building.



**Open Mall Building  
Without “Perimeter Line”**



**Open Mall Building**

Example of where the "Perimeter Line" would be located.

Final Action: AS AM AMPC\_\_\_ D

**G41-09/10**  
**403.2.4, Table 403.2.4**

**Proposed Change as Submitted**

**Proponent:** Paul K. Heilstedt, PE, FAIA, Chair, representing ICC Code Technology Committee (CTC) and Lawrence G. Perry, AIA, representing Building Owners and Managers Association (BOMA) International

**Delete without substitution as follows:**

**403.2.4 Sprayed fire resistive materials (SFRM).** The bond strength of the SFRM installed throughout the building shall be in accordance with Table 403.2.4.

**TABLE 403.2.4**  
**MINIMUM BOND STRENGTH**

HEIGHT OF BUILDING <sup>a</sup>	SFRM MINIMUM BOND STRENGTH
Up to 420 feet	430 psf
Greater than 420 feet	1,000 psf

For SI: 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kW/m<sup>2</sup>

a. Above the lowest level of fire department vehicle access

**Reason: Heilstedt** - The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April/2005, the CTC has held seventeen meetings - all open to the public

This proposed change is a result of the CTC's investigation of the area of study entitled "Review of NIST WTC Recommendations". The scope of the activity is noted as:

Review the recommendations issued by NIST in its report entitled "Final Report on the Collapse of the World Trade Center Towers", issued September 2005, for applicability to the building environment as regulated by the I-Codes. To evaluate the necessity of developing code changes in response to the NIST report.

The current provisions for minimum bond strength were added to the code via G68-06/97. The following is the committees reason for inclusion:

**Committee Reason:** Although the data which provides technical support was not provided within the proposal, this does go along with the NIST recommendations and should provide better safety in high-rise buildings. Using the greater bond strengths will increase the probability that the protection will stay in place and will reduce the likelihood of being dislodged. These factors should provide for a longer time of safety. Placing the requirements in the high-rise provisions of Chapter 4 instead of within Chapter 7 makes sense because they are only applicable to high-rises and will be more likely to be found within that section. The committee did agree with the different bond strength requirements based upon the thought the taller buildings are at a higher risk and that items such as the vibration of tall buildings will affect the long term performance. Based on testimony which was provided, the cost impact of this requirement was considered as being relatively small. The higher density products which are currently available will generally meet these requirements. The modifications included a revision of the terminology "spray applied" to "sprayed" to be consistent with the action of FS156-06/07 and to create a more global point of reference for building height by moving footnote a to the main title of the first column.

In submitting a public comment to G69-07/08 last cycle to remove the minimum and retain the 150 psf in Chapter 17, CTC noted that the current provisions for minimum bond strength were the results of G68-06/07 last cycle. As noted in the reason statement for the code change, it notes "The purpose of this proposal is to increase the required adhesions of Spray Applied Fire Resistant Materials (SFRM)." The proposal further cites Recommendation 6 of the NIST WTC report which calls for improvement of the in-place performance of SFRM. NIST Recommendation 6 reads as follows:

NIST recommends the development of criteria, test methods, and standards: (1) for the in-service performance of sprayed fire-resistive materials (SFRM, also commonly referred to as fireproofing or insulation) used to protect structural components; and (2) to ensure that these materials, as-installed, conform to conditions in tests used to establish the fire resistance rating of components, assemblies, and systems.

The CTC notes that the prior to the approval of the increased bond strength in Table 403.15 that the code mandated cohesive/adhesive bond strength, regardless of height, was 150 psf in Section 1704.10.5. In fact, this section has remained unchanged and was not coordinated with the new provisions in Table 403.15.

Based on input received by the CTC, the CTC position remains that the bond strength should not be increased as a function of height. As noted in the NIST recommendation, the concern is one of in-service performance of the SFRM which means the material must remain in place to perform its intended function, regardless of height. This is an inspection related issue, one for which the CTC submitted code change S39-06/07 to improve the inspection provisions, including:

- Increased number of sampling locations
- Specific sampling for columns, beams, joists and trusses
- Physical and visual tests for: substrates; thickness; density, bond strength

S39-06/07 was approved and the provisions will be incorporated in the 2009 edition of the IBC.

There is no credible technical evidence or documented experience to indicate that the increased minimum bond strength requirements specified in the subject text and Table improve the long term durability of sprayed fire –resistive materials (SFRM) in high-rise buildings or improve the chances of SFRM to be in place when it is needed (in the event of a fire). The single proven effect of these increased bond provisions is to dramatically increase the SFRM installed cost by up to 250%. SFRM minimum bond strength of 150 psf (Section 1704.12.6), in conjunction with inspections and field tests, specified in Section 1704.12, are adequate to ensure SFRM is in place after completion of the construction phase. Regular inspections and timely repairs are needed to ensure SFRM in-place condition over the life of the building, regardless of the bond strength of SFRM.

A survey of the commercially available SFRM products in terms of their bond strength and density, conducted by the American Iron and Steel Institute (AISI) in 2007 clearly indicates that the provisions in Section 403.2.4 and Table 403.2.4 are specifically calibrated and targeted to ban standard-density SFRM products from the high-rise market – i.e., these provisions create an artificial commercial barrier, but do not address any measurable risks or safety concerns tied to any meaningful bond strength values (in terms of SFRM in-place durability).

The current provisions in Section 403.2.4 and Table 403.2.4 resulted from proposal G68-06/07 (and further slightly modified by proposal G68-07/08), based on misleading technical information and flawed cost impact analysis provided in the proposal and relevant testimonies during the public hearings:

G68-06/07 reason statement suggested "building sway" as a "known" "initiating event" for SFRM dislodgement. Testimony during the public hearings also suggested building vibration as a possible cause for SFRM dislodgement. To date, no evidence has been found to document either of these claims.

G68-06/07 reason statement noted that "The purpose of this proposal is to increase the required adhesions of Spray Applied Fire Resistant Materials (SFRM)", seeking to achieve the improvements called for in Recommendation 6 of NIST WTC Report. Testimonies during the hearings further suggested that proposal G68-06/07 is somehow based on NIST WTC Investigation and its recommendations. In fact, NIST Recommendation 6 reads as follows:

"NIST recommends the development of criteria, test methods, and standards: (1) for the in-service performance of sprayed fire-resistive materials (SFRM, also commonly referred to as fireproofing insulation) used to protect structural components; and (2) to ensure that these materials, as-installed, conform to conditions in tests used to establish the fire resistance rating of components, assemblies, and systems."

There is nothing in Recommendation 6, or in any other part of the NIST WTC Investigation Report, to justify the immediate need to arbitrarily increase the SFRM bond strength. Nothing in the published NIST report suggested that the SFRM bond strength was inadequate for any of the intended purposes. The compiled records actually indicated that WTC towers endured numerous fires prior to 9/11 with minimal or no structural damage. Nothing in the NIST Report suggested that any existing SFRM product with higher bond strength and/or higher density would have performed better, or would have changed the sequence or the outcome of events.

G68-06/07 proposal noted that "Many tall buildings already utilize these higher strength materials". However, in 2006, there was only one high-rise building known to utilize medium-density SFRM throughout the building (the reconstructed WTC 7), and the owner did it for understandable reasons. In fact, the absence of long-term nation-wide experience with the "throughout" application of medium-density and high-density SFRM in high-rise buildings should be a cause for concern – due to the lack of long term data to support their use.

G68-06/07 offered flawed cost impact analysis stating that the associated cost increase will be only marginal. In fact, credible estimates for real projects indicated very significant cost increase for installed medium-density and high-density SFRM. Independent estimates by government agencies (reported in G69-07/08) indicated that minimum bond strength requirement of 430 psf increases the SFRM cost by over 50%, while the requirement of 1000 psf increases SFRM cost by about 170%. Other independent estimates in the 2007 AISI report show similar cost increases: by over 50% for medium-density SFRM, and by over 230% for high-density SFRM. These increases cannot be characterized as "marginal" or "relatively small". The cost impact of Table 403.2.4 provisions needs to be fully considered, and society's fire protection resources need to be effectively allocated in a meaningful way.

Several testimonies during the public hearing exploited the notion of standard-density SFRM dislodgement under its own weight for no apparent reason or due to the lack of bond strength. In fact, SFRM dislodgement are almost always linked to very specific reasons that are irrelevant to bond strength – over the building lifetime, the overwhelming majority of documented dislodgement cases are caused by direct contact/impact removals of SFRM associated with human activities such as construction, demolition, remodeling, testing, structural

inspections, maintenance operations, electrical/mechanical installations, and also, associated with equipment failures, such as water leaks, improper elevator operations, and similar reasons. The information compiled in WTC Investigation Report NCSTAR 1-6A clearly illustrates typical cases, e.g.:

"Section 3.7 with photographs in Figures 3-5 through 3-10 states that, "There were many instances where SFRM had obviously been dislodged in the process of installing utilities. In some cases hardware was attached directly to the lower chords and SFRM was dislodged. These damaged areas should have been repaired when the various trades had completed their work". Section 3.7 also states that "the overall views of the trusses showed that regions of missing insulation were minor in extent when compared with the total area of applied SFRM".

Figure A-36 points to SFRM damage on trusses due to "tenant construction work" or "works over the years in the ceiling" by the Port Authority.

Figure A-37 points to SFRM damage on trusses "during demolition after tenants move out" as "ductwork, partitions, hangers, etc. are removed".

Figure A-38 points to SFRM "damaged by installation of new construction".

Figure A-39 points to SFRM "disturbed by remodeling operations"

Figure A-49 points to SFRM re-occurring "extensive damage" in the elevator shafts caused by "the slack condition in compensating cables, especially on shuttle cars, causing a chafing condition against finished spray-on fireproofing on structural steel within hoistways".

Figure A-56 and A-57 (excerpts from LERA reports dated 1993 and 1995) point to SFRM damage in elevator shafts due to "rubbing of the hoist cable against the face of column", or "due to testing purposes". In one instance, the LERA reports also point to the installation of bracket as the cause for missing fireproofing.

The entire compilation of maintenance and inspections documents in the published reports of NIST WTC Investigation does not contain a single case of SFRM dislodgement linked to the lack of SFRM bond strength, despite the fact that all structural steel and steel joists in WTC towers was primed (SFRM application over primed and/or painted steel is known to reduce bond strength).

Similar causes of SFRM dislodgement, irrelevant to bond strength, were reported in the 2007 AISI report of building architects and construction contractors to evaluate their use of SFRM and their experiences with it. This survey is more relevant to the initial construction and/or major renovation phases in buildings' lifetime, and identifies intentional removal of SFRM by construction trades as the primary cause of SFRM dislodgement.

In summary, the two leading causes of SFRM dislodgement during construction and maintenance of buildings are:

Primary cause - intentional removal of SFRM associated with human activities, such as construction, renovation, electrical/mechanical installations, testing, inspections, maintenance operations, etc. This type of SFRM dislodgement is completely irrelevant to SFRM bond strength. Only inspections and timely repairs could address intentional removal of SFRM.

Secondary cause - unintentional/accidental removal of SFRM associated with human activities and equipment failures. While the use of higher-density SFRM products could slightly reduce dislodgements associated with some accidental abuses, such as light abrasive actions and light impacts, existing medium-density and high-density SFRM products are still by far incapable to substantially reduce dislodgements or address all common causes of accidental removals (e.g. water leaks, repeated and stronger abrasive actions and impacts, etc). Concealment of SFRM-protected steel elements in protective envelopes (e.g. gypsum board) or behind suspended ceilings is the most effective way in avoiding accidental dislodgement due to most accidental impacts and abrasions. Again, only inspections and timely repairs could adequately address unintentional/accidental removal of SFRM.

Analysis of Proposed Change G68-06/07 to the 2006 Edition of IBC", by Farid Alfawakhiri, Ph.D., American Iron and Steel Institute, January 2007.

**Bibliography:** NIST NCSTAR 1, "Federal Building and Fire Safety Investigation of the World Trade Center Disaster: Final Report on the Collapse of the World Trade Center Towers", National Institute of Standards and Technology, September 2005 ( available at <http://wtc.nist.gov/> ).

Carino et al, NIST NCSTAR 1- 6A, "Federal Building and Fire Safety Investigation of the World Trade Center Disaster: Passive Fire Protection", National Institute of Standards and Technology, September 2005 (available at <http://wtc.nist.gov/> ).

**Perry** - In their approval of the new SFRM requirements during the 2006/2007 cycle, the Fire Safety Committee specifically noted that neither technical substantiation nor cost data had been provided to the committee. Last cycle (2007/2008), cost information was provided to the committee, clearly indicating that costs are far beyond the moderate 'incremental' increases alluded to by proponents last cycle. The Fire Safety Committee voted to maintain the increased SFRM bond strength provisions, "based on a lack of technical substantiation to take them out".

**This committee is on record that they had no technical substantiation when they added this requirement to the code, yet they now will not remove the provisions unless they receive technical substantiation?**

**There is no evidence that arbitrarily tripling (from 150 psf to 430 psf) the bond strength of SFRM will provide any additional degree of safety in 75' tall buildings, and no evidence that increasing the bond strength by a factor of 7 (from 150 psf to 1000 psf) will provide any additional degree of safety in buildings >420' in height.**

**The extent of the cost impacts calculated by both GSA and the steel industry make it clear that the first response to this provision, if it remains, will be to look for alternatives. There has been no explanation from those touting the need for increasing SFRM bond strength for how a gypsum-board encased column (which can achieve the required hourly ratings) would compare to columns with any of the various types of SFRM.**

**Cost Impact:** Heilstedt - The code change proposal will not increase the cost of construction.

Perry - The code change proposal will not increase the cost of construction. This change will decrease the cost of construction.

ICCFILENAME: HEILSTEDT-G6-403.2.4.doc

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee's disapproval is based on the lack of substantiating data to show that bond strength failure is not an issue for SFRM. Further, this action provides for consistency with the committees action on G42-09/10.

**Assembly Action:**

**None**



**Individual Consideration Agenda**

This item is on the agenda for individual consideration because a public comment was submitted.

*Public Comment:*

**Lawrence G. Perry, AIA, representing Building Owners and Managers Association (BOMA) International, requests Approval as Submitted.**

**Commenter's Reason:** This code change should be approved for the following reasons:

1. This significant, costly change was made without any evidence that it will increase either building performance or life safety, with a misleading industry statement about the 'minimal' cost impact.
2. The CTC rationale to the original code change provides a lengthy explanation of the history of this issue, and the lack of technical substantiation.

Final Action:                    AS                    AM                    AMPC\_\_\_\_                    D

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**G43-09/10**

**403.3.3 (New), Table 508.2.5**

**Proposed Change as Submitted**

**Proponent:** Wayne R. Jewell, CBO, City of Southfield, representing self

**1. Add new text as follows:**

**403.3.3 Fire Pump Room.** Fire pumps shall be located in rooms protected in accordance with Section 913.2.1.

**2. Revise Table as follows:**

**TABLE 508.2.5  
INCIDENTAL ACCESSORY OCCUPANCIES**

<b>ROOM OR AREA</b>	<b>SEPARATION AND/OR PROTECTION</b>
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic fire-extinguishing system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic fire-extinguishing system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen cut-off rooms, not classified as Group H	1-hour in Group B, F, M, S and U occupancies. 2-hour in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic fire-extinguishing system
Laboratories and vocational shops, not classified as Group H, located in Group E or I-2 occupancies	1 hour or provide automatic fire-extinguishing system
Laundry rooms over 100 square feet	1 hour or provide automatic fire-extinguishing system
Group I-3 cells equipped with padded surfaces	1 hour
Group I-2 waste and linen collection rooms	1 hour
Waste and linen collection rooms over 100 square feet	1 hour or provide automatic fire-extinguishing system
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons or a lithium-ion capacity of 1,000 pound used for facility standby power, emergency power or uninterrupted power supplies	1-hour in Group B, F, M, S and U occupancies. 2-hour in Group A, E, I and R occupancies
<del>Rooms containing fire pumps in nonhigh-rise buildings</del>	<del>2 hours; or 1 hour and provide automatic sprinkler system throughout the building</del>
<del>Rooms containing fire pumps in high-rise buildings</del>	<del>2 hours</del>

For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

**Reason:** Adding Section 403.3.3 provides a proper link to the protection requirements found in Section 913.2.1 added during the last cycle for a fire pump room in a high-rise building. Revising Table 508.2.5 in striking the two lines removes the confusion that could occur since all options under Section 508 are not required to use the provisions of the table, yet fire pumps can occur in the multiple types of buildings permitted under Section 508 and these protection provisions are required under all instances.

**Cost Impact:** The code change proposal will not increase the cost of construction.

ICCFILENAME: JEWELL-G1-403.3.3 NEW

## Public Hearing Results

**Committee Action:**

**Approval as Submitted**

**Committee Reason:** The change relocates the requirements to the appropriate location in the code and removes redundant language.

**Assembly Action:**

**None**

## Individual Consideration Agenda

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Jason Thompson, National Concrete Masonry Association (NCMA), representing Masonry Alliance for Codes and Standards (MACS), requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**403.3.3 Fire pump room.** Fire pumps shall be located in rooms protected in accordance with Section 913.2.1.

**TABLE 508.2.5  
INCIDENTAL ACCESSORY OCCUPANCIES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic fire-extinguishing system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic fire-extinguishing system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen cut-off rooms, not classified as Group H	1-hour in Group B, F, M, S, and U occupancies. 2-hour in Group A, E, I and R occupancies
Incinerator rooms	2 hours and automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic fire-extinguishing system
Laboratories and vocational shops, not classified as Group H, located in Group E or I-2 occupancies	1 hour or provide automatic fire-extinguishing system
Laundry rooms over 100 square feet	1 hour or provide automatic fire-extinguishing system
Group I-3 cells equipped with padded rooms	1 hour
Group I-2 waste and linen collection rooms	1 hour
Waste and linen collection rooms over 100 square feet	1 hour or provide automatic fire-extinguishing system
Stationary storage battery system having a liquid electrolyte capacity of more than 50 gallons or a lithium-ion capacity of 1,000 pound used for facility standby power, emergency power or uninterrupted power supplies	1-hour in Group B, F, M, S, and U occupancies. 2-hour in Group A, E, I and R occupancies
<u>Rooms containing fire pumps in buildings other than high-rise buildings</u>	<u>2 hours; or 1 hour and provide automatic sprinkler system throughout the building</u>
<u>Rooms containing fire pumps in high-rise buildings</u>	<u>2 hours</u>

For SI: 1 square foot = 0.0929m<sup>2</sup>, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

**Commenter's Reason:** We agree with the proponent's addition of the new Section 403.3.3 Fire Pump Room which we believe will make the code more user friendly and provide for better enforcement of the requirements for fire pump rooms which are covered by Section 913.2.1. However, we do not agree with the proponent's deletion of the two entries at the end of Table 508.2.5 Incidental Accessory Occupancies addressing fire pumps in both high-rise and nonhigh-rise buildings.

The proponent indicates in his Reason statement that the reason for deleting the two lines in Table 508.2.5 is to remove the confusion that could occur since all options under Section 508 are not required to use the provisions of the table. We disagree with the proponent's statement in

that regard. In our opinion, it is very clear that Section 508.2.5 Separation of Incidental Accessory Occupancies which references Table 508.2.5 Incidental Accessory Occupancies is applicable for all buildings under all cases for buildings of mixed use and occupancy, whether they use the nonseparated occupancy option in Section 508.3 or the separated occupancies option in Section 508.4. Specific incidental accessory occupancies listed in Table 508.2.5 are required to be separated and/or protected as specified regardless of the main occupancy or the other occupancies in the building. Thus, we have reinstated the two lines and made an editorial correction to the one entry by deleting the term "nonhigh-rise buildings" and substituting the term "buildings other than high-rise buildings" to be consistent with the terminology in Section 913.2.1.

Again, we believe these two lines in Table 508.2.5 make the code more user friendly and enforceable by providing specific guidance to the protection and/or separation of fire pump rooms in any buildings where they are installed which is consistent with the requirements in Section 913.2.1. Therefore, we believe the Class A voting members should approve this Public Comment for approval as modified of Code Change G43-09/10.

Final Action: AS AM AMPC\_\_\_\_\_ D

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## **G44-09/10, Part I**

### **403.4.5, 403.4.8.1, 708.14.1, Chapter 35**

#### **Proposed Change as Submitted**

**Proponent:** Gary Lewis, Chair, ICC Ad Hoc Committee on Terrorism-Resistant Buildings

#### **Part I - IBC**

##### **1. Add new text as follows:**

**403.4.5 Video surveillance system.** A video surveillance system installed in accordance with NFPA 731, shall be installed in each elevator lobby provided in accordance with Section 708.14.1 and at every fifth floor of each required stairway and connected to an approved, constantly attended station. The surveillance system shall not be required to provide positive visual recognition of individual persons.

*(Renumber subsequent sections.)*

##### **2. Revise as follows**

**403.4.8.1 Emergency power loads.** The following are classified as emergency power loads:

1. Exit signs and *means of egress* illumination required by **Chapter 10**;
2. Elevator car lighting;
3. Emergency voice/alarm communications systems;
4. Automatic fire detection systems;
5. **Video surveillance systems**;
- ~~5-6.~~ Fire alarm systems; and
- ~~6-7.~~ Electrically powered fire pumps.

**708.14.1 Elevator lobby.** An enclosed elevator lobby shall be provided at each floor where an elevator shaft enclosure connects more than three stories. The lobby enclosure shall separate the elevator shaft enclosure doors from each floor by fire partitions. In addition to the requirements of Section 709 for fire partitions, doors protecting openings in the elevator lobby enclosure walls shall also comply with Section 715.4.3 as required for corridor walls and penetrations of the elevator lobby enclosure by ducts and air transfer openings shall be protected as required for corridors in accordance with Section 716.5.4.1. Elevator lobbies shall have at least one means of egress complying with Chapter 10 and other provisions within this code. In high-rise buildings the elevator lobby shall be provided with a video surveillance system installed in accordance with NFPA 731.

#### **Exceptions:**

1. through 7. *(No change to exceptions)*

##### **3. Add new standard to Chapter 35 as follows:**

#### **NFPA**

731-2008 The Standard for the Installation of Electronic Premises Security Systems  
2010 ICC FINAL ACTION AGENDA

**Reason:** This proposal adds new requirements to the code for high-rise buildings. The purpose of this change is to increase the ability of firefighters, and other emergency responders, to develop a clear picture of conditions throughout the building which will enable them to better manage evacuation, fire suppression and other emergency response activities. The purpose is also to enhance the safety of emergency responders by enabling them to maintain better situational awareness.

The National Institute of Standards and Technology's (NIST) report on the World Trade Center (WTC) tragedy amply documented the tactical and informational difficulties experienced by emergency responders and occupants during the WTC event. Similar difficulties occur in much smaller events and they place lives at risk.

The Code already requires many systems which enhance emergency responder and occupant awareness. Their use can be improved and they can be further supplemented. Recommendation 23 of the WTC Report specifically calls for:

The establishment and implementation of detailed procedures and methods for gathering, processing, and delivering critical information through integration of relevant voice, video, graphical and written data to enhance situational awareness of all emergency responders.

This proposal seeks to improve responder awareness of conditions in the building to assist in management of an incident and improve the existing fire command center to enhance its value. Awareness is improved by requiring control center monitoring of video surveillance in stairway shafts and elevator lobbies. With the introduction of dedicated fire service elevators and occupant egress elevators into the IBC, the necessity of monitoring the status of the elevator lobbies becomes even more significant.

There will be those opponents that will claim that the amount of information generated by the video monitoring in a large building will cause "information overload". They will question the ability of the staff in the fire command center to observe all of the required video feeds at once. In response to this, please be aware that there is commercial off-the-shelf "intelligent software" that is available such that the staff of the fire command center need not observe all of these feeds; the software is "event driven" and will select information that is pertinent and display just this information. This software is currently available off-the-shelf from companies such as Johnson Control and Honeywell. The Port Authority of New York and New Jersey is currently installing a system to monitor the perimeter of the Newark airport by the use of ONE video screen. Clearly the perimeter of this airport is substantially larger than the portions of the building that are required to be monitored as a result of this code change. By requiring these video feeds, the situational awareness of the staff in the fire command center is substantially increased. While researching the availability of this software, we were informed by Mr. Alan Reiss the building manager of the World Trade Center, that he was unaware of the magnitude of the event on September 11, 2001. In fact, he commented that the people at home watching the television had a better situational awareness than he did because of the lack of information available at the fire command center. This has to be changed and this proposal will change it.

Bottom line, the video monitoring system will provide fire and emergency responders' immediate information on the life safety condition and status of the areas noted. Having such ability will exceed any expense incurred for the installation of the video monitoring system - the expense is minor to the benefit of the system. (Note: Regardless of this requirement, electronic data access systems can be installed for a reasonable cost in most buildings today). A video monitoring system will provide fire and emergency responders with accurate and up to date information on the condition and activities of the given areas for emergency responders to make tactical decisions under emergency conditions. With that said, the TRB committee encourages consideration and support for this proposal.

**Bibliography:** National Institute of Standards & Technology, Final Report of the National Construction safety Team on the Collapses of the World Trade Center Towers. United States Government Printing Office: Washington, D.C. September 2005.

#### Referenced Standards

National Fire Protection Association Standard 731, the Standard for the Installation of Electronic Premises Security Systems

**Cost Impact:** The code change proposal will not increase the cost of construction. These proposed amendments will increase the cost of construction, but, the increase will be modest when viewed as a percentage of total construction costs.

**Analysis:** Review of the proposed new standard indicated that, in the opinion of ICC staff, the standard did comply with ICC standards criteria.

ICCFILENAME: LEWIS-G3-403.12.1.doc

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## **Public Hearing Results**

### **Part I - IBC**

#### **Committee Action:**

**Disapproved**

**Committee Reason:** The committee disapproved the proposal for a variety of reasons. The application to all high-rise buildings regardless of height was judged excessive. Providing surveillance every 5 floors did not provide very much situational awareness as intended by the proposal. Because there were so many exceptions for elevator lobbies, the effectiveness in those areas was uncertain. The occupant evacuation elevator requirements would provide communications in elevator lobbies, this system should be connected to the proposed system. There would be costs to installing such systems, especially as it relates to providing emergency power connections. The proponent should have provided more detailed cost impact information. Reference to the standard, while appropriate, was clear that the facial recognition was not required under the IBC provisions, but not for the reference contained in the IFC.

#### **Assembly Action:**

**None**

## **Individual Consideration Agenda**

This item is on the agenda for individual consideration because public comments were submitted.

### *Public Comment 1:*

**Gary Lewis, City of Summit, representing ICC Ad Hoc Committee on Terrorism Resistant Buildings, requests Approval as Modified by this Public Comment.**

Replace proposal as follows:

**403.4.5 Video surveillance systems.** In buildings greater than 420 feet in height, a video surveillance system installed in accordance with NFPA 731 shall be installed. Video cameras shall be provided at every fifth floor in each required stairwell. The surveillance system shall not be required to provide positive visual recognition of individual persons.

*(Renumber subsequent sections)*

**403.4.8.1 Emergency power loads.** The following are classified as emergency power loads:

1. Exit signs and *means of egress* illumination required by Chapter 10;
2. Elevator car lighting;
3. Emergency voice/alarm communications systems;
4. Automatic fire detection systems;
5. Video surveillance systems required by this code;
- ~~6.~~ 6. Fire alarm systems;
- ~~6.~~ 7. Electrically powered fire pumps.

### **SECTION 3008 OCCUPANT EVACUATION ELEVATORS**

**3008.13 Two-way communication and video surveillance system.** A two-way communication system and a video surveillance system shall be provided in each occupant elevator lobby for the purpose of initiating communication with the fire command center or an alternative location *approved* by the fire department.

**3008.13.1 Design and installation.** The two-way communication system shall include audible and visible signals and shall be designed and installed in accordance with the requirements of ICC 117.1.

**3008.13.2 Instructions.** Instructions for the use of the two-way communication system along with the location of the station shall be permanently located adjacent to each station. Signage shall comply with the ICC A117.1 requirements for visual characters.

**3008.13.3 Video surveillance.** Each elevator lobby shall be provided with a video surveillance system installed in accordance with NFPA 731. The surveillance system shall not be required to provide positive visual recognition of individual persons.

#### **NFPA**

731-2008 The Standard for the Installation of Electronic Premises Security Systems

**Commenter's Reason:** This proposal was disapproved by the Committee in Baltimore by a vote of 6-5. The Ad Hoc Committee continues to believe that emergency responders and incident commanders require enhanced situational awareness to properly manage evacuation, suppression and related emergency response activities.

Recommendation #23 of the National Institute of Standards and Technology (NIST) Final Report of the World Trade Center Disaster specifically calls for the "establishment and implementation of detailed procedures and methods for gathering, processing and delivering critical information through integration of relevant voice, video, graphical and written data to enhance the situational awareness of all emergency responders."

The disapproval from the Committee was based primarily on several issues raised at the hearing, and not an objection to the concept. The Ad Hoc Committee has revised this proposal twice in response to guidance from the General Committee and objectors, and has now further modified the language to meet all technical objections.

In response to comments by the Code Technology Committee, BOMA and a General Committee member, we have reduced the scope of the provision for stairway monitoring exclusively to apply to 'super' high-rise buildings in excess of 420' in height instead of all high-rise buildings pursuant to the Committee's stated reasons. The language of this modification also addresses the Committee's stated concern about elevator lobby exceptions.

In response to the cost issue, this public comment reduces the number of devices dramatically, by deleting the provision to provide surveillance at all elevator lobbies.....surveillance would only be mandated at every fifth floor in required stairwells and in occupant egress elevator lobbies, if provided. Remember, occupant egress elevators remain optional in the IBC. If utilized, the Ad Hoc Committee is convinced that incident commanders need real-time surveillance to understand whether building occupants are utilizing or waiting for elevator service. If such elevators are not provided, the cameras would not be required in those locations.

In response to earlier CTC objections, we have removed the requirement that the video signal be sent to a 'constantly attended location', in deference to those buildings that may not have 24-hour manned security. Instead, the provision would mandate the *capability* for monitoring all required video surveillance in the fire command center.

The issue of cost was raised some estimates indicate an overall 'system' cost at about \$3,000 per device. That figure represents all associated costs, including the hardware, software, wiring, labor, general conditions, etc. While the Ad Hoc Committee believes this cost to be inflated. A 45-story building without egress elevators would require 27 devices under this proposal, with an attendant maximum cost of \$81,000. By comparison,

that equates to less than \$0.10 per square foot on a typical 20,000 square foot per floor building, or less than one-tenth of one per-cent of the project construction cost.

In summary, NIST and the ICC's fire service members have attested that video monitoring of real-time building conditions are essential to timely and effective command decisions during an incident. The Ad Hoc Committee has refined this proposal and has focused the scope sufficiently such that all reasonable concerns have been met and the Committee petitions the membership for approval as modified herein.

Bibliography: National Institute of Standards and Technology, Final Report of the National Construction Safety Team on the Collapse of the World Trade Center Towers, United States Government Printing Office: Washington, D.C., September, 2005. Also, see [wtc.nist.gov](http://wtc.nist.gov).

Referenced Standards:

National Fire Protection Association Standard 731, Standard for the Installation of Electronic Premises Security Systems

**Cost Impact:** The proposed amendments represent a minor increase in the cost of construction for certain iconic structures.

**TRB Funding Disclosure:** Since the inception of the Ad Hoc-TRB Committee, the ICC has fully funded the travel expenses of the Committee Chair to present the code proposals developed by the Ad Hoc Committee. Given the current economic condition, the ICC is not able to fully fund travel expenses by the Committee Chair to present the TRB proposals to you. The National Institute of Standards and Technology, a federal agency in the U.S. Department of Commerce, through a grant to the National Institute of Building Sciences, has agreed to fund the TRB Chair's travel expense *deficit*...whatever amount ICC does *not* fund...with full disclosure to the ICC. NIST has not ever, nor would, play *any* role in the deliberations of the TRB Committee in our development of code change proposals. This is entirely consistent with ICC CP#28.

## Public Comment 2:

### Gary Lewis, City of Summit, representing ICC Ad Hoc Committee on Terrorism Resistant Buildings, requests Approval as Modified by this Public Comment.

#### Replace proposal as follows:

**3007.6 Elevator system monitoring.** The fire service access elevator shall be continuously monitored at the fire command center by a standard emergency service interface system meeting the requirements of NFPA 72. Each fire service access elevator lobby shall be provided with a video surveillance system installed in accordance with NFPA 731. The surveillance system shall not be required to provide positive visual recognition of individual persons.

#### NFPA

731-2008 The Standard for the Installation of Electronic Premises Security Systems

**Commenter's Reason:** Concerns expressed in Baltimore regarding the provisions for video surveillance included thresholds, cost and some confusion regarding the original proposed reference to elevator lobbies in Chapter 7, which contains certain exceptions. This public comment seeks to address all of those stated concerns and reasons for disapproval. The IBC General Committee issued a split 6-5 decision in favor of disapproval in Baltimore.

Recommendation #23 of the National Institute of Standards and Technology (NIST) Final Report of the World Trade Center Disaster specifically calls for the "establishment and implementation of detailed procedures and methods for gathering, processing and delivering critical information through integration of relevant voice, video, graphical and written data to enhance the situational awareness of all emergency responders."

The original G44-09/10 would have required video surveillance in *all* elevator lobbies of *all* high-rise buildings, which the Committee found excessive. The ICC Ad Hoc Committee on Terrorism Resistant Buildings reconsidered the matter and further refined the scope of lobby surveillance to the two critical needs: 1] occupant evacuation elevators if provided (see G44-09/10 TRB Public Comment #1), and 2] fire service access elevators.

Occupant evacuation elevators are an option, but the 2009 IBC now includes a first-ever provision that 'hardened' fire service access elevators be provided in all buildings greater than 120' in height. These elevators can and will be used for the transport of emergency responders and potentially building occupants in cases of emergency. Requiring video monitoring of the lobby spaces for such elevators will allow incident commanders to transmit real-time information about building conditions and occupant status to ascending responders, and will also serve as redundant protection to those responders in addition to the required communication systems.

Reference to the elevator lobby in Section 3007.6 as opposed to lobbies generally in Chapter 7 eliminates any application confusion from the original proposal.

Bibliography: National Institute of Standards and Technology, *Final Report of the National Construction Safety Team on the Collapse of the World Trade Center Towers*, United States Government Printing Office: Washington, D.C., September, 2005. Also, see [wtc.nist.gov](http://wtc.nist.gov).

Referenced Standards:

National Fire Protection Association Standard 731, *Standard for the Installation of Electronic Premises Security Systems*

**Cost Impact:** This proposal does represent a minor increase in the cost of construction, but a portion of the cost is already absorbed in currently-required provision for continuous emergency system interface per NFPA 72, the balance representing less than two-tenths of one per cent of the project budget, a small price to pay for enhanced emergency responder and occupant life safety.

**TRB Funding Disclosure:** Since the inception of the Ad Hoc-TRB Committee, the ICC has fully funded the travel expenses of the Committee Chair to present the code proposals developed by the Ad Hoc Committee. Given the current economic condition, the ICC is not able to fully fund travel expenses by the Committee Chair to present the TRB proposals to you. The National Institute of Standards and Technology, a federal agency in the U.S. Department of Commerce, through a grant to the National Institute of Building Sciences, has agreed to fund the TRB Chair's travel expense *deficit*...whatever amount ICC does *not* fund...with full disclosure to the ICC. NIST has not ever, nor would, play *any* role in the deliberations of the TRB Committee in our development of code change proposals. This is entirely consistent with ICC CP#28.

Final Action:            AS                    AM                    AMPC\_\_\_\_\_            D

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## G44-09/10 Part II

### IFC 508.1.5 (IBC [F] 911.1.5)

#### Proposed Change as Submitted

**Proponent:** Gary Lewis, Chair, representing ICC Ad Hoc Committee on Terrorism-Resistant Buildings

**Revise as follows:**

**508.1.5 (IBC [F] 911.1.5) Required features.** The fire-command center shall comply with NFPA 72 and shall contain the following features:

1. The emergency voice/alarm communication system control unit.
2. The fire department communications system.
3. Fire detection and alarm system annunciator.
4. Annunciator unit visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air handling systems.
6. The fire-fighter's control panel required by Section 909.16 for smoke control systems installed in the building.
7. Controls for unlocking stairway doors simultaneously.
8. Sprinkler valve and water-flow detector display panels.
9. Emergency and standby power status indicators.
10. A telephone for fire department use with controlled access to the public telephone system.
11. Fire pump status indicators.
12. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, firefighting equipment and fire department access and the location of fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions.
13. Work table.
14. Generator supervision devices, manual start and transfer features.
15. Public address system, where specifically required by other sections of this code.
16. Elevator fire recall switch in accordance with ASME A17.1.
17. Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.
18. Video monitoring for video surveillance system required by this code.

**Reason:** This proposal adds new requirements to the code for high-rise buildings. The purpose of this change is to increase the ability of firefighters, and other emergency responders, to develop a clear picture of conditions throughout the building which will enable them to better manage evacuation, fire suppression and other emergency response activities. The purpose is also to enhance the safety of emergency responders by enabling them to maintain better situational awareness.

The National Institute of Standards and Technology's (NIST) report on the World Trade Center (WTC) tragedy amply documented the tactical and informational difficulties experienced by emergency responders and occupants during the WTC event. Similar difficulties occur in much smaller events and they place lives at risk.

The Code already requires many systems which enhance emergency responder and occupant awareness. Their use can be improved and they can be further supplemented. Recommendation 23 of the WTC Report specifically calls for:

The establishment and implementation of detailed procedures and methods for gathering, processing, and delivering critical information through integration of relevant voice, video, graphical and written data to enhance situational awareness of all emergency responders.

This proposal seeks to improve responder awareness of conditions in the building to assist in management of an incident and improve the existing fire command center to enhance its value. Awareness is improved by requiring control center monitoring of video surveillance in stairway shafts and elevator lobbies. With the introduction of dedicated fire service elevators and occupant egress elevators into the IBC, the necessity of monitoring the status of the elevator lobbies becomes even more significant.

There will be those opponents that will claim that the amount of information generated by the video monitoring in a large building will cause "information overload". They will question the ability of the staff in the fire command center to observe all of the required video feeds at once. In response to this, please be aware that there is commercial off-the-shelf "intelligent software" that is available such that the staff of the fire command center need not observe all of these feeds; the software is "event driven" and will select information that is pertinent and display just this information. This software is currently available off-the-shelf from companies such as Johnson Control and Honeywell. The Port Authority of New York and New Jersey is currently installing a system to monitor the perimeter of the Newark airport by the use of *ONE* video screen. Clearly the perimeter of this airport is substantially larger than the portions of the building that are required to be monitored as a result of this code change. By requiring these video feeds, the situational awareness of the staff in the fire command center is substantially increased. While researching the availability of this software, we were informed by Mr. Alan Reiss the building manager of the World Trade Center, that he was unaware of the magnitude of the event on September 11, 2001. In fact, he commented that the people at home watching the television had a better situational awareness than he did because of the lack of information available at the fire command center. This has to be changed and this proposal will change it.

Bottom line, the video monitoring system will provide fire and emergency responders' immediate information on the life safety condition and status of the areas noted. Having such ability will exceed any expense incurred for the installation of the video monitoring system - the expense is minor to the benefit of the system. (Note: Regardless of this requirement, electronic data access systems can be installed for a reasonable cost in most buildings today). A video monitoring system will provide fire and emergency responders with accurate and up to date information on the

condition and activities of the given areas for emergency responders to make tactical decisions under emergency conditions. With that said, the TRB committee encourages consideration and support for this proposal.

Bibliography: National Institute of Standards & Technology, Final Report of the National Construction safety Team on the Collapses of the World Trade Center Towers. United States Government Printing Office: Washington, D.C. September 2005.

Referenced Standards

National Fire Protection Association Standard 731, the Standard for the Installation of Electronic Premises Security Systems

**Cost Impact:** The code change proposal will not increase the cost of construction. These proposed amendments will increase the cost of construction, but, the increase will be modest when viewed as a percentage of total construction costs.

**Analysis:** A review of the standard proposed for inclusion in the code, NFPA 731, for compliance with ICC criteria for referenced standards given in Section 3.6 of Council Policy #CP 28 will be posted on the ICC website on or before September 24, 2009.

ICCFILENAME: LEWIS-G3-403.12.1.doc

**Public Hearing Results**

**IFC – Part II**

**Committee Action:**

**Disapproved**

**Committee Reason:** Consistent with the action taken to disapprove Part I.

**Assembly Action:**

**None**

**Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Gary Lewis, City of Summit, representing ICC Ad Hoc Committee on Terrorism Resistant Buildings, requests Approval as Modified by this Public Comment.**

**Modify as follows:**

**508.1.5 (IBC [F] 911.1.5) Required features.** The fire command center shall comply with NFPA 72 and shall contain the following features:

1. The emergency voice/alarm communications system control unit.
2. The fire department communications system.
3. Fire detection and alarm system annunciator.
4. Annunciator unit visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air handling systems.
6. The fire-fighters control panel required by Section 909.16 for smoke control systems installed in the building.
7. Controls for unlocking stairway doors simultaneously.
8. Sprinkler valve and water-flow detector display panels.
9. Emergency and standby power status indicators.
10. A telephone for fire department use with controlled access to the public telephone system.
11. Fire pump status indicators.
12. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, firefighting equipment and fire department access and the location of fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions.
13. Work table
14. Generator supervision devices, manual start and transfer features.
15. Public address system, where specifically required by other sections of this code.
16. Elevator fire recall switch in accordance with ASME A17.1.
17. Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.
18. Capability for video monitoring for video surveillance system required by this code.

**Commenter's Reason:** See Commenter's reason for Part I, Public Comment 1

Final Action: AS AM AMPC\_\_\_\_ D



**G46-09/10**  
**403.5.2, 3008.4**

**Proposed Change as Submitted**

**Proponent:** Rick Thornberry, PE, The Code Consortium, Inc., representing: California Fire Safety Advisory Council (CFSAC); Bill Ziegert, representing Smoke Guard, Inc.

**1. Revise as follows:**

**403.5.2 Additional exit stairway.** For buildings other than Group R-2 that are more than 420 feet (128 000 mm) in building height, one additional exit stairway meeting the requirements of Sections 1009 and 1022 shall be provided in addition to the minimum number of exits required by Section 1021.1. The total width of any combination of remaining exit stairways with one exit stairway removed shall not be less than the total width required by Section 1005.1. Scissor stairs shall not be considered the additional exit stairway required by this section.

~~**Exception:** An additional exit stairway shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.~~

**2. Delete without substitution:**

~~**3008.4 Additional exit stairway.** Where an additional means of egress is required in accordance with Section 403.5.2, an additional exit stairway shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with this section.~~

**Reason:**

**Thornberry:** We are proposing to delete the Exception to Section 403.5.2 as well as Section 3008.4 which allow the use of occupant evacuation elevators in lieu of the additional exit stairway where required by Section 403.5.2 for super high-rise buildings (buildings greater than 420 ft in height). We believe this technology is too new and unproven to allow it to substitute for a required means of egress. This position is also consistent with Section 1003.7 Elevators, Escalators and Moving Walks which prohibits elevators from being used as a component of a required means of egress. Until such time as occupant evacuation elevators (which are allowed to be used on a voluntary basis without reducing the required means of egress) have proven to be safe, reliable, and effective, this exception should be deleted from the code.

**Ziegert:** When the concept of Occupant Evacuation Elevators was proposed during the Palm Springs hearings in 2008, while many committee members were in favor of such a concept, the change was Disapproved primarily because it sought a tradeoff of reducing exit stair capacity (width). The proponent brought this change back to the Minneapolis Final Action hearings with substantial modifications and replaced the reduction in exit stair width with this alternate tradeoff to reduce the third stair in High Rise buildings over 420 feet (a different form of tradeoff but still a reduction in exit capacity). Justification for this tradeoff of exit capacity was never sufficiently provided, particularly when one recognizes that the elevator occupant evacuation system will only be operational until the Fire Service arrives (typically in 10 minutes or less from the first alarm). At this time Phase 1 Elevator Recall will normally be implemented which will immediately terminate the use of elevators for occupant evacuation. Following that, occupants needing to use stairs for evacuation in these very tall buildings would be limited to only the two stair systems, rather than the three stair systems the code currently mandates.

**Cost Impact:** The code change proposal will increase the cost of construction.

ICCFILENAME: THORNBERRY-G6-403.5.2

**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The purpose of the third stairway is to allow for the fire service to take one stairway out of service for fire department activities. The third stairway is in excess to the required means of egress. Therefore, allowing for the option of occupant evacuation elevators in place of the third stairway will not reduce the required means of egress. The occupant evacuation elevator is future technology that is supported by NIST and the World Trade Center report. The tradeoff is an incentive to get effective technology into high rise buildings that will significantly reduce the time needed for evacuation of high rise buildings. This is especially important when a full building evacuation is deemed necessary. It is a significant improvement for persons with disability to allow for self-evacuation with the general population as well as to allow for them to evacuate with their mobility devices.

**Assembly Action:**

**None**

## **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

### *Public Comment:*

**Rick Thornberry, PE, The Code Consortium, Inc., representing California Fire Safety Advisory Council (CFSAC), requests Approval as Submitted.**

**Commenter's Reason:** We believe that the IBC Means of Egress Code Development Committee recommendation for disapproval of this code change proposal should be overturned and the code change voted for approval. A two-thirds majority vote will be necessary to achieve an approval recommendation by the Class A voting members so it is very important that all Class A voting members carefully listen to the arguments and consider the importance of this very significant code change.

The main reason the Committee recommended disapproval was on the basis of their Committee Statement that said: "Allowing for the option of occupant evacuation elevators in place of the third stairway will not reduce the required means of egress." However, the purpose of the required third stairway in these super high-rise buildings (greater than 420 feet in height) is to assure that the minimum required exit capacity will be available in the building once the fire department arrives and takes over one of the three exit stairways for their use in gaining access to the fire floor and performing their firefighting and search and rescue operations. Thus, the code presumes that the minimum required capacity for exiting will still be provided in the building. However, if the occupant evacuation elevators are allowed to substitute for the third required exit stairway, then once the fire department arrives and takes over one of the two remaining stairways, 50% of the exit capacity will be lost since the required exit width will be reduced because of the actions of the fire department. The assumption being made by the Committee is that the occupant evacuation elevators will make up the difference due to the loss of one of the two stairways being taken over by the fire department. But are they reliable enough at this time to allow such a trade-off?

It should be noted that this is a new technology to the United States which has yet to be proven. In fact, the criteria for occupant evacuation elevators are still being developed by the ASME Committee responsible for developing the elevator requirements. It should also be noted that IBC Section 3008.3 Operation states that the occupant evacuation elevators can only be used in the normal elevator operating mode prior to Phase I Emergency Recall Operation. So it only takes one smoke detector located in any elevator lobby to terminate the elevator use when that detector is activated and automatically recalls all elevators served by that lobby. Furthermore, once the fire department arrives, they will normally recall all elevators under their Phase I Manual Recall Operation. So there will be very little time available for the occupant evacuation elevators to be utilized in the early stages of a fire emergency.

Another concern we have with the reliability of these elevator systems is in regard to potential water damage which could cause malfunctioning operations of the elevators. IBC Section 3008.10 Water Protection simply requires an "approved method" to prevent automatic sprinkler system water from infiltrating into the hoistway enclosure. An approved method is specified since there is no simple resolution to this requirement that can be met in a cost-effective manner at this time. Furthermore, the water infiltration limitations only deal with automatic sprinkler system discharge water and not with firefighting hose streams which will be used during firefighting activities by the responding fire department. The water from firefighting hose streams can often be significantly greater than the automatic sprinkler system discharge water.

Another argument stated was that this code change will eliminate an incentive to utilize occupant evacuation elevators in these very tall buildings. However, this code change does not eliminate the option to install occupant evacuation elevators. It only eliminates the trade-off. If these occupant evacuation elevators are so critical to occupant evacuation, then it follows that building owners will install them in any case in order to minimize their liability and provide enhanced fire and life safety to the building occupants.

Furthermore, the performance based design option can be used to determine how occupant evacuation elevators can be integrated with an exit system in these super high-rise buildings in a cost-effective yet safe and reliable manner. But such a trade-off should not be contained in the prescriptive code requirements for these super high-rise buildings.

Let's get some experience with the voluntary use of occupant evacuation elevators in this country that don't substitute for any of the required exit capacity before we begin to allow such trade-offs. In essence, the trade-off is a de facto substitution of an elevator system for a required means of egress which is clearly prohibited by Section 1003.7 which states: "Elevators, escalators, and moving walks shall not be used as a component of a required means of egress from any other part of the building."

It was also noted that these occupant evacuation elevators would be a significant improvement for persons with disabilities to allow for self-evacuation with the general population. We can't argue with that statement but we can point out that the International Building Code (IBC) currently provides for occupant evacuation of persons with disabilities via elevators in accordance with Section 1007.2.1 Elevators Required which is part of the requirements for the accessible means of egress.

In conclusion, now is not the time to allow for a trade-off of the required means of egress capacity for the use of occupant evacuation elevators in super high-rise buildings. Therefore, we strongly urge the Class A voting members to overturn the Committee's recommendation for disapproval and subsequently vote for approval as submitted of this code change proposal to delete the trade-off.

Final Action:            AS                    AM                    AMPC \_\_\_\_\_            D

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**G48-09/10**

**403.6.1, 3007.1, 3007.1.1 (New)**

### **Proposed Change as Submitted**

**Proponent:** Dave Frable, representing U.S. General Services Administration

**Revise as follows:**

**403.6.1 Fire service access elevator.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, a minimum of ~~one~~ two elevators having a minimum 3,500 pounds (1588 kilograms) capacity serving every floor within the subject building shall be provided to serve as a fire service access elevator shall be provided in accordance with Section 3007.

**Exception:** One elevator having a minimum capacity of 4,000 pounds (1814 kilograms) shall be permitted instead of 2 elevators of 3,500 pounds (1588 kilograms) capacity.

**3007.1 General.** Where required by Section 403.6.1, every floor of the building shall be served by a fire service access elevator elevators. Except as modified in ~~this section, the Sections 3007.1 through 3007.7,~~ fire service access elevator elevators shall be installed in accordance with this chapter and ASME A17.1/CSA B44.

**Reason:** Last Code Development Cycle, a code change was submitted to require a minimum of 3 fire service elevators. The subject proposal was disapproved by the Code Committee based on concerns that requiring a minimum of 3 fire service access elevators would have an adverse impact on a small footprint high-rise building and that requiring a minimum of 3 fire service access elevators seemed excessive. The intent of this code change is to provide a compromise that addresses the minimum number of fire service access elevators that are required in a building based on the size and capacity of the elevator and not strictly the number of elevators. The proposed text also allows for design flexibility as well as providing minimum requirements for the size and capacity of the fire service access elevators by correlating with Section 3002.4

**Cost Impact:** The code change proposal will increase the cost of construction.

ICCFILENAME: FRABLE-G6-403.6.1

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The option of three elevators in G49-09/10 is preferred to one or two elevators with a higher capacity car as proposed in this item. If the trade-off is capacity vs. number of elevators the fire service would prefer more elevators to allow for different elevators to be used for different purposes. Whether fire service elevators need to be also sized for stretchers can be addressed in G157-09/10.

**Assembly Action:**

**None**

### **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because public comments were submitted.**

*Public Comment 1:*

**Dave Frable, representing U.S. General Services Administration, requests Approval as Submitted.**

**Commenter's Reason:** The intent of this code change is to address that the minimum number of fire service access elevators be based on size and capacity of the elevator and not strictly on the minimum number of elevators. In addition, it ensures that each fire service access elevator serves every floor of the building and that at least 1 fire service elevator car be of sufficient size to accommodate a 24 inch by 84 inch stretcher.

The Code Committee states in their reason statement that the option of three elevators in G49-09/10 is preferred to providing only two elevators with a higher capacity car as proposed. The Committee further states that if the trade-off is capacity vs. number of elevators the fire service would prefer to have available more elevators to allow for different elevators to be used for different purposes and to ensure an elevator car is available for fire department use.

It is our opinion, requiring a minimum of 3 fire service elevators for every building of 10 stories or more is not reasonable for all building designs and occupancy classifications. We strongly believe that without taking into consideration elevator capacity, a typical 10 story commercial office building having a small floor plate will lead to unintended architectural design consequences since each fire service elevator lobby will be required to have direct access to an exit stair. For example, a small floor plate building with two passenger elevator cars in one shaft and one service car/freight elevator car in another shaft would need both elevator lobbies providing direct access to the exit stairs while still meeting the exit remoteness requirements in the Code.

Typically in new commercial office buildings of this height, passenger elevator cars can range from a small 2,500 pound capacity elevator car, to a medium 3,500 pound capacity car, to larger 4,000 pound capacity elevator car. Therefore, the size of the available space within each car can range from 28 sq ft per car, 36 square feet per car, and to 41 sq ft per car, respectively. The premise of this code change is the larger the space within the elevator car the less number of trips and number of elevator cars the fire department may need to make to the staging floor on the upper floors of the building.

The subject exception is similar to what the City of San Francisco has required since 2007 for elevators for fire fighter use to be installed in buildings greater than 20 stories in height. One of the paragraphs within the San Francisco Fire Code states that "Where required, a minimum of one 4500 lb. capacity elevator or two 2500 lb. capacity elevators shall be provided for use as firefighter elevators but are not intended to be for exclusive use of the fire department." Therefore, it appears the City of San Francisco also believes that a minimum of one (1) fire service access is adequate if it is of sufficient size and capacity. However, 4,500 pound capacity elevator cars are typically only installed in hospitals and not commercial office buildings whereas 4,000 pound capacity cars are available in commercial office buildings.

It should also be noted that 2,500 pound capacity elevator cars can no longer accommodate the subject new stretcher dimensions and to our knowledge, a 3,500 pound capacity car can only accommodate the new stretcher dimensions if it is modified to a side door configuration opening. Whereas, the 4,000 pound elevator car will be able to accommodate the new stretcher dimensions without any door modifications.

We believe this revision will allow for maximum design flexibility as well as providing minimum requirements for the size and capacity of the fire service access elevators by correlating with Section 3002.4 and will improve the use of fire service access elevators across the country.

Lastly, it should be noted that a similar code change was submitted to the NFPA TC on Building Systems during the NFPA Code Development ROP phase and was approved.

**Public Comment 2:**

**Dave Frable, representing U.S. General Services Administration, requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**403.6.1 Fire service access elevator.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, a minimum of two elevators having a minimum 3,500 pounds (1588 kilograms) capacity serving every floor within the subject building shall be provided to serve as a fire service access elevator in accordance with Section 3007.

~~Exception: One elevator having a minimum capacity of 4,000 pounds (1814 kilograms) shall be permitted instead of 2 elevators of 3,500 pounds (1588 kilograms) capacity.~~

*(Portions of proposal not shown remain unchanged)*

**Commenter's Reason:** The intent of this code change is to address that the minimum number of fire service access elevators be based on size and capacity of the elevator and not strictly on the minimum number of elevators. In addition, it ensures that each fire service access elevator serves every floor of the building and that at least 1 fire service elevator car be of sufficient size to accommodate a 24 inch by 84 inch stretcher.

The Code Committee states in their reason statement that the option of three elevators in G49-09/10 is preferred to providing only two elevators with a higher capacity car as proposed. The Committee further state that if the trade-off is capacity vs. number of elevators the fire service would prefer to have available more elevators to allow for different elevators to be used for different purposes and to ensure an elevator car is available for fire department use.

It is our opinion, requiring a minimum of 3 fire service elevators for every building of 10 stories or more is not reasonable for all building designs and occupancy classifications. We strongly believe that without taking into consideration elevator capacity, a typical 10 story commercial office building having a small floor plate will lead to unintended architectural design consequences since each fire service elevator lobby will be required to have direct access to an exit stair. For example, a small floor plate building with two passenger elevator cars in one shaft and one service car/freight elevator car in another shaft would need both elevator lobbies providing direct access to the exit stairs while still meeting the exit remoteness requirements in the Code.

Typically in new commercial office buildings of this height, passenger elevator cars can range from a small 2,500 pound capacity elevator car, to a medium 3,500 pound capacity car, to larger 4,000 pound capacity elevator car. Therefore, the size of the available space within each car can range from 28 sq ft per car, 36 square feet per car, and to 41 sq ft per car, respectively. The premise of this code change is the larger the space within the elevator car the less number of trips and number of elevator cars the fire department may need to make to the staging floor on the upper floors of the building.

It should be noted that 2,500 pound capacity elevator cars can no longer accommodate the subject new stretcher dimensions and to our knowledge, a 3,500 pound capacity car can only accommodate the new stretcher dimensions if it is modified to a side door configuration opening. Whereas, the 4,000 pound elevator car will be able to accommodate the new stretcher dimensions without any door modifications.

We believe this revision will allow for maximum design flexibility as well as providing minimum requirements for the size and capacity of the fire service access elevators by correlating with Section 3002.4 and will improve the use of fire service access elevators across the country.

Lastly, it should be noted that a similar code change was submitted to the NFPA TC on Building Systems during the NFPA Code Development ROP phase and was approved.

**Public Comment 3:**

**Lee J. Kranz, City of Bellevue, representing Washington Association of Building Officials Technical Code Development Committee, requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**403.6.1 Fire service access elevator.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, a minimum of two elevators, each having a minimum 3,500 pounds (1588 kilograms) capacity serving every floor within the subject building, shall be provided to serve as a fire service access elevators in accordance with Section 3007.

~~Exception: One elevator having a minimum capacity of 4,000 pounds (1814 kilograms) shall be permitted instead of 2 elevators of 3,500 pounds (1588 kilograms) capacity.~~

*(Portions of proposal not shown remain unchanged)*

**Commenter's Reason:** Washington Association of Building Official's Technical Code Development Committee (WABO-TCDC) agrees that more fire service access elevators (FSAE) in high-rise buildings greater than 120' in height will improve fire fighter and occupant safety by providing the ability to move suppression equipment and personnel to the fire location expediently. We believe that the economic impacts of increasing the number of FSAE from 1 to 2 (a 100% increase) is justified to provide improved safety for fire fighters and the public. WABO-TCDC recommends disapproval of proposal G-49 that requires an increase from 1 to 3 FSAE and supports the moderate increase provided in proposal G-48, as modified by this public statement. The exception to allow a single 4,000 lb. elevator instead two 3,500 lb. elevators was deleted to insure that at least 2 FSAE elevators would be installed so that if 1 were shut down there would be at least 1 available.

Final Action: AS AM AMPC D

**G49-09/10**  
**403.6.1**

**Proposed Change as Submitted**

**Proponent:** Brian Black, BDBlack Codes, Inc., representing National Elevator Industry, Inc. (NEII), Sean DeCrane, representing International Association of Fire Fighters (IAFF), Jack Murphy, representing Fire Safety Directors of Greater New York (FSDAGNY)

**Revise as follows:**

**403.6.1 Fire service access elevator.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, a minimum of ~~one~~ three fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007.

**Reason:** The proponents performed a survey of firefighters from across the country to explore the sufficiency of this current code requirement. Thirty-five responses were received from cities such as Charlotte, Orlando, San Francisco, Houston, Los Angeles, Fort Worth, Boston and Pittsburgh, all indicating that the number of elevators used for firefighting operations varies from 2 to 6. (Only one respondent, a suburban bedroom community indicated one elevator is sufficient for firefighting.) Firefighters experienced in high rise operations stated that the Fire Service must be able to count on **at least two** elevators at all times. They are necessary for 1) transporting firefighters to and from the staging area, usually located two floors below the fire floor; 2) moving firefighters to other floors for the purpose of search and rescue, fire extension, recon; hauling of equipment such as spare cylinders, exhaust fans, etc; and, 3) transporting those with disabilities to the building lobby.

Past experience during fires of this type (high-rise), is that on many occasions elevators are not available due to shut downs for various reasons, including problems in operation, routine maintenance, modernization programs, EMS operations in the building prior to firefighter arrival and other reasons. Without this change there will be a high chance that there will not be a Fire Service Access Elevator available for the firefighters' to perform their critical firefighting and life-saving rescue duties.

**Cost Impact:** This code change will increase the cost of construction.

ICCFILENAME: BLACK-G5-403.6.1

**Public Hearing Results**

**Committee Action:**

**Approval as Submitted**

**Committee Reason:** Redundancy in the number of elevators available for fire department use is critical for effective fire fighting operations in buildings tall enough to need Fire Service Access elevators. Elevators size can be addressed in G157-09/10. While there are some issues of additional cost, small foot-print buildings are addressed in the additional language of "or all elevators, whichever is less."

**Assembly Action:**

**None**

**Individual Consideration Agenda**

**This item is on the agenda for individual consideration because public comments were submitted.**

*Public Comment 1:*

**Paul K. Heilstedt, PE, Hon. AIA, Chair, representing ICC Code Technology Committee (CTC), requests Approval as Modified by this Public Comment.**

**Modified proposal as follows:**

**403.6.1 Fire service access elevator.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, a minimum of ~~three~~ two fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007. Each fire service access elevator shall have a minimum capacity of 3500 pounds.

**Commenter's Reason:** There were two code changes proposed to add elevator car size requirements for fire service elevators, namely:

G48: This code change proposed either two elevators (each 3500 pounds) or a single larger elevator (4000 pounds). This code change was disapproved.

G49: This code change proposed three fire service elevators but did not mandate a size. As such the typical size of 2500 pounds would be permitted. This code change was approved.

This public comment is a compromise between G48 which proposed 2 elevators and allowed an exception for 1 provided it could accommodate fire service needs such as a stretcher and this proposed change which requires 3. This comment further mandates a minimum size of 3500 pounds which is consistent with demands for fire service access and stretcher accommodation. There is no technical justification to require 3 fire service elevators.

## *Public Comment 2:*

### **Dave Frable, representing U.S. General Services Administration, requests Disapproval.**

**Commenter's Reason:** The proponents have stated that the intent of this code change is to increase the minimum number of fire service access elevators from 1 to 3 elevators based on 35 responses from a survey of firefighters who indicated that the number of elevators they used during an event ranged from 2 to 6. However, it should be noted that the survey did not indicate the size of the elevators used by the firefighters. Typically in commercial office buildings, elevator cars can range from 2,500 pound capacity elevator cars to 3,500 pound capacity elevator cars and the size of the available space within each car can range from 28 sq ft per car to 41 sq ft per car respectively. Therefore, in our opinion, the size of the car does matter and it is possible that the firefighters that responded to the survey and stated they utilized multiple elevators were using 2500 pound capacity cars.

In addition, we also believe that requiring all of the elevators in small floor plate building to be fire service access elevators will cause major unintended design consequences when trying to meet the requirement for providing direct access from the subject enclosed fire service access elevator lobbies to an exit stair. For example, a small foot-print building with two passenger elevators in one elevator lobby and a two service car elevators in another lobby would need to be designed such that the exit stairs were remote and still had direct access to each of the elevator lobbies.

We also feel that the proponent's statement that "past experience during fires of this type (high-rise), is that on many occasions elevators are not available due to shut downs for various reasons" is based on the older technology elevators and not elevators using state-of-the-art technology which the subject fire service access elevators will have incorporated into them. Based on our discussions with elevator industry representatives, elevators using today's technology are more reliable and require less maintenance than elevators in the past.

However, the most compelling reason for disapprove of this code change is that as currently written the subject proposal will not meet the intent stated in proponents reason statement. The proponents have stated that "without this change there will be a high chance that there will not be a fire service access elevator available for the firefighters' to perform their critical firefighting and life-saving rescue duties". However, even if one agrees with this statement; based on the requirements in 3007.1, only one (1) of the three (3) designated fire service access elevators will be required to serve every floor and therefore all three (3) designated fire service elevators may not serve every floor, and may lead to confusion during fire department operations as well as unintended consequences.

Lastly, it should be noted that a similar code change was submitted to the NFPA TC on Building Systems during the NFPA Code development ROP phase and was disapproved.

## *Public Comment 3:*

### **Lee J. Kranz, City of Bellevue, representing Washington Association of Building Officials Technical Code Development Committee, requests Disapproval.**

**Commenter's Reason:** Washington Association of Building Official's Technical Code Development Committee (WABO-TCDC) believes the proposed requirement to provide 3 fire service access elevators (FSAE) in high-rise buildings greater than 120' in height is excessive. This change could increase the cost of construction to the point where it may become economically unrealistic for many high-rise projects to proceed.

WABO-TCDC agrees that additional FSAE in high-rise buildings would improve fire fighter safety and the ability to move suppression equipment and personnel to the fire location expediently but the economic impacts of increasing the number from 1 to 3 (a 200% increase) is not justified. Requiring 3 FSAE would also have an adverse impact on small footprint high-rise buildings.

WABO-TCDC suggests disapproval of G-49 and supports a moderate increase provided in proposal G-48, as modified by our public statement.

## *Public Comment 4:*

### **Michael Perrino, representing Code Consultants, Inc., requests Disapproval.**

**Commenter's Reason:** This code change requires a single fire department elevator in buildings up to 120 feet. At that threshold the minimum number jumps to three. No justification was put forth for requiring a 200 percent increase in the number of elevators once an imaginary line in the sky is crossed.

While there may be validity to the need for increased fire fighter access, the code has generally addressed such needs through progressively increasing requirements. Should there be a threshold where two elevators are required? Then another where three are required?

This argument was never fully explained at the hearings. Without justification for the sudden jump in requirements (from one to three) there should be a review of what the proper thresholds may be and whether a progressive increase is a more appropriate method to address this issue.

## *Public Comment 5:*

### **Lawrence G. Perry, AIA, representing Building Owners and Managers Association (BOMA) International, requests Disapproval.**

**Commenter's Reason:** This code change proposal should be Disapproved for the following reasons:

1. There is inadequate technical justification to mandate three fire service access elevators, particularly in all buildings >120' in height.
2. The current, brand new provisions in the 2009 code require at least one fire service access elevator. While not required, the vast majority of designs would chose to also make this elevator the required ambulance stretcher elevator, since access to each floor of the building must be provided by each type.
3. The current provisions were specifically crafted to allow the use of either the 'general public' elevator lobby or a separate lobby to serve as the required fire service access lobby. By mandating multiple elevators, the size of the required lobby increases significantly, and the likelihood of a design choosing to use a separate lobby is significantly reduced. Combining this with the potential for very tall buildings to also use occupant evacuation elevators, their efficiency would be significantly impacted by multiple fire service access elevators and conflicting lobby uses.

4. A lot of the testimony provided in support of this change made it sound as if elevators are not ever used, and could not ever be used, by the fire service if not for the newly-added fire service access elevator provisions. This is contrary to current ongoing practice in virtually all major jurisdictions.

Final Action: AS AM AMPC\_\_\_ D

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## G50-09/10 404.6

### Proposed Change as Submitted

**Proponent:** Michael Perrino, representing Code Consultants, Inc.

**Delete and substitute as follows:**

**404.6 Enclosure of atriums.** Atrium spaces shall be separated from adjacent spaces by a 1-hour fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 712, or both.

**Exceptions:**

- ~~1. A glass wall forming a smoke partition where automatic sprinklers are spaced 6 feet (1829 mm) or less along both sides of the separation wall, or on the room side only if there is not a walkway on the atrium side, and between 4 inches and 12 inches (102mm and 305 mm) away from the glass and designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction. The glass shall be installed in a gasketed frame so that the framing system deflects without breaking (loading) the glass before the sprinkler system operates.~~
1. A glass wall and doors forming a smoke partition in accordance with Section 711, constructed of a tempered, wired or laminated glass wall and doors, complying with all of the following:
  - 1.1. Automatic sprinklers are spaced 6 feet (1829 mm) or less along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the atrium side, and between 4 inches and 12 inches (102 mm and 305 mm) away from the glass. When activated the sprinkler system shall completely wet the entire surface of the glass.
  - 1.2. The glass shall be in a gasketed frame and installed in a manner that the framing system will deflect without breaking (loading) the glass before the sprinklers operate.
  - 1.3. Obstructions shall not be installed between the sprinklers and the glass wall or doors.
2. A glass-block wall assembly in accordance with Section 2110 and having a 3/4-hour fire protection rating.
3. The adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where such spaces are accounted for in the design of the smoke control system.

**Reason:** The change brings to the atrium section the allowance for doors to be protected in the same manner as is permitted for walls and doors separating a pedestrian walkway from a building by Section 3104.5, exception 1. The allowances are almost identical as currently written, the only difference being the specific allowance for doors to be installed in the glass walls separating buildings, but not in glass walls separating atrium spaces.

**Cost Impact:** The code change proposal will not increase the cost of construction. The proposal will decrease the cost of construction.

ICCFILENAME: PERRINO-G2-404.5

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee liked the proposed reformatting of the provisions because it provided clarity to the existing requirements; however the change included some technical flaws. Therefore the committee felt that G51-09/10 better addressed the issue.

**Assembly Action:**

**None**

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## Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

*Public Comment:*

**Don Davies, Salt Lake City Corporation, representing Utah Chapter, requests Approval as Submitted.**

**Commenter's Reason:** This provision is far superior to G51. The current Ex.1 to I.B.C. Section 404.6 describes a smoke partition with glazing in gasketed frames. The proponent understood the concept that the separation was intended only to control smoke and need not be a fire barrier as is currently required in the code. Requiring a ¾ hour door next to a nonrated wall was always a difficult position to defend. Simply referring to Section 711 addresses the concern that the door be tested to meet the smoke and draft control requirements of U.L. 1784. This is a well thought out change which should have occurred years ago.

Final Action:                    AS                    AM                    AMPC\_\_\_\_\_                    D

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### **G51-09/10 404.6**

#### Proposed Change as Submitted

**Proponent:** Clay Aler, PE, representing Koffel Associates

**Revise as follows:**

**404.6 Enclosure of atriums.** Atrium spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 712, or both.

**Exceptions:**

1. A glass wall forming a smoke partition where automatic sprinklers are spaced 6 feet (1829 mm) or less along both sides of the separation wall, or on the room side only if there is not a walkway on the atrium side, and between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction. The glass wall shall be installed in a gasketed frame so that the framing system deflects without breaking (loading) the glass before the sprinkler system operates. Self-closing glass doors shall be permitted in the glass wall.
2. A glass-block wall assembly in accordance with Section 2110 and having a 3/4-hour *fire protection rating*.
3. The adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where such spaces are accounted for in the design of the smoke control system.

**Reason:** Where glass walls are used as an atrium enclosure, it is typical to include glass doors in the glass walls to maintain material continuity. The current code text makes no reference to whether glass doors are permitted as part of the atrium enclosure. The proposed revised text will make it clear that glass doors are permitted in glass walls, so long as the glass doors are sprinkler protected in a manner consistent with that provided for the glass wall.

**Cost Impact:** The code change proposal will not increase the cost of construction.

ICCFILENAME: ALER-G1-404.5.doc

#### Public Hearing Results

**Committee Action:**

**Approval as Submitted**

**Committee Reason:** The proposal provides a clear answer to the question of whether doors are allowed in the glass wall forming the separation between an atrium and adjoining spaces.

**Assembly Action:**

**None**

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## **Individual Consideration Agenda**

This item is on the agenda for individual consideration because public comments were submitted.

### *Public Comment 1:*

**Clay Aler, representing Koffel Associates, Inc., requests Approval as Modified by this Public Comment.**

Modify the proposal as follows:

**404.6 Enclosure of atriums.** Atrium spaces shall be separated from adjacent spaces by a 1-hour fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 712, or both.

#### **Exceptions:**

1. A fire barrier is not required where a glass wall forming a smoke partition where is provided. The glass wall shall comply ~~complying~~ with all of the following:
  - 1.1 Automatic sprinklers are provided spaced 6 feet (1829 mm) or less along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the atrium side. The sprinklers shall be located and between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not exceeding 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
  - 1.2 The glass wall shall be installed in a gasketed frame ~~so~~ in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
  - 1.3 ~~Self-closing or automatic-closing~~ Where glass doors shall be permitted are provided in the glass wall, they shall be either self-closing or automatic closing.
2. A fire barrier is not required where a glass-block wall assembly, in accordance ~~complying~~ with Section 2110 and having a 3/4-hour fire protection rating, is provided.
3. A fire barrier is not required between the atrium and the adjoining adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where provided such spaces are accounted for in the design of the smoke control system.

**Commenter's Reason:** The modification to proposal G51-09/10 addresses two issues. First it addresses the Committee's comment to rewrite the approved proposal, specifically item #1 of that proposal, to be in a format more consistent with proposal G50-09/10. In preparing the Exception #1 into its three subparts, it became clear that all three exceptions were unclear because of their format and, in some cases, lack of a complete sentence. The additional revisions to Exception 1 as well as the revisions to Exceptions 2 and 3 are intended to be purely editorial in order to provide the limits and requirements of the exceptions in clear language.

### *Public Comment 2:*

**Ali M. Fattah, City of San Diego, Development Services Department, representing San Diego Area Chapter of ICC, requests Approval as Modified by this Public Comment.**

Modify the proposal as follows:

**404.6 Enclosure of atriums.** Atrium spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 712, or both.

#### **Exceptions:**

1. A glass wall forming a smoke partition where automatic sprinklers are spaced 6 feet (1829 mm) or less along both sides of the separation wall, or on the room side only if there is not a walkway on the atrium side, and between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction. The glass wall shall be installed in a gasketed frame so that the framing system deflects without breaking (loading) the glass before the sprinkler system operates. Self-closing glass doors shall be permitted in the glass wall and shall be provided with smoke and draft control and shall comply with the air leakage rates in Section 715.4.3.1.
2. A glass-block wall assembly in accordance with Section 2110 and having a 3/4-hour fire protection rating.
3. The adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where such spaces are accounted for in the design of the smoke control system.

**Commenter's Reason:** This public comment adds more clarification that the glazed door requires smoke and draft control as is required for the glass wall that is required to be gasketed. It makes no sense to have a self closing glass door in a glass wall assembly that is constructed to prevent the passage of smoke. Sprinkler protection on the glass cools the glass so that it does not fracture due to fire but does not prevent the migration of smoke from the atrium into adjoining spaces that are required to be separated.

*Public Comment 3:*

**Michael Perrino, representing Code Consultants, Inc., requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**404.6 Enclosure of atriums.** Atrium spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 712, or both.

**Exceptions:**

1. A glass wall forming a smoke partition, ~~where complying with all of the following:~~
  - 1.1 Automatic sprinklers are spaced 6 feet (1829 mm) or less along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the atrium side, and between 4 inches and 12 inches (102 mm and 305 mm) away from the glass. The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
  - 1.2 The glass wall shall be installed in a gasketed frame, so in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
  - 1.3 Self-closing or automatic-closing glass doors shall be permitted in the glass wall.
2. A glass-block wall assembly in accordance with Section 2110 and having a 3/4-hour fire protection rating.
3. The adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where such spaces are accounted for in the design of the smoke control system.

**Commenter's Reason:** The committee liked the proposed reformatting of the provisions in proposal G50-09/10, because it provided clarity to the existing requirements. However, the committee felt that G51-09/10 better addressed the question of whether doors are allowed in the glass wall forming the separation between an atrium and adjoining spaces.

This Public Comment incorporates the formatting of G50 with the technical elements of G51, to address all of the committee's comments on this section.

*Public Comment 4:*

**Don Davis, Salt Lake City Corporation, representing Utah Chapter, requests Disapproval.**

**Commenter's Reason:** Code change G50 correctly addresses the type of door which should occur at the separation of the atrium and adjoining spaces by requiring that the door meet the requirements of a smoke and draft control assembly, as required in U.L. 1784. This proposal allows glass pivoting doors with no mention of how smoke control will occur at that location. The adjoining sidelights and glazed walls are currently required to be in gasketed frames, as opposed to butt glazing which would allow smoke migration. While the door need not be required to be ¾-hour rated, allowing a door without smoke gasketing defeats the purpose of separating the surrounding areas from the atrium.

Final Action:                      AS                      AM                      AMPC\_\_\_\_\_                      D

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## **G52-09/10**

**404.6 (New), 1022.1(IFC [B] 1022.1)**

### **Proposed Change as Submitted**

**Proponent:** David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects

**1. Add new text as follows:**

**404.6 Exit Stairway.** Up to 50 percent of the exits required by Section 1021 shall be permitted to be located within an atrium without enclosure required by Section 1022, provided:

1. The stairway discharges to the floor of the atrium;
2. The floor of the atrium is at the level of exit discharge and conforms with Section 1027.1; and
3. The footprint of the stairway when measured horizontally within the perimeter of the atrium floor opening shall not equal more than 25 percent of the area of the atrium on a per floor basis.

*(Renumber subsequent sections)*

**2. Revise as follows:**

**1022.1 (IFC [B] 1022.1) Enclosures required.** Interior exit stairways and interior exit ramps shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section

712, or both. Exit enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the exit enclosure shall include any basements but not any mezzanines. Exit enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. Exit enclosures shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an exit passageway conforming to the requirements of Section 1023, except as permitted in Section 1027.1. An exit enclosure shall not be used for any purpose other than means of egress.

**Exceptions:**

1. In all occupancies, other than Group H and I occupancies, a stairway is not required to be enclosed when the stairway serves an occupant load of less than 10 and the stairway complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories shall not exceed two.
  - 1.1. The stairway is open to not more than one story above its level of exit discharge; or
  - 1.2. The stairway is open to not more than one story below its level of exit discharge.
2. Exit stairways in atriums conforming to Section 404.6 are not required to be enclosed.
23. Exits in buildings of Group A-5 where all portions of the means of egress are essentially open to the outside need not be enclosed.
34. Stairways serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
- 4-5. Stairways in open parking structures that serve only the parking structure are not required to be enclosed.
56. Stairways in Group I-3 occupancies, as provided for in Section 408.3.8, are not required to be enclosed.
67. Means of egress stairways as required by Sections 410.5.3 and 1015.6.1 are not required to be enclosed.
78. Means of egress stairways from balconies, galleries or press boxes as provided for in Section 1028.5.1 are not required to be enclosed.

**Reason:** The atrium enclosure provides adequate protection for occupants of the building by providing fire suppression, smoke removal systems and provides additional features that a stair enclosure lacks; the ability to observe the environment in which the stair is located. It would be a simple matter to glance down into the atrium prior to mounting the stairs to see if there are problems associated with the environment, making the decision to use the atrium stair much simpler than a stair whose environment is unknown beyond the one visible flight of stairs.

**Cost Impact:** The code change proposal will not increase the cost of construction.

ICCFILENAME: COLLINS-G4-404.6.doc

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**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal sets no limit on the number of stories or travel distance. In tall buildings the atrium could potentially fill up with smoke enough that some upper floors would have the use of the exit stairway jeopardized. It is not clear how this revision will coordinate with the committee's approval of E5-09/10 for open exit access stairways and open exit stairways.

**Assembly Action:**

**None**

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**Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

***Public Comment:***

**David S. Collins, The Preview Group, Inc., representing The American Institute of Architects, requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**404.6 Exit stairway.** Up to 50 percent of the exits required by Section 1021 shall be permitted to be located within an atrium without enclosure required by Section 1022, provided:

1. The stairway or ramp discharges to the floor of the atrium;
2. The floor of the atrium is at the level of exit discharge and conforms with Section 1027.1; and
3. The footprint of the stairway or ramp when measured horizontally within the perimeter of the atrium floor opening shall not equal more than 25 percent of the area of the atrium on a per floor basis.

(Portions of proposal not shown remain unchanged)

**Commenter's Reason:** The committee rejected this code change for three reasons:

1. *The proposal sets no limit on the number of stories or travel distance.*  
Travel distance is determined by the distance within the occupied space to the exit. With this change, the stair within the atrium would become the exit and the travel distance would be measured to it. An atrium is required to have significant features that provide a safe environment even when it may be involved in an event that would compromise this stair. 50% of the required stairs from any floor would not be permitted to be in the atrium, allowing alternate paths should the atrium stair be compromised.
2. *In tall buildings the atrium could potentially fill up with smoke enough that some upper floors would have the use of the exit stairway jeopardized.*  
It is possible for any exit to become compromised due to any number of circumstances, however a very tall atrium is required to have a smoke removal system capable of maintaining a viable environment at the highest occupied floor within the atrium enclosure. The smoke layer is designed to be at least 6' above the highest occupied floor when using the exhaust method for design (Section 909.8.1).
3. *It is not clear how this revision will coordinate with the committee's approval of E5-09/10 for open exit access stairways and open exit stairways.*  
In a separate comment I have submitted a change to E5-09/10 to incorporate the use of an atrium as an exit as part of Section 1022.2 when it conforms with Section 404.  
Atriums have proven to not create serious problems for building occupants. Because atriums are typically a significant part of the building configuration when they are incorporated into a building, use of an atrium as a part of the building exiting system will improve occupant awareness of at least the option to use the atrium stair as an exit in an emergency.

Final Action:                    AS                    AM                    AMPC\_\_\_\_\_                    D

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## **G54-09/10**

**406.1 (New), 406.2 (New), 406.2.1, 406.3.1, 406.3.2**

### **Proposed Change as Submitted**

**Proponent:** Donald R. Monahan, PE, Walker Parking Consultants, representing the National Parking Association and the Automated & Mechanical Parking Association

**1. Add new text as follows:**

**SECTION 406**  
**MOTOR-VEHICLE-RELATED OCCUPANCIES**

**406.1 General.** Motor –vehicle related occupancies shall comply with Sections 406.1 through 406.8 and other applicable provisions of this code, the *International Fire Code* and *International Mechanical Code*.

**406.2 Definitions.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

**PARKING GARAGE.** A building, structure, or portion thereof used for the parking, storage, or both, of motor vehicles less than 6500 lbs empty curb weight.

**PARKING GARAGE, OPEN.** A parking garage that meets the requirements of Section 406.3.

**PARKING GARAGE, ENCLOSED.** Any parking garage that is not an open parking garage.

**PARKING GARAGE, RAMP TYPE.** A parking garage that utilizes sloped floors for vertical vehicle circulation.

**PARKING GARAGE, ASSISTED MECHANICAL TYPE.** A parking garage that uses lifts or other mechanical devices to transport vehicles to the upper or lower floors of a parking garage, where the vehicles are then parked by an attendant.

**PARKING GARAGE, AUTOMATED MECHANICAL TYPE.** A parking garage that utilizes computer-controlled machines to store and retrieve vehicles, without drivers, in multi-level storage bays.

(Renumber subsequent sections)

**2. Delete without substitution as follows:**

**406.2 Parking garage**

~~**406.2.1 Classification.** Parking garages shall be classified as either open, as defined in Section 406.3, or enclosed and shall meet the appropriate criteria in Section 406.4. Also see Section 509 for special provisions for parking garages.~~

*(Renumber subsequent sections)*

**3. Revise as follows:**

**406.3 Open parking garages.**

**406.3.1 Scope.** Except where specific provisions are made in Sections 406.3.2 through ~~406.3.13~~ 406.3.12, other requirements of this code shall apply.

**4. Delete text as follows:**

~~**406.3.2 Definitions.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.~~

~~**MECHANICAL-ACCESS OPEN PARKING GARAGES.** Open parking garages employing parking machines, lifts, elevators or other mechanical devices for vehicles moving from and to street level and in which public occupancy is prohibited above the street level.~~

~~**OPEN PARKING GARAGE.** A structure or portion of a structure with the openings as described in Section 406.3.3.1 on two or more sides that is used for the parking or storage of private motor vehicles as described in Section 406.3.4.~~

~~**RAMP-ACCESS OPEN PARKING GARAGES.** Open parking garages employing a series of continuously rising floors or a series of interconnecting ramps between floors permitting the movement of vehicles under their own power from and to the street level.~~

*(Renumber subsequent sections)*

**Reason:** Section 406 applies to parking garages in general. Therefore, the different types of parking garages should be defined in this section. Listing the definitions under Section 406.3 is inappropriate as that section is a special subset of parking garages that only applies to Open Parking Garages. In particular, it is necessary to define the different types of mechanical access garages, as some types of mechanical access garages use freight elevators to lift a vehicle to another floor where it is then parked by an attendant. Therefore, ventilation of vehicle emissions is important for that type of garage. However, automated, mechanical access parking garages are finding their way into the U.S. market from Europe and Asia. These garages use computer-controlled machines to store and retrieve vehicles without the vehicle engine running and without human intervention. The vehicles are stored in an unoccupied, enclosed storage vault. Therefore, the life safety provisions inside that unoccupied storage vault are considerably different than in an occupied space. Only access by maintenance personnel and firefighter personnel is required in the storage vault. Ventilation of vehicle emissions is not required. These garages are not defined in the current building code. Further, up to double the number of vehicles can be accommodated in automated mechanical garages so they represent "Green" design in addition to the reduction in vehicle emissions that make this type of garage greener than traditional garages.

**Cost Impact:** The code change proposal will not increase the cost of construction.

ICCFILENAME: MONAHAN-G4-406.2.1

**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The organization issues were resolved by approval of Item G53-09/10. The committee was uncertain that the revised definitions contained in this proposal were necessary or provided clear application to the rest of the section. In addition there was concern regarding adding a vehicle weight limit to the definition of a parking garage. The committee was concerned regarding its enforceability or that it was even necessary.

**Assembly Action:**

**None**

## **Individual Consideration Agenda**

This item is on the agenda for individual consideration because a public comment was submitted.

### *Public Comment:*

**Stephen Thomas, Colorado Code Consulting, LLC, representing Automated Mechanical Parking Association (AMPA), requests Approval as Modified by this Public Comment.**

Replace the proposal as follows:

~~406.3.2 406.2 Definitions.~~ The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

~~**MECHANICAL-ACCESS OPEN PARKING GARAGES.** Open parking garages employing parking machines, lifts, elevators or other mechanical devices for vehicles moving from and to street level and in which public occupancy is prohibited above the street level.~~

~~**ASSISTED MECHANICAL PARKING GARAGE.** A parking garage that uses lifts or other mechanical devices to transport vehicles to the upper or lower floors of a parking garage, where the vehicles are then parked by an attendant, and in which public occupancy is prohibited within the storage area.~~

~~**AUTOMATED MECHANICAL PARKING GARAGE.** A parking garage that utilizes computer-controlled machines to store and retrieve vehicles in multi-level storage bays without drivers or attendants, and in which public occupancy is prohibited within the storage bay levels.~~

~~**OPEN PARKING GARAGE.** A structure or portion of a structure with the openings as described in Section 406.3.3.1 on two or more sides that is used for the parking or storage of private motor vehicles as described in Section 406.3.4.~~

~~**RAMP-ACCESS OPEN PARKING GARAGES.** Open parking garages employing a series of continuously rising floors or a series of interconnecting ramps between floors permitting the movement of vehicles under their own power from and to the street level.~~

**Commenter's Reason:** This proposal is intended to introduce the concept of automated mechanical parking garages into the code. The first part of the change relocates the definitions in Section 406 to the front of the section in 406.2. This is consistent with code change G53-09/10 which was approved by the General Committee. The second portion of the change splits the definition of "Mechanical Access Open Parking Garages" into two different categories. The first is a garage that used attendants to park the vehicle and the second where a computer-controlled machine parks the vehicle. These types of garages are beginning to make their entry into the United States. Local code officials would prefer to accommodate these types of structures into the IBC.

This proposal is the first of two that introduce this concept into the code. Automated and mechanical parking alternatives have, over the years, become more and more in demand in the US as land becomes less available (and more expensive) and cars more plentiful. While a newly emerging industry in the US, in other parts of the world it has been established for almost half a century. Additional information on these types of parking garages can be found at [www.ampapark.org](http://www.ampapark.org)

Final Action:                    AS                    AM                    AMPC \_\_\_\_\_                    D

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## **G60-09/10**

### **406.3.3.1.1 (New)**

### **Proposed Change as Submitted**

**Proponent:** Daniel E. Nichols, P.E., representing New York State Division of Code Enforcement and Administration

**Add new text as follows:**

**406.3.3.1.1 Openings below grade.** Where openings below grade provide required natural ventilation, the outside horizontal clear space measured perpendicular to the opening shall be one and one-half times the depth of the opening. The depth of the opening shall be measured from the average adjoining ground level to the bottom of the opening.

**Reason:** One of the main differences between open parking garages and enclosed garages is the ability of the openness on one or two walls to provide adequate natural ventilation. IBC Section 406.3.1.1 clearly states in the section that the openness is for natural ventilation purposes. This is supported by the IMC being completely silent on any requirements for ventilation in an open parking garage.

Open parking garages are generally separated from a surrounding structure due to limitations of fire separation distance (10 feet). However, fire separation distance isn't needed from grades and retaining walls. A condition has been experienced where an open parking garage has been built into a steep grade, and the openings are provided. In one case, a retaining wall is 5 feet away from the exterior wall of the open parking garage and the vertical distance from the lowest level of the open parking garage to the top of the wall is approximately 50 feet.

IBC Section 1203 has requirements for the use of below ground openings being used for natural ventilation. This proposal uses the exact language in Section 1203 to provide recognized design standards for below ground openings.

**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee found the text confusing and it would seem to require a below grade area that would have to be wider at the bottom than at the top of the opening at grade. There was debate whether the 1 - 1/2 factor was appropriate.

**Assembly Action:**

**None**

**Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Daniel E. Nichols, P.E., representing New York State Division of Code Enforcement and Administration, requests Approval as Modified by this Public Comment.**

Replace the proposal as follows

406.3.3.1.1 Openings below grade. Where openings below grade provide required natural ventilation, the outside horizontal clear space shall be one and one-half times the depth of the opening. The width of the horizontal clear space shall be maintained from grade down to the bottom of the lowest required opening.

**Commenter's Reason:** The committee was concerned on how multiple levels would be measured and that they intended objective was not reflected in the original proposal. This public comment addresses the issue by basing the measurement point on the depth of the lowest required opening. The one and one-half is based on the requirement of openings below grade for providing natural ventilation for operable windows in occupied spaces.

Final Action: AS AM AMPC\_\_\_ D

**G64-09/10, PART I  
IBC 406.7 (New), IFC 2303.2**

**NOTES: PART II DID NOT RECEIVE A PUBLIC COMMENT AND IS ON THE CONSENT AGENDA. PART II IS REPRODUCED FOR INFORMATIONAL PURPOSES ONLY FOLLOWING ALL OF PART I.**

**Proposed Change as Submitted**

**Proponent:** Donald R. Monahan, PE, Walker Parking Consultants, representing the National Parking Association and the Automated & Mechanical Parking Association

**PART I – IBC GENERAL**

**1. Add a new section as follows:**

**406.7 Parking garages, automated mechanical type.**

**406.7.1 General.** Automated mechanical type parking garages shall comply with Sections 406.7.1 through 406.7.3.

**406.7.2 Construction.** The storage vault enclosure is classified as a high-bay storage warehouse for motor vehicles, and shall meet the requirements of Chapter 23 of the *International Fire Code*.

**406.7.3 Storage Racks.** The storage racks shall consist of non-combustible construction. Steel storage racks shall designed in accordance with Section 2208.

**Reason: (IBC)** Automated, mechanical-access parking garages are finding their way into the U.S. market from Europe and Asia. These facilities utilize computer-controlled machines and lifts to store and retrieve vehicles on a platform without the engine running and without human intervention in an unoccupied, high-bay storage vault. They have unique fire and life safety issues and as such need a separate code section to define the code requirements for these unique facilities.

**References:** *Parking Structure Fires* by the Parking Consultants Council of the National Parking Association, Washington, DC, December 2008

**Cost Impact:** None

ICCFILENAME: MONAHAN-G5-406.7 NEW (Pt II F2-2303.2)

## **Public Hearing Results**

### **PART I- IBC GENERAL**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee felt that standards for automated garages eventually need to be in the code, however this proposal needs further refinement. Among the issues identified by the committee that need to be clarified are: How would sprinklers be provided; Should there be different criteria if these are in open versus enclosed garages; Egress and accessibility need to be addressed; While there may be limited occupant load, the occupancy is still a storage facility for cars, therefore a Group S occupancy. Clear provisions on structural requirements would need to be added.

**Assembly Action:**

**None**

## **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Stephen Thomas, Colorado Code Consulting, LLC, representing Automated Mechanical Parking Association (AMPA), requests Approval as Modified by this Public Comment for Part I.**

**Modify the proposal as follows:**

**406.7 Automated mechanical parking garages, ~~automated mechanical type.~~**

**406.7.1 General.** Automated mechanical type parking garages shall comply with Sections 406.7.2 through 406.7.3.

**406.7.2 Construction.** The storage vault enclosure ~~is classified as a high-bay storage warehouse storage for motor vehicles, and~~ shall meet the requirements of Chapter 23 of the *International Fire Code*.

**406.7.3 Storage Racks.** The storage racks shall consist of non-combustible construction. Steel storage racks shall designed in accordance with Section 2208.

**Commenter's Reason:** This proposal is intended to introduce the concept of automated mechanical parking garages into the code. The jurisdictions that have reviewed these structures in the United States have required them to comply with the high-piled storage requirements of the IFC. The committee agreed that standards for automated garages need to be in the code. They had concerns about different aspects of the change. By requiring the storage vault to comply with Chapter 23 of the IFC, the fire protection requirements will be answered and generally the buildings will be required to be sprinklered or provided with draft curtains and smoke and heat vents. The committee also questioned whether the criteria should apply to both open and enclosed facilities. The proposed language does not differentiate between the two. It is designed for enclosed facilities and can be applied to open structures. An open structure would provide a safer condition from a fire and smoke standpoint, but the design would comply with an enclosed structure requirements. We believe that the egress and accessibility requirements are already handled in the code. There is no need to add specific requirements into the code for these types of buildings. The committee agreed that these buildings are classified as a Group S occupancy and therefore, all of the requirements for that use group would need to be met.

These types of garages are beginning to make their entry into the United States. Local code officials are would prefer to accommodate these types of structures into the IBC. This proposal is the second of two that introduce this concept into the code. Automated and mechanical parking alternatives have, over the years, become more and more in demand in the US as land becomes less available (and more expensive) and cars more plentiful. While a newly emerging industry in the US, in other parts of the world it has been established for almost half a century. Additional information on these types of parking garages can be found at [www.ampapark.org](http://www.ampapark.org)

Final Action:

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**NOTE: PART II REPRODUCED FOR INFORMATIONAL PURPOSES ONLY – SEE ABOVE**

**G64-09/10, PART II – IFC**



**Revise text as follows:**

**2303.2 Class I commodities.** Class I commodities are essentially noncombustible products on wooden or nonexpanded polyethylene solid deck pallets, in ordinary corrugated cartons with or without single-thickness dividers, or in ordinary paper wrappings with or without pallets. Class I commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 2303.7.4. Examples of Class I commodities include, but are not limited to, the following:

- Alcoholic beverages not exceeding 20-percent alcohol
- Appliances noncombustible, electrical
- Cement in bags
- Ceramics
- Dairy products in nonwax-coated containers (excluding bottles)
- Dry insecticides
- Foods in noncombustible containers
- Fresh fruits and vegetables in nonplastic trays or containers
- Frozen foods
- Glass
- Glycol in metal cans
- Gypsum board
- Inert materials, bagged
- Insulation, noncombustible
- Motor vehicles less than 6500 pounds empty curb weight
- Noncombustible liquids in plastic containers having less than a 5-gallon (19 L) capacity
- Noncombustible metal products

**Reason (IFC):** Automated, mechanical-access parking garages are finding their way into the U.S. market from Europe and Asia. These facilities utilize computer-controlled machines and lifts to store and retrieve vehicles without the engine running and without human intervention in an unoccupied, high-bay storage vault. They have unique fire and life safety issues that are similar to high piled storage of commodities covered by Chapter 23 of the IFC and therefore should be included in this Chapter. The reference below indicates that the amount of combustibles in a typical passenger vehicle is less than 5 pounds per sf, which then classifies passenger vehicles as low hazard in accordance with NIST standards and qualifies as a Class I commodity in this section.

**References:** *Parking Structure Fires* by the Parking Consultants Council of the National Parking Association, Washington, DC, December 2008

**Cost Impact:** None

**PART II- IFC**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee questioned the selection of the 6500 pound limit for the vehicles. Many common vehicles exceed that weight. The committee also felt there was not sufficient justification provided for listing these as a Class I commodity based on the fuel load present. Proponent should reconsider the classification.

**Assembly Action:**

**None**

## G70-09/10

[F] 410.6

### **Proposed Change as Submitted**

**Proponent:** Bill Conner, representing American Society of Theatre Consultants

**Revise as follows:**

**[F] 410.6 Automatic sprinkler system.** ~~Stages and associated dressing rooms, performer lounges, shops, storerooms and technical production areas located within and adjoining a stage shall be equipped with an automatic fire-extinguishing sprinkler system in accordance with Chapter 9 Section 903.3.1.1. Sprinklers shall be installed under the roof and gridiron and under all catwalks and galleries over the stage. Sprinklers shall be installed in dressing rooms, performer lounges, shops and storerooms accessory to such stages.~~

**Exceptions:**

1. Sprinklers are not required under stage areas less than 4 feet (1219 mm) in clear height that are utilized exclusively for storage of tables and chairs, provided the concealed space is separated from the adjacent spaces by not less than 5/8-inch (15.9 mm) Type X gypsum board.

2. Sprinklers are not required for stages 1,000 square feet (93 m2) or less in area and 50 feet (15 240 mm) or less in height where curtains, scenery or other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs and a single backdrop.
3. Sprinklers are not required within portable orchestra enclosures on stages.

**Reason:** Update language to be consistent with other parts of the code. This also provides a specific reference to Section 903.3.1.1 which contains the reference to the NFPA 13 requirements. The NFPA standard provides adequate information regarding the placement of sprinklers in the backstage and other technical production areas, and such language is not needed in the code.

**Cost Impact:** The code change proposal will not increase the cost of construction.

**Analysis:** There is an MOE code change proposal that contains a definition of technical production areas.

ICCFILENAME: CONNER-G1-410.6

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal was disapproved as it was felt it would eliminate sprinklers in critical areas such as gridirons.

**Assembly Action:**

**None**

### **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Joe Pierce, Dallas Fire Department, representing Joint Fire Service Review Committee, requests Approval as Modified by this Public Comment.**

**Replace the proposal as follows:**

**[F] 410.6 (IFC 914.6.1) Automatic sprinkler system.** Stages shall be equipped with an automatic fire-extinguishing sprinkler system in accordance with ~~Chapter 9 Section 903.3.1.1~~. Sprinklers shall be installed under the roof and gridiron and under all catwalks and galleries over the stage. Sprinklers shall be installed in dressing rooms, performer lounges, shops and storerooms accessory to such stages.

*(Remaining text remains unchanged.)*

**Commenter's Reason:** This Public Comment essentially retains the original text in Section 410.6 except for the reference to Chapter 9. The code change proposed to revise the vague Chapter 9 reference with a specific reference to Section 903.3.1.1.

This Public Comment intends to approve the proposed reference to Section 903.3.1.1, rather than a reference to Chapter 9. Section 903.3.1.1 is the correct reference for the sprinkler system design as this will refer to NFPA 13. Both NFPA 13R and NFPA 13D are inappropriate design standards for a fire sprinkler system over a stage. The change also maintains the update to consistent language referring to an automatic sprinkler system rather than a fire-extinguishing system.

Final Action:            AS                    AM                    AMPC\_\_\_\_            D

## **G80-09/10**

### **419.9 (New)**

### **Proposed Change as Submitted**

**Proponent:** Tom Rubottom City of Westminster, Colorado representing the Colorado Chapter of ICC

**Add new text as follows:**

**419.9 Plumbing facilities.** The nonresidential area of the live/work unit shall be provided with minimum plumbing facilities as specified by Chapter 29, based on the function of the nonresidential area.

**Reason:** The current code requirements do not require toilet facilities for the work area of a live/work unit. Live/work units are classified as Group R-2 occupancies. The only toilet facilities now required are those for the dwelling unit which could be located on the upper floors and therefore there

would be no requirements for any plumbing fixtures on the main level work area. The toilet room in the dwelling unit will not be accessible to the same standards as required for an accessible public toilet room in business and commercial occupancies. This code change would add language to make sure the work area would have the same minimum plumbing facilities (both for number of fixtures and for meeting accessibility requirements) as a typical commercial project.

**Cost Impact:** The code change proposal will increase the cost of construction.

ICCFILENAME: RUBOTTOM-G2-419.1

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The intent of the live/work provisions is small business oriented. The proposal is too far reaching for the limited size of live/work units. A valid concern is that the toilets required for the work area can be accessed from the work area.

**Assembly Action:**

**None**

### Individual Consideration Agenda

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Tim Pate representing Colorado Chapter of ICC, requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**419.9 Plumbing facilities.** The nonresidential area of the live/work unit shall be provided with minimum plumbing facilities as specified by Chapter 29, based on the function of the nonresidential area. Where the nonresidential area of the live/work unit is required to be accessible by Section 1103.2.13, the plumbing fixtures specified by Chapter 29 shall be accessible.

**Commenter's Reason:** This public comment and modification will address the concerns of the General Committee that the original proposal was too far reaching for the limited sizes of live work units and that the live work provisions are small business oriented.

The live/work provisions allow the total square footage to be 3,000 and up to 50% of that can be the work area. In reality since the total square footage allowed for the work portion of a live work unit is 1,500 square feet only one bathroom would be required in almost every situation and you would rarely require a drinking fountain.

Section 2902.2 exception 2 only requires one bathroom when total occupant load (employees and customers) is 15 or less and Section 2902.2 exception 3 only requires one bathroom when occupant load is 50 or less. Therefore if a work portion is business you would have a maximum area of 1,500 square feet which would be an occupant load of 15 and if work area is mercantile you would have an occupant load of 50. In either case you would only be required to have one bathroom. If you had a coffee shop or food service you would need two bathrooms when square footage exceeded 195 square feet (assuming two employees and 15 square feet per occupant for seating).

Footnote f of Table 2902.1 says that you do not need drinking fountain when the occupant load is 15 or less and IPC section 4 says that you do not need drinking fountain in restaurant that serves water. Therefore in most cases you would not need a drinking fountain.

Table 2902.1 does require a service sink in all occupancies. This is always a challenge in the typical small commercial spaces and most AHJ's use proper discretion when enforcing this provision based on the type of use. One would make the case that a typical laundry sink that is in the living portion of the live/work unit could suffice. I believe that most Health Departments would require some sort of service sink anyway.

The live/work provisions allow up to 5 non residential workers and it does not make sense to not require bathrooms for the workers so that they would have to travel through the private living space to get to a bathroom not to mention the accessible route requirements.

A final item to keep in mind is that if the work area is an office and is less than 10% of total square footage it is not classified as live/work.

As can be seen having Section 419 refer to Chapter 29 for plumbing fixture requirements it will be rare to ever require more than one bathroom or even to require a drinking fountain. It does not make sense to treat this business use any differently than someone building under the IBC. The live/work provision already refer to ventilation provisions out of IMC and structural, means of egress, and accessibility provisions out of IBC. It should also refer to the plumbing fixture requirements.

Final Action:            AS                    AM                    AMPC\_\_\_\_\_            D

# G81-09/10

420.2, Table 503, Table 508.4, 509.5, 509.6, 705.11, 707.3.10 (New), 709.3, 709.4, 717.3.2, 717.4.2

## Proposed Change as Submitted

**Proponent:** Jason Thompson, National Concrete Masonry Association, representing the Masonry Alliance for Codes and Standards

### 1. Revise as follows:

**420.2 Separation walls.** Walls separating dwelling units in the same building, walls separating sleeping units in the same building, and walls separating dwelling units or sleeping units in the same building shall be constructed as fire partitions barriers in accordance with Section 709 707.

**Exception:** In Group R-3 occupancies, walls separating dwelling units in the same building, walls separating sleeping units in the same building, and walls separating dwelling units or sleeping units in the same building shall be constructed as fire partitions in accordance with Section 709.

**TABLE 503  
ALLOWABLE BUILDING HEIGHT AREAS<sup>a</sup>**

Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane  
Building area limitations shown in square feet as determined by the definition of "Area, building", per floor.

Group		TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
		Hgt (ft)	UL	160	65	55	65	55	65	50
STORIES (S) AREA (A)										
I-1	S A	UL UL	9 55,000	4 19,000	3 10,000	4 <u>NP</u> 46,500 <u>NP</u>	3 <u>NP</u> 10,000 <u>NP</u>	4 <u>NP</u> 18,000 <u>NP</u>	3 <u>NP</u> 10,500 <u>NP</u>	2 <u>NP</u> 4,500 <u>NP</u>
R-1	S A	UL UL	11 UL	4 24,000	4 16,000	4 <u>NP</u> 24,000 <u>NP</u>	4 <u>NP</u> 16,000 <u>NP</u>	4 <u>NP</u> 20,500 <u>NP</u>	3 <u>NP</u> 12,000 <u>NP</u>	2 <u>NP</u> 7,000 <u>NP</u>
R-2	S A	UL UL	11 UL	4 24,000	4 16,000	4 <u>NP</u> 24,000 <u>NP</u>	4 <u>NP</u> 16,000 <u>NP</u>	4 <u>NP</u> 20,500 <u>NP</u>	3 <u>NP</u> 12,000 <u>NP</u>	2 <u>NP</u> 7,000 <u>NP</u>

(Portions of table not shown are unchanged)

**TABLE 508.4  
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

OCCUPANCY	A <sup>d</sup> , E		I-1, R-1, R-2		I-4, I-3, I-4		I-2		R-3, R-4		F-2, S-2 <sup>b</sup> , U		B, F-1, M, S-1		H-1		H-2		H-3, H-4, H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A <sup>d</sup> , E	N	N	2	NP	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3 <sup>a</sup>
I-1, R-1, R-2			2	NP	2	2	2	NP	1	NP	2	NP	2	NP	NP	NP	3	NP	2	NP
I-4, I-3, I-4					N	N	2	NP	1	NP	1	2	1	NP	NP	NP	3	NP	2	NP
I-2							N	N	2	NP	2 <sup>e</sup>	NP	2	NP	NP	NP	3	NP	2	NP
R-3, R-4									N	N	1 <sup>c</sup>	2 <sup>e</sup>	NP	1	NP	NP	3	NP	2	NP
F-2, S-2 <sup>b</sup> , U											N	N	1	2	NP	NP	3	4	2	3 <sup>a</sup>
B, F-1, M, S-1													N	N	NP	NP	2	3	1	2 <sup>a</sup>
H-1															N	NP	NP	NP	NP	NP
H-2																	N	NP	1	NP
H-3, H-4, H-5																			1 <sup>ef</sup>	NP

(Footnotes not shown are unchanged.)

## 2. Delete without substitution as follows:

~~**509.5 Groups R-1 and R-2 buildings of Type IIIA construction.** The height limitation for buildings of Type IIIA construction in Groups R-1 and R-2 shall be increased to six stories and 75 feet (22 860 mm) where the first floor assembly above the basement has a fire-resistance rating of not less than 3 hours and the floor area is subdivided by 2-hour fire-resistance-rated fire walls into areas of not more than 3,000 square feet (279 m<sup>2</sup>).~~

~~**509.6 Groups R-1 and R-2 buildings of Type IIA construction.** The height limitation for buildings of Type IIA construction in Groups R-1 and R-2 shall be increased to nine stories and 100 feet (30 480 mm) where the building is separated by not less than 50 feet (15 240 mm) from any other building on the lot and from lot lines, the exits are segregated in an area enclosed by a 2-hour fire-resistance-rated fire wall and the first floor assembly has a fire-resistance rating of not less than 1<sup>1</sup>/<sub>2</sub> hours.~~

## 3. Revise as follows:

**705.11 Parapets.** Parapets shall be provided on *exterior walls* of buildings.

### Exceptions:

1. through 4. (*Exceptions not shown remain unchanged*)
5. In Groups R-2 and R-3 where the entire building is provided with a Class C roof covering, the exterior wall shall be permitted to terminate at the underside of the roof sheathing or deck in Type III, IV and V construction, provided:
  - 5.1. The roof sheathing or deck is constructed of *approved* noncombustible materials or of *fire-retardant-treated wood* for a distance of 4 feet (1220 mm); or
  - 5.2. The roof is protected with 0.625-inch (16 mm) Type X gypsum board directly beneath the underside of the roof sheathing or deck, supported by a minimum of nominal 2-inch (51 mm) ledgers attached to the sides of the roof framing members for a minimum distance of 4 feet (1220 mm).
6. (*Exceptions not shown remain unchanged*)

## 4. Add new text as follows:

**707.3.10 Separation of dwelling units and sleeping units.** The fire-resistance rating of the separation between individual dwelling units and sleeping units, and between dwelling units and sleeping units and other spaces in the building shall comply with Table 707.3.9.

**Exception:** In Group R-3 occupancies, walls separating dwelling units in the same building, walls separating sleeping units in the same building, and walls separating dwelling units or sleeping units in the same building shall be a fire-resistance-rating in accordance with Section 709.3.

## 5. Revise as follows:

**709.3 Fire-resistance rating.** Fire partitions shall have a fire-resistance rating of not less than 1 hour.

### Exceptions:

1. Corridor walls permitted to have a <sup>1</sup>/<sub>2</sub> hour fire-resistance rating by Table 1018.1.
2. Dwelling unit and sleeping unit separations in buildings of Type IIB, IIIB and VB construction shall have fire-resistance ratings of not less than <sup>1</sup>/<sub>2</sub> hour in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**709.4 Continuity.** Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto. If the partitions are not continuous to the sheathing, deck or slab, and where constructed of combustible construction, the space between the ceiling and the sheathing, deck or slab above shall be fireblocked or draftstopped in accordance with Sections 717.2 and 717.3 at the partition line. The supporting construction shall be protected to afford the required fire-resistance rating of the wall supported, except for

walls separating tenant spaces in covered mall buildings, ~~walls separating dwelling units, walls separating sleeping units~~ and corridor walls in buildings of Type IIB, IIIB and VB construction.

**Exceptions:**

1. through 4. (*Exceptions not shown remain unchanged*)
5. ~~Fireblocking or draftstopping is not required at the partition line in Group R-2 buildings that do not exceed four stories above grade plane, provided the attic space is subdivided by draftstopping into areas not exceeding 3,000 square feet (279 m<sup>2</sup>) or above every two dwelling units, whichever is smaller.~~
- ~~5.6. (*Exceptions not shown remain unchanged*)~~

**717.3.2 Groups R-1, R-2, R-3 and R-4.** Draftstopping shall be provided in floor/ceiling spaces in ~~Group R-1 buildings, in Group R-2 buildings with three or more dwelling units,~~ in Group R-3 buildings with two dwelling units and in Group R-4 buildings. Draftstopping shall be located above and in line with the dwelling unit and sleeping unit separations.

**Exceptions:**

1. Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.2, provided that automatic sprinklers are also installed in the combustible concealed spaces.

**6. Delete without substitution as follows:**

**717.4.2 Groups R-1 and R-2.** Draftstopping shall be provided in ~~attics, mansards, overhangs or other concealed roof spaces of Group R-2 buildings with three or more dwelling units and in all Group R-1 buildings.~~ Draftstopping shall be installed above, and in line with, ~~sleeping unit and dwelling unit separation walls that do not extend to the underside of the roof sheathing above.~~

**Exceptions:**

1. ~~Where corridor walls provide a sleeping unit or dwelling unit separation, draftstopping shall only be required above one of the corridor walls.~~
2. ~~Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.~~
3. ~~In occupancies in Group R-2 that do not exceed four stories above grade plane, the attic space shall be subdivided by draftstops into areas not exceeding 3,000 square feet (279 m<sup>2</sup>) or above every two dwelling units, whichever is smaller.~~
4. ~~Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.2, provided that automatic sprinklers are also installed in the combustible concealed spaces.~~

**Reason:** Though the loss of life from fires affecting Group I-1, R-1 and R-2 occupancies is not high the amount of property damage continues to remain high. To reduce this loss this proposal modifies the requirements for Group I-1, R-1 and R-2 occupancies to require that all buildings constructed for these occupancies shall be constructed of non-combustible construction and the fire rated separations between sleeping and dwelling units shall be a minimum of 2-hour fire resistance rating. The removal of combustible materials from the building construction and the increase in the fire resistance provides a much higher degree of protection to property in the event of a fire. In addition, when occupants in these types of buildings are sleeping they are less likely to be aware of conditions around them. Fires occurring during these times pose a high risk to the occupants. This increase in the fire resistance provides a higher degree of protection to sleeping occupants in reducing the spread of fire.

**Cost Impact:** The code change proposal will increase the cost of construction.

ICCFILENAME: Thompson-G4-419

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## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee disapproved the proposed change because it appeared by be addressing concerns of property protection and not life safety of the occupants of such buildings. Fire statistics cited were concentrating on buildings under construction, not those completed with required systems in place and occupied by residents. The committee concluded that the safeguards are adequate to continue to allow Group R occupancies to be located in buildings of combustible construction.

**Assembly Action:**

**None**

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## Individual Consideration Agenda

**This item is on the agenda for individual consideration because a public comment was submitted.**

### *Public Comment:*

**Jason Thompson, National Concrete Masonry Alliance (NCMA), representing, Masonry Alliance for Codes and Standards (MACS), requests Approval as Submitted.**

**Commenter's Reason:** The IBC General Code Development Committee's statement contained in their Committee Reason indicated that they recommended disapproval of this Code Change because it was more focused on addressing property protection rather than the life safety of the occupants of the Group I-1, R-1, and R-2 occupancy buildings addressed in this Code Change. They also stated that the fire statistics cited during the hearings concentrated more on buildings under construction rather than those completed with required R systems in place and occupied by residents. So the Committee concluded that the safeguards were adequate to continue to allow Group R occupancies in buildings of combustible construction.

We have submitted this Public Comment because we disagree with the Committee's reasons for recommending disapproval of this Code Change Proposal. We are asking the Class A voting members to overturn that recommendation for disapproval and then approve this Public Comment as submitted for Code Change G81-09/10.

It is interesting to note that in the Committee Reason the Committee expressed its concerns that the information provided by us at the hearings was mainly about property loss and not threats to the life safety of the occupants. But that was precisely our point. Section 101.3 Intent of Part 1 – Scope and Application of the IBC clearly states that: "The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through... safety to life and property from fire..." Thus, property protection is clearly part of the purpose of the IBC. And it is especially important where property losses affect the overall general welfare of the public which could be seriously harmed by the loss of a significant amount of the housing stock in this country due to fire. As we all know, there is already a shortage of affordable housing in this country, so it should be incumbent upon the IBC to provide a sufficient level of fire and life safety for residential occupancies to minimize property losses to those occupancies that result in the significant loss of available housing units or future housing units due to fires that occur during construction. If this Code Change is approved, it will, in effect, prohibit the construction of Group R occupancy buildings to a height of five stories and 75 feet using one of the nonrated types of construction, i.e. Type IIB and IIIB, with the installation of an NFPA 13 sprinkler system. However, currently Table 503 of the IBC with an NFPA 13R automatic sprinkler system height increase will allow Group R occupancy buildings to be constructed as high as four stories and 60 feet in Types IIB and IIIB construction. These allowable building heights are greater than allowed for any other occupancy classification regulated by the code for these types of construction. Clearly, this does not make any sense since Group R occupancies contain people who are staying overnight sleeping and are thus more vulnerable to fires occurring during the night.

Furthermore, we have researched the last several years of large loss fires reported by the National Fire Protection Association (NFPA) and have discovered a very alarming and disturbing trend in such fires involving three and four story Group R occupancies. It should be noted that NFPA defines a large loss fire as any fire resulting in at least \$5 million in property damage. In 2007 residential fires qualifying as large loss fires represented 11% of the number of large loss fires reported and 2% of the total loss with a reported loss for residential fires of \$78.5 million. In 2008 residential fires represented 17% of the large loss fires reported to the NFPA which resulted in 7.2% of the total loss with a reported loss of \$170.5 million for residential occupancies. Several of these fires involved residential occupancies protected with NFPA 13R sprinkler systems where the attics are allowed to remain unsprinklered, even though they are often constructed of combustible materials in these three and four story buildings as currently allowed by Table 503 of the IBC. And several of these fires occurred in buildings under construction which were to be sprinklered in accordance with NFPA 13R but burned down before the sprinkler system could be installed in an operational mode. Thus, a significant quantity of residential dwelling units and/or apartments have been lost in recent years in buildings allowed to be up to four stories in height of unprotected construction such as Type IIB and IIIB construction.

We should also point out that requiring these Group I-1 and R occupancies to be constructed of noncombustible construction with 2-hour fire-resistant separations between adjacent dwelling units and sleeping units will greatly improve the effectiveness of the NFPA 13R sprinkler systems allowed to be used in these buildings up to four stories in height. Such buildings will have a significantly higher degree of compartmentation and will not contain combustible concealed spaces such as attics which are not required to be sprinklered per NFPA 13R. But if the attics are constructed of noncombustible materials, then there is a significantly less likelihood that a fire starting in or spreading into the attic would cause any significant property damage. This, in turn, will result in reduced insurance costs and make the cost of living in residential occupancies more affordable. This will also better assure a stable and sustainable housing stock that is less likely to be lost in significant fires since the fire will in all probability be contained to the unit of origin.

It should be noted that we have performed cost comparison studies throughout various regions of the country to demonstrate that this type of construction is cost effective not only in the short term but also in the long term, as compared to more traditional wood frame construction for such residential type occupancies. So approving this Code Change as submitted will greatly increase the general public welfare and achieve significant reductions in the overall property losses associated with residential type occupancies due to fire. This can all be accomplished without any significant increase in the cost of construction of these residential type occupancies. Therefore, we respectfully request the Class A voting members overturn the Committee's recommendation for disapproval and approve this Public Comment.

Final Action:            AS                    AM                    AMPC \_\_\_\_\_            D

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**G83-09/10**  
**424 (New), Chapter 35**

**Proposed Change as Submitted**

**Proponent:** Edward L. Repic, Architectural Refuse Solutions, LLC, representing self

**Add new text as follows:**

**SECTION 424**  
**RUBBISH CHUTES, RUBBISH COMPACTORS & LAUNDRY CHUTES**

**424.1 General.** Rubbish and laundry chutes and rubbish compactors shall comply with the provisions of Section 424.1 through 424.7 and other applicable provisions of this code. Rubbish and laundry chutes shall comply with Sections 5.1 and 5.2 of NFPA-82. Rubbish compactors shall comply with Chapter 7 of NFPA-82.

**424.2 Chute diameter.** Chutes shall have a diameter of not less than 24 inches (610 mm). The diameter of the chute shall be maintained for the entire length of the chute.

**424.3 Chute materials.** The chute shall be constructed of aluminized steel, stainless steel, or galvanized steel of not less than 16 gage, (0.060 inches). The use of thinner materials shall be prohibited.

**424.4 Vent.** Chutes shall be provided with a vent of the same diameter of the chute. The vent shall extend through the roof. Reduced diameter vents shall be prohibited.

**Exception.** Subject to the approval of the building official, where the building configuration constrains the continuation of a round vent, a round-to-rectangular transition shall be used above the highest intake allowing the use of a rectangular vent of equivalent, clear cross-sectional area of the round chute being vented. The rectangular vent may either extend to the top of the vent, or where allowed by the building configuration, the vent shall transition from rectangular-to-round before penetrating the roof to create the vent.

**424.5 Shaft enclosure at rubbish and laundry chutes.** The shaft enclosure containing a rubbish or laundry chute shall comply with Sections 424.5.1 through 424.5.3.

**424.5.1 Single sided construction.** The chute shaft enclosure shall be of a listed construction that can be fully assembled in accordance with its approved design, including all required drywall taping when required by the design, from one side after the chute has been installed, regardless of the presence of bearing walls supporting floor framing.

**424.5.2 Identical floor and wall ratings.** A chute shaft enclosure shall provide the required fire protection rating over its entire length. Fire ratings shall not be lower at floor, ceiling or roof framing intersections.

**424.5.3 Extend shaft enclosure to roof.** The shaft enclosure shall extend to the underside of the roof. Structural framing members supporting the roof shall be outside of the chute shaft enclosure and shall not be permitted inside the shaft enclosure.

**424.6 Electric interlocks.** Where used, electric interlocks shall be normally engaged. They shall disengage at the door which is signaled to be open. In the event of loss of power, all interlocks shall be in the engaged position.

**424.6.1 Safety switch.** Electric interlock safety switch shall be provided in the discharge room to permit maintenance of the chute or chute accessories.

**424.6.2 Interconnection.** Electric interlocks where used with a rubbish compactor shall be interconnected to the power pack of the rubbish compactor to go off line in the event of an alarm notification from the compactor. Such required notifications shall include: container away, emergency shutoff engaged, pressure overload, motor overheating

**424.7. Rubbish compactors.** Rubbish compactor provisions included in Section 424.6.2 shall apply to all apartment style compactors.



**424.6.1 Power Pack. Power packs for apartment-style rubbish compactors shall be UL approved.**

**2. Add new standards to Chapter 35 as follows:**

**NFPA**

**82-2004 Gravity Waste or Linen Chutes**

**Reason:** This submittal is part of four such proposals submitted as independent documents with the intent of adequately addressing Trash Chutes (which can include “recycling” chutes that simply redirect parts of the trash waste stream to locations other than a landfill) and Linen (or Laundry) Chutes. These proposals individually address Life Safety, Sprinkler Placement, Accessibility in new and existing facilities, and actual Chute Construction and a related component to Rubbish Chutes: Compactors. Codes generally address the shaft enclosure but ignore the actual chute being enclosed or the compactor it is feeding.

To quote from an authoritative source:

*“Internationally, code officials recognize the need for a modern, up-to-date building code addressing the design and installation of building systems through requirements emphasizing performance. The International Building Code®, in this 2009 edition, is designed to meet these needs through model code regulations that safeguard the public health and safety in all communities, large and small. This comprehensive building code establishes minimum regulations for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs.”*

The following information seeks to address the design and installation of a two specific building systems, Rubbish & Laundry Chutes and Rubbish Compactors, to enhance the comprehensive aspects of this code in the full spirit of this quoted material from the Preface of your document. As manufacturers of Chutes and Compactors, with distributors throughout the United States, we see the problems a lack of minimum regulation creates on a daily basis for design professionals. Without regulation design professionals resort to the talent they know best: Design. The problem lies in the fact that they undertake that design function without the benefit of knowing what the industry has learned over the last 90 or so years.

This is not to say that guidelines do not exist. In fact, they do. However, the NFPA-82 document is not a referenced standard to this Code. We are not qualified to recommend the adoption of that entire document as the document addresses items other than chutes and compactors (incinerators, for instance) that are beyond our areas of expertise. We can, however, comment upon and even improve upon the basics included in NFPA-82.

We recommend the addition of certain portions of NFPA-82, namely:

- Sections: 5.1 General.
- 5.2 Gravity Waste or Linen Chutes
- Chapter 7 Waste Compactors

(Please note that the words “waste” and “linen” in NFPA-82 correspond to the words “rubbish” and “laundry” in the IBC)

These sections cover several chute-related topics: Design, materials, intakes, discharges, offsets, and vents

Per the “Editor’s Note” in section 424.1 These sections should be augmented in two ways:

First, we recommend the addition of certain provisions to NFPA-82 already presented/reasoned under separate proposals and obliquely referenced in Section 424.1, namely:

The Accessibility features outlined in our proposal for  
**1103.1, 1103.1.1 (new), 1103.1.2 (new);**

The Latching and Closing features outlined in our proposal for

**708.3.1 (new), 708.3.1.1 (new), 708.3.1.2 (new), 708.3.1.3 (new), 708.13.1, 708.13.3, 715.4.1 Exception (new), 715.4.2, 715.4.8, 715.4.8.1, and 715.4.8.3**

Secondly, we recommend other modifications outlined in provisions 424.2 through 424.7. Our reasons for these are as follows:

**424.2:** Diameter lays the foundation for a common problem in chute design: vent diameter which becomes the subject of the paragraph that follows: 424.3.

**424.3:** Addresses a problem created by some industry participants who publicly claim adherence to the provisions of NFPA-82 and falsely advertise their material thickness as 16 gage material while actually using 18 gage material. The problem most commonly occurs in Spiral Chute construction. Lighter gage material is used on the premise that 18 gage material is stronger than non-spiraled 16 gage material. This is probably true, but the reasoning is, nonetheless, fallacious. At issue are the burn-through properties of the materials. Physical strength of the material is meaningless beyond the ability of the chute to be supported as chutes convey waste materials; they do not “hold” anything. Again, the issues are Life Safety and Fire Prevention, not Structural Strength.

**424.4:** Presented are an option (the rectangular-equivalent concept) to permit chutes and their enclosing walls to be installed without structural interference. The importance of venting cannot be over estimated as it provides rapid relief of steam buildup in the event of sprinkler activation during a fire. This prevents the intake doors from being blown open, thereby exposing other smoke protection zones from becoming engaged in the fire.

**424.5 and subparagraphs:** The proposed additions are designed to overcome common mistakes that most commonly, but not exclusively, occur in wood frame structures. The single side construction concept is crucial as most fire wall designs require full fire taping on both sides of the wall. It is impossible to properly install all required fire taping on the inside surface of a chute enclosure because the chute is in place, as is the chute intake door. Wood framing also commonly creates problems with fire ratings at wall and floor intersection as well as at roof framing interferences.

**424.6 and sub paragraphs:** Electric interlocks are an extremely popular chute accessory that permits all doors to lock when one door is opened to avoid rubbish from above falling on a depositor below if two or more people are depositing waste at the same time. This is a pretty common occurrence as people tend to throw out their garbage after feeding times, causing back-ups at the intake doors. Some interlocks are manufactured in such a way that they actually energize a downward moving locking mechanism to engage when a door is opened. Said another way the interlocks are held in a retracted position by a spring and then forced down to close all the doors not in use. The problem is that these doors are not protected by the electric interlocks when power drops as it does in a fire emergency. Other manufacturers utilize a common power source ... gravity ... to engage their interlocks and retract a single interlock when the system is activated for a deposit at a specific location. In the power loss scenario, these interlocks are engaged and act as a back up system that protects the firewall penetration from unnecessary exposure in

the event of the latch failure scenario described in another proposal submitted as part of this whole chute discussion. The provisions of Section 424.6.2 is designed to provide protection to maintenance personnel in the event of compactor trouble and during the correction of that trouble.

**424.7 and sub paragraph:** Rubbish compactor provisions establishes the need to interconnect the electric interlock system and this common piece of equipment for the protection of both the equipment and the personnel involved. The UL standardization is a simple protective feature for building owners, residents, and maintenance personnel.

**Cost Impact:** The code change proposal will not increase the cost of construction.

**Analysis:** A review of the standard proposed for inclusion in the code, NFPA 82, for compliance with ICC criteria for referenced standards given in Section 3.6 of Council Policy #CP 28 will be posted on the ICC website on or before September 24, 2009.

ICCFILENAME: REPIC-G1-424 New

## **Public Hearing Results**

**Note:** The following analysis was not in the Code Change monograph but was published on the ICC website at <http://www.iccsafe.org/cs/codes/Documents/2009-10cycle/ProposedChanges/Standards-Analysis.pdf> :

**Analysis:** Review of the proposed new standard indicated that, in the opinion of ICC staff, the standard did comply with ICC standards criteria. . The standard is currently referenced in the IMC code change referenced the 2004 edition, however the 2009 was reviewed anticipating a modification request from the proponent.

**Committee Action:** **Disapproved**

**Committee Reason:** Without the modification that was offered by the proponent, the change would conflict with provisions approved by the Fire Safety Committee for inclusion in Chapter 7. The provisions regarding electrical interlocks are unclear regarding where the interlocks are to be provided.

**Assembly Action:** **None**

## **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Edward L. Repic, Architectural Refuse Solutions, LLC, requests Approval as Modified by this Public Comment.**

**Replace the proposal as follows:**

**715.4.8.3 Smoke-activated doors.** Automatic-closing doors installed in the following locations shall be automatic-closing by the actuation of smoke detectors installed in accordance with Section 907.3 or by loss of power to the smoke detector or hold-open device. Doors that are automatic-closing by smoke detection shall not have more than a 10-second delay before the door starts to close after the smoke detector is actuated:

*(Items 1 through 7 - No changed in the text.)*

8. Doors installed in ~~refuse and laundry chutes and~~ chute intake access rooms and termination rooms in accordance with Section 708.13.  
*(Items 9 through 11 – no change in the text.)*

**708.13.3 Refuse and laundry chute access rooms.** *(No change in the text).*

**708.13.3.1 Chute intake doors.** Chute intake doors installed in refuse and laundry chutes shall comply with the following:

1. The chute intake doors shall be automatic closing by the actuation of an approved automatic heat detector installed in the chute above the highest intake door and complying with the follo;
  - 1.1. The approved automatic heat detector shall be heat responsive to a maximum temperature of 135° F. (57° C.); and
  - 1.2. The heat detector shall be connected to the building's fire alarm control units where a fire alarm systems is required by Section 907.2. Detectors shall, upon actuation, perform the intended function and activate the alarm notification appliances or activate a visible and audible supervisory signal at a constantly attended location.
2. The chute intake doors shall be connected to an electronic interlock system complying with the following:
  - 2.1. The interlock system shall be normally engaged when the intake doors are in a closed position;
  - 2.2. The interlock system shall be provided with a manually controlled safety switch in the termination room;
  - 2.3. When a refuse compactor is utilized in conjunction with a refuse chute, the manually controlled safety switch shall be interconnected with the automatic alarm circuits of the refuse compactor that initiate compactor shutdown; and
  - 2.4. The interlock system components shall be labeled as appropriate for such systems. The interlock system shall utilize a Class 2, low-voltage circuit in accordance with NFPA 70.

**Commenter's Reason:** *TRASH & LINEN CHUTES ARE ONLY INSTALLED IN BUILDINGS WHERE PEOPLE SLEEP.* Few things are more disorienting than being awakened by a fire alarm and exiting through a darkened, smoke-filled corridor. While Codes do a good job of addressing chute enclosures, the chute itself is almost completely ignored. As chute manufacturers, Life Safety Enhancement of a chute installation for the

protection of its end users has become our core value. Nothing in this proposal will sell a single chute for us or anyone else. This proposal introduces applications of chute products and accessories common to all chute manufacturers. These applications are a compilation of the best information we have gained from our experiences and interactions with architects, builders, and fire marshals from across the entire country representing hundreds of installations.

#### FIRST, SOME CHUTE BACKGROUND IS IN ORDER:

Codes primarily discuss “fire doors” in terms of man doors. However, chute intakes are fire doors that have very different characteristics, functions and life safety impacts than man doors. This proposal begins with the intent of addressing those issues by differentiating between these two types of fire rated doors. Further, this proposal addresses the functional realities of the impact the provisions of Section 715.4.8.3 have on the safety of building maintenance personnel.

While both are fire doors, Chute Intake Doors must be differentiated from Man Doors for at least four major reasons ... each of which can have a critical impact on Life Safety:

1: Chute intake doors are part of a conveyance system (the vertical chute itself) that intersects every single fire containment zone through which that vertical chute passes. We have installed chutes in 60-story buildings. Except at stairwells, man doors simply separate one fire containment zone from another on the same floor.

2: Additionally, chute intake doors are subjected to far more use than most man-type fire doors. The labeled corridor door with a hold open device is closed infrequently ... maybe as little as once a year when it's inspected by a fire marshal. Labeled chute intake doors on each floor of a building with 20 units per floor can be used 20 times a day ... more than 7,000 times per year. In hospital environments we have doors utilized more than three times that often. The need for reliability under high use conditions is crucial, even in the absence of good maintenance because chute doors, like all fire doors, have as their primary purpose, the protection of a fire wall penetration.

3: Further, because refuse chutes use bottom hinged doors with vertical latches at the top of the door panel that extend into the door frame ... a *major* difference in hinge and latch positions from man doors ... the potential for failure during a fire emergency, especially in the presence of poor maintenance, is very high. Labeled chute intake doors can actually fall open, permitting fire to spread up the chute to the next poorly maintained door. There are many documented incidents of trash or laundry room (termination room) fires spreading up a poorly maintained chute five, ten or more stories and doing millions of dollars worth of property damage at incredible distances from the initial blaze location.

4: Finally, because chutes are gravity-driven conveyances, falling debris can reach incredible speeds: up to and including terminal velocity. This combination of mass and speed can create a clear and present danger to those responsible for chute or refuse compactor maintenance under a chute. The most common maintenance action is the replacement of full containers (usually attached to refuse compactors) with empty containers. Unless the intake doors are deactivated during these container changes, anyone dropping something down the chute can seriously endanger maintenance personnel. The use of the word “anyone” is accurate and appropriate when you consider that refuse chutes in residential buildings are typically designated as “General Access Chutes”... chutes open to the public ... by the provisions of NFPA 82 (the standard for waste and linen chutes which was adopted in November 2009 as part of this code).

#### SECONDLY, LET US LOOK AT THE PARTICULARS OF THIS PROPOSAL:

**Section 715.4.8.3, Item 8:** is modified to limit its application to Man Doors associated with the access rooms and termination rooms.

Section 708.13 provides requirements of trash and laundry chutes as a specific type of shafts. The new proposal contained in the public comment creates a new subsection within Section 708.13 to provide specific requirements for the small doors – or hatches – that provide access to the chutes. The intent of the provisions of the new 708.13.3.1 is as follows:

Sec. 708.13.3.1: Beginning text specifies what the following standards apply to.

Item #1. This Section directs that a heat detector instead of a smoke detector to address the fact that the environment of the chute interior is filled with dust and vapor that can negatively affect the performance of a smoke detector which is an ion-detection device. The substitution under these conditions is discussed in Section 907.2.3, Exception 2.3. The installation of a detector in the chute is found in NFPA 82 and is recommended because a fire in the chute can be very difficult to detect.

Item #1.1: This provision for the activating temperature of the heat detector is to insure that its alarm precedes the activation of the sprinkler system at which occurs at about 165° F. (73.8° C.). This provides an earlier warning and may also prevent or minimize the water damage common to sprinkler system activations.

Item #1.2: This provision serves two purposes: 1: Augmentation of the early warning mentioned above, and 2: rapid identification of the location of the fire. Chutes are not usually the first place people look for a fire.

Item 2 specifically requires an interlock system for the chute access doors and specifies how such system should operate and be built. It recognizes the fact that a component known in the chute industry as an “Electric Interlock” is required to meet the automatic-closing provisions of 715.4.8.3. All chute manufacturers offer electric interlocks as optional equipment for a different purpose. This information is necessary because no one in the chute industry actually installs electric interlocks as standard equipment.

To Clarify: Electric Interlocks (EI's) were designed by the chute industry as a safety feature to protect someone depositing waste or linen into a chute from being hit by materials being dropped from above. Electric interlocks typically include a latch bolt that is supplementary to the primary latch. In refuse chutes the primary latch is mounted in the top of the door panel and extends into the frame above. It is held in its extended position by a spring. In laundry chutes, which utilize side hinged doors, the primary latch extends into the door frame at the side of the door. In both door types, the latch bolt of the electric interlock is mounted in a box above the frame and extends down into the top of the door panel. It is activated by an electric solenoid. The solenoids are interconnected from floor-to-floor so that when one interlock is activated at the intake door of a given floor ... the remaining intake doors remain locked until the door in use signals it is closed. The act of closing activates a switch which resets the system. The system is controlled from a panel in the termination room that includes a manual, on-off safety switch

Item 2.1: Recognizes that gravity is a dependable, low-cost, power source that can be counted upon to hold the interlock system's latch bolts in place. This means that the solenoid is used to raise the activated latch bolt. It also means that in the event of a power loss (as can occur in a fire emergency when normal house power drops out as the emergency generator shunts into action) the interlock's latch bolt is in its latched position. This allows the interlock system to act as a reliable back-up for the primary latch bolt.

To Clarify: This redundancy is valuable because under certain circumstances, the intake door's closer can be disabled ... it actually loses its hydraulic fluid and the cylinder cover melts (at about 350°) ... and the spring holding the primary latch up loses its tension (at about 600°). In tandem, these events can result in the intake door falling open *during a fire*. We have actually demonstrated this under UL fire test conditions. We have also made a related proposal to the ICC (with UL's encouragement and assistance) that received committee approval last November. That proposal requires chute intakes doors, which, as fire doors must be self-closing and self-latching, to *remain* closed and to *remain* latched. The required electric interlock system with normally engaged interlocks provides a simple, safe and effective redundancy to the primary latch.

Item 2.2: Recognizes that the maintenance personnel in the termination room are at risk of injury from falling debris. It further recognizes that the addition of a manual control ... a simple ON-OFF switch ... is all that is needed to protect those people from unnecessary injury.

Item 2.3: Recognizes that refuse compactors are common to trash discharge (termination) rooms. It also recognizes that refuse compactors are commonly equipped with multiple, automatic alarm circuits (shut-off features) that protect maintenance employees from accidental compactor activation during servicing activities, i.e., access door open; container full; and/or motor overload.

To Clarify: The extension of two wires from the compactor's power pack to the automatic shut off switch for the Electric Interlocks is all that is necessary to deactivate the intake doors during any one of these compactor alarm events as a means of protecting employees from falling debris during servicing activities. This provision also reduces the potential for fire when a compactor has been filled, but not serviced. We have seen trash backed up as high as six stories in a chute. We have also seen buildings destroyed when kids decide to drop a lighted cigarette into backed-up chutes as a "joke".

Item 2.4: Establishes a safety standard for the electric interlock circuit in that it is low-voltage (typically 12 or 24 volt), installed in conformance with the provisions of the National Electrical Code (NEC), and provided with tested product components for the safety of the end users. The low voltage condition also provides: 1: ease of installation (conduit is not required for Class 2 circuits); 2: lower electrical operating costs; and 3: protection for the end user or repair personnel from accidental electrocution.

In terms of component labeling, we believe that UL 508 which addresses "Industrial Control Equipment" and, more specifically to that category, "Definite Purpose Controllers" might be a good reference. In the instance of electric interlocks, the definite purpose is Life Safety. The electric interlock is an assembly of several listed components mounted in a box on the top frame of an individual door, which has been assembled to UL 508 manufacturing criteria. The interlock assembly becomes part of a "system" when connected to other components assembled to UL 508 criteria whether they are door interlocks on other floors, heat or smoke detectors, or refuse compactor control panels, or any combination thereof, designed to close the doors for the protection of users and/or maintenance personnel.

**Analysis:** The standard, UL 508, is already a referenced standard in the *International Mechanical Code* and *International Residential Code*.

Final Action:            AS                    AM                    AMPC\_\_\_\_\_            D

G83-Revised 3/2.doc

## **G85-09/10**

### **503.1, Table 503, 507.1**

#### **Proposed Change as Submitted**

**Proponent:** Rick Thornberry, PE, The Code Consortium, Inc., representing self.

#### **Revise as follows:**

**503.1 General.** The building height and area shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified ~~hereafter~~ by Sections 503.1.1 through 503.1.5 and Sections 504, 506.2 and 506.3. Each portion of a building separated by one or more fire walls complying with Section 706 shall be considered to be a separate building.

**503.1.1 Special industrial occupancies.** Buildings and structures designed to house special industrial processes that require large areas and unusual building heights to accommodate craneways or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the building height and area limitations of Table 503.

**503.1.2 Buildings on same lot.** Two or more buildings on the same lot shall be regulated as separate buildings or shall be considered as portions of one building if the building height of each building and the aggregate building area of the buildings are within the limitations of Table 503 as modified by Section 504 and 506. The provisions of this code applicable to the aggregate building shall be applicable to each building.

**503.1.3 Type I construction.** Buildings of Type I construction permitted to be of unlimited tabular building heights and areas are not subject to the special requirements that allow unlimited area buildings in Section 507 or unlimited building height in Sections 503.1.1 and 504.3 or increased building heights and areas for other types of construction.

**503.1.4 Unlimited area buildings.** The area of buildings complying with Section 507 shall not be limited by Table 503.  
**503.1.5 Special provisions.** The height and area of buildings complying with Section 509, as applicable, shall not be limited by Table 503.

**TABLE 503**  
**ALLOWABLE BUILDING HEIGHTS AND AREAS<sup>a</sup>**  
(Portions of Table not shown remain unchanged)

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m<sup>2</sup>

A = building area per story. S= stories above grade plane, UL = Unlimited, NP = Not permitted.

- a. See the following sections for general exceptions to Table 503:
  - 1. ~~Section 504.2, Allowable building height and story increase due to automatic sprinkler system installation.~~
  - 2. ~~Section 506.2, Allowable building area increase due to street frontage.~~
  - 3. ~~Section 506.3, Allowable building area increase due to automatic sprinkler system installation.~~
  - 4. ~~Section 507, Unlimited area buildings.~~
- b. ~~a.~~ For open parking structures, see Section 406.3.
- c. ~~b.~~ For private garages, see Section 406.1.
- d. ~~c.~~ See Section 415.5 for limitations.

**507.1 General.** The area of buildings of the occupancies and configurations specified herein shall not be limited by Table 503.

**Reason:** This code change proposal is editorial. Basically, it deletes Footnote a from Table 503 and incorporates it into the text of the code. We believe that code requirements are better addressed in the body of the code rather than as footnotes to a table unless the footnotes are very specific to the table and not general in nature. However, Footnote a is somewhat broad and can be better handled, in our opinion, by relocating the text to Section 503.1 and making a clarification to Section 507.1. And in order to make Section 503.1 more comprehensive regarding how Table 503 is intended to regulate the allowable building heights and areas, we have incorporated new Subsection 503.1.4 addressing unlimited area buildings regulated by Section 507 and Subsection 503.1.5 Special Provisions regulating heights and areas of buildings complying with Section 509. Thus, the user of the code can find all he or she needs to know regarding the determination of building height and area limitations based on the application of Table 503 and the cases where modifications and/or exceptions are made to that table in accordance with the applicable provisions of the sections referenced in Section 503.1 including its subsections.

The proposed revision to Section 507.1 merely correlates with the revisions made to Section 503.1 to indicate that the building area is not limited by Table 503 for these unlimited area buildings.

In conclusion, we believe that these editorial revisions will provide for better code interpretation, application, and enforcement.

**Cost Impact:** The code change proposal will not increase the cost of construction.

ICCFILENAME: Thornberry-G1-503

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee disapproved the proposal, preferring the existing format of footnotes which quantify and limit the application of Table 503. The phrasing of Section 503.1 was awkward and unclear. Section 503.1.5 is misleading regarding the interaction of Table 503 and Section 509.1

**Assembly Action:**

**None**

### **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Rick Thornberry, PE, The Code Consortium, Inc., representing self, requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**503.1 General.** The building height and area shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified by Sections 503.1.1 through 5.3.1.53, and Sections 504, 506.2 and 506.3. Each portion of a building separated by one or more fire walls complying with Section 706 shall be considered to be a separate building.

**503.1.1 Special industrial occupancies.** (No change in text.)

**503.1.4 503.1.2 Unlimited area buildings.** The area of buildings complying with Section 507 shall not be limited by Table 503.

**503.1.5 503.1.3 Special provisions.** The height and area of buildings complying with Section 509.5 or Section 509.6, as applicable, shall not be limited by Table 503.

**503.1.2 503.1.4 Buildings on same lot.** Two or more buildings on the same lot shall be regulated as separate buildings or shall be considered as portions of one building if the building height of each building and the aggregate building area of the buildings are within the limitations of Table 503 as modified by Section 504 and 506. The provisions of this code applicable to the aggregate building shall be applicable to each building.

**503.1.3 503.1.5 Type I construction.** Buildings of Type I construction permitted to be of unlimited tabular building heights and areas are not subject to the special requirements that allow unlimited area buildings in Section 507 or unlimited building height in Sections 503.1.1 and 504.3 or increased building heights and areas for other types of construction.

*(Portions of proposal not shown remain unchanged)*

**Commenter's Reason:** We believe that the revisions proposed in this Public Comment to revise our original code change proposal G85-09/10 respond to some of the IBC General Committee's concerns expressed during the hearings when the Committee recommended disapproval. The revisions clarify any direct references to the sections in Chapter 5 that modify Table 503 for height and area. This will eliminate regulation by the footnotes in Table 503 and instead rely directly upon the code text for those sections that are intended to modify Table 503 for determining the maximum allowable building height and area.

Final Action:                    AS                    AM                    AMPC \_\_\_\_\_                    D

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## **G86-09/10**

### **503.1.4 (New)**

#### **Proposed Change as Submitted**

**Proponent:** Sarah A. Rice, C.B.O., representing self

**Add new text as follows:**

**503.1.4 Occupancies on roofs.** Open-air roofs occupied by an occupancy different than the primary occupancy of the building shall not be required to be taken into account when determining the minimum type of construction for the building when the means of egress system from the open-air roof complies with Chapter 10.

**Exception:** Open-air roofs of buildings of Groups A, B, E, F-2, I, M, R and S-2 occupancies shall not be occupied by Group S-1, F-1 or H occupancies.

**Reason:** Occupied roof gardens, pool levels and similar uses are literally classified as Group A-3 occupancies but the hazard they present to the building is minimal. So this change proposes that even though their occupancy is Group A-3 (assembly) for determining the minimum level of means of egress from that level, the building not be penalized for their location.

Should a fire incident occur, the very openness of the space will provide venting of any smoke or hot gases that may be generated, in other words it will offer the perfect smoke control system.

**Cost Impact:** The code change proposal will not increase the cost of construction.

ICCFILENAME: RICE-G6-503.1.4.doc

#### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal is written too broadly and would have a greater impact than the issues discussed by the proponent. At the same time the proposal doesn't really resolve the issues raised. Chapter 9 requires floors below an assembly occupancy to be sprinkler protected, such would not be guaranteed by this proposal. Reference to the means of egress requirements is redundant. This might be more acceptable if it specifically addressed the height and area issues and didn't try to redefine an occupancy.

**Assembly Action:**

**None**

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## **Individual Consideration Agenda**

This item is on the agenda for individual consideration because a public comment was submitted.

### *Public Comment:*

**Sarah A. Rice, CBO, The Preview Group, representing self, requests Approval as Modified by this Public Comment.**

Modify the proposal as follows:

**503.1.4 Occupancies on roofs.** ~~Open-air roofs occupied by classified as a Group A-3 occupancy an occupancy different than the primary occupancy of the building shall not be required to be taken into account when determining the minimum type of construction for the building when the means of egress system complies with Chapter 10 from the open-air roof to the public way, and the building is equipped with an automatic sprinkler system in accordance with Section 903.1.1 or 903.1.2 complies with Chapter 10.~~

~~**Exception:** Open-air roofs of buildings of Groups A, B, E, F-2, I, M, R and S-2 occupancies shall not be occupied by Group S-1, F-1 or H occupancies.~~

**Commenter's Reason:** The Committee Reason stated that "The proposal is written too broadly" and that "Chapter 9 requires floors below an assembly occupancy to be sprinkler protected." In response to these concerns the scope of the original proposal has been modified so to only address the occupancy which initially prompted the code change, open-air roofs with roof gardens, patios, swimming pools, and other similar functions – Group A-3 occupancies.

The hazards typically associated with open-air assembly spaces are those that are related to the means of egress from such spaces. Thus this provision would require that the means of egress from the open-air roof must comply with Chapter 10 for the Group A-3 occupancy, regardless of the occupancy(s) in the rest of the building, and that it be maintained from the roof to the public way. In addition the building on top of which these open-air assembly spaces would be located is required to be sprinklered.

Final Action:                    AS                    AM                    AMPC\_\_\_\_                    D

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## **G87-09/10**

### **503.1.4 (New)**

## **Proposed Change as Submitted**

**Proponent:** Ken Kraus, Los Angeles Fire Department

**Add new text as follows:**

**503.1.4 Occupancy location.** An occupancy shall not be located above the story or height limit set forth in Table 503. Where Section 504.2 allows modifications to limits of Table 503, occupancies shall not located above the additional story or increased height limit.

**Reason:** This proposed addition to the Code is intended to clearly disallow the occupancy of roof areas and stories above the height and story limits prescribed in Table 503 and Section 504.2.

As written, the code can be misapplied if areas above the floor level of the highest story allowed (roof and floor surfaces) are considered part of the highest story allowed for occupant use.

This is due to misinterpretation of the definition of Story which states, in part "The portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above".

**Cost Impact:** The code change proposal will not increase the cost of construction.

ICCFILENAME: KRAUS-G1-503.1.4

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee felt this proposal was the opposite extreme from G86-09/10 and was too restrictive. The committee would like to see something in the middle ground between the two code changes.

**Assembly Action:**

**None**

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## Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

*Public Comment:*

**Jason Thompson, representing National Concrete Masonry Alliance (NCMA), Masonry Alliance for Codes and Standards (MACS), requests Approval as Modified by this Public Comment.**

Replace the proposal as follows:

503.1.4 Allowable height of occupancies. No occupancy shall be located above the maximum allowable building height for that occupancy as determined by Table 503 for the type of construction of the building including any height increases allowed by Sections 504.2, 509.5 and 509.6.

**Commenter's Reason:** We are submitting this Public Comment because we agree with the proponent's intent to limit the height of occupancies in buildings based upon the building's type of construction and the maximum allowable heights allowed for that type of construction for the occupancy that would be located therein. However, we believe that the requirement can be better stated as indicated by the substitute language for the proposed new Section 503.1.4 Allowable Height of Occupancies. We believe the revised text makes it clear that no occupancy is allowed to be located above the maximum allowable building height which includes both number of story limits and height limits in feet above grade plane for the specific occupancy as determined using Table 503 for the type of construction of the building with any allowable height increases included based on the height increases in Sections 504.2, 509.5 and 509.6.

We believe this is totally consistent with the intent of the code for regulating the allowable height and area of buildings containing various occupancies. This is reinforced by requirements in Section 508.2.3 Allowable Building Height and Area which applies to accessory occupancies. In fact, this section would limit the accessory occupancy height to that of the tabular values in Table 503 without any increases allowed in accordance with Section 504. Of course, this is a more specific requirement so it would take precedence over the more general requirement in this new Section 503.1.4.

Section 508.3.2 Allowable Building Area and Height applies to the nonseparated occupancies option for mixed use and occupancy buildings. It states "The allowable building area and height of the building or portion thereof shall be based on the most restrictive allowances for the occupancy groups under consideration for the type of construction of the building in accordance with Section 503.1."

And, finally, Section 508.4.3 Allowable Height which applies to the separated occupancies option for mixed use in occupancy buildings states: "Each separated occupancy shall comply with the building height limitations based on the type of construction of the building in accordance with Section 503.1." It also has an Exception for the special provisions permitted by Section 509 which include Sections 509.5 and 509.6 noted in the proposed new Section 503.1.4.

But common sense should also apply since the allowable building height based on Table 503 with any increases allowed is determined by not only the type of construction of the building but also by the occupancy of the building. This certainly implies that no occupancy should be located to a height greater than that allowed by Table 503 (with any appropriate increases allowed for the building height) based on the building's type of construction. This proposed new section simply states the obvious and correlates with the other requirements in the code for those sections previously noted above. Therefore, we encourage the Class A voting members to overturn the Committee recommendation for disapproval and approve this Code Change Proposal as modified by this Public Comment.

Final Action: AS AM AMPC D

### G89-09/10 Table 503

#### Proposed Change as Submitted

**Proponent:** Jason Thompson, National Concrete Masonry Association, representing the Masonry Alliance for Codes and Standards

Revise as follows:

**TABLE 503  
ALLOWABLE HEIGHT AND BUILDING AREAS<sup>a</sup>**

GROUP	HEIGHT (feet)	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
		UL	160	65	55	65	55	65	50	40
		<b>STORIES (S) AREA (A)</b>								
R-1	S	UL	11	4	4-3	4	4-3	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-2	S	UL	11	4	4-3	4	4-3	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-4	S	UL	11	4	4-3	4	4-3	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000



(Portions of table and footnotes not shown remain unchanged.)

**Reason:** One area of concern identified for study by the ICC Code Technology Committee's Height and Area Study Group was 4 and 5 story buildings of non-fire-resistance-rated types of construction. The table below shows the occupancies in the 2006 International Building Code (IBC) where that condition existed for sprinklered buildings of Types IIB and IIIB construction. In addition, the table shows the sprinklered height allowances for these occupancies in the legacy codes.

**Type IIB and Type IIIB Construction  
Story Comparison (w/ NFPA 13 Sprinkler System)**

	SBC	NBC	UBC	2006 IBC
<b>B</b>	5	4	2	<b>5</b>
<b>F-2</b>	4	4	2	<b>4</b>
<b>M</b>	5	3	2	<b>5</b>
<b>S-1</b>	4	3	2	<b>4</b>
<b>S-2</b>	4	4	2	<b>5</b>
<b>R* (NFPA 13)</b>	5	4	4	<b>5</b>
<b>R* (NFPA 13R)</b>	4	4	3	<b>4</b>

\* - Applies for R-1, R-2 and R-4 Use Groups

The Study Group noted that for Use Group B, M, S-1, and R buildings of Type IIB and Type IIIB construction, the allowance for 4 or 5 stories in the IBC was premised on the story heights allowed in the SBCCI Standard Building Code (SBC). In all these instances, the SBC sprinklered height allowance for those Use Groups was based on a multiple story sprinkler increase. For example, for Use Group R, the SBC allowed 2 stories for unsprinklered construction and 5 stories for sprinklered construction. This exceeded the consistent one story sprinkler height increase incorporated in the IBC height and area provisions. Based on this review, the Study Group identified two anomalies from what was permitted by the legacy codes. First, the story height allowance for S-2 use groups was not based on any of the legacy code allowances. Second, for Use Groups B, M, S-1, and R in Types IIB and IIIB construction, the IBC story height allowance for unsprinklered buildings exceeded what was allowed by any of the legacy codes. For example, the largest height allowed for an unsprinklered Type IIB construction apartment building (Group R-2 occupancy) in any of the legacy codes was the BOCA National Building Code (NBC) allowance for 3 stories. Currently, the IBC allows 4 stories for this condition. Rather than modify the sprinkler increase in the IBC, the Study Group suggested the following recommended story heights for Table 503:

**Unsprinklered 2006 IBC Table 503 Values (Revised)**

Use Group	IIB	IIIB
<b>B</b>	3	3
<b>M</b>	2	2
<b>S-1</b>	2	2
<b>S-2</b>	3	3
<b>R*</b>	3	3

\* - Applies for R-1, R-2 and R-4 Use Groups

In essence, these reductions would eliminate the anomalies created by the multi-story SBC sprinkler increase and drop the IBC values back to the next least restrictive legacy code (in these cases, the NBC). It should be noted that during the ICC Final Action Hearings in Minneapolis for the last code cycle, all of the code changes submitted by the Study Group to reduce the allowable story heights were approved by the ICC Class A voting members with a greater than two-thirds majority vote except for one. That one was Code Change G118-07/08 which is identical to this code change proposal. Although the voting members were able to overturn the Committee's recommendation for disapproval, the code change was subsequently disapproved because the two-thirds (67%) majority vote could not be achieved. The final vote was 243 in favor and 163 opposed (60%). Since a significant majority of the Class A voters wanted to see that code change approved, the change is being resubmitted for reconsideration by the IBC General Committee.

Although the proposal will reduce the allowable height of Group R buildings of Types IIB and IIIB construction by one story, the maximum area (total of all stories) of the tallest building that will then be permitted will generally still be considerably greater than that permitted by any of the legacy codes (see table below). For example, consider a residential building (Group R occupancy) of Type IIB construction, which does not have an NFPA 13 sprinkler system, with a height of 3 stories; the tallest permitted by any of the legacy codes. If less than 20 feet of open space is provided around the building, the IBC permits the total area of all three stories to be 108% greater than the largest total area permitted by the legacy codes. If the width of the open space is increased to 40 feet, the IBC's total area allowed is still 27% greater than the largest area allowed by any of the legacy codes. If an NFPA 13 sprinkler system is provided in a Group R residential building of Type IIB construction, the height of the building can be increased to four stories. If the building has less than 20 feet of open space, the maximum area allowed by the IBC is 50% greater than the largest area allowed by any of the legacy codes. Although allowable heights are proposed to be reduced, the foregoing illustrates that residential buildings will still be able to have total areas that are comparable to or greater than that permitted by the largest areas allowed by any of the legacy codes.

It should be noted that this proposal has no impact on residential buildings equipped with NFPA 13R or NFPA 13D sprinklers since they are not currently allowed to use the height increase for sprinklers.

Occupancy Group	Type of Construction	NFPA 13 Sprinklers - Yes/No	Width of Open Space (ft.) <sup>a, b</sup>	Ratio of IBC Maximum Building Area to the Largest Maximum Building Area Permitted by Legacy Codes				
				Number of Stories				
				1	2	3	4	5
R-1 R-2 R-4	IIB	No	< 20	1.33	1.33	2.08	NPLC	NP
			40	1.17	1.17	1.27	NPLC	NP
		Yes	< 20	1.78	1.67	2.00	1.50	1.20
	IIIB	No	< 20	1.33	1.33	2.08	NPLC	NP
			40	1.17	1.17	1.27	NPLC	NP
		Yes	< 20	1.78	1.67	2.00	1.50	1.20
			40	1.39	1.39	1.67	1.25	1.00

NPLC means not permitted by any of the legacy codes, but permitted by the IBC.

NP means not permitted by any of the legacy codes or the IBC.

If this code change is approved, building heights represented by shaded cells will not be permitted by the IBC.

a. Width of open space around 100% of building perimeter.

b. 40 feet was used because the ICBO Uniform Building Code (UBC) required a minimum 40 feet of open space on all sides of the building in order to qualify for a 100% area increase; the maximum permitted by that code. The NBC and SBC permitted maximum open space increases of 150% and 100%, respectively, at 30 feet.

**Cost Impact:** The code change proposal will increase the cost of construction.

ICCFILENAME: Thompson-G2-T503

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proponent did not provide technical information justifying the reduction of allowable height for these occupancies. The information that was provided was about property loss, not threats to life safety of the occupants.

**Assembly Action:**

**None**

## **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Jason Thompson, National Concrete Masonry Alliance (NCMA), representing Masonry Alliance for Codes and Standards (MACS), requests Approval as Submitted.**

**Commenter's Reason:** We are submitting this Public Comment to our Code Change G89-09/10 requests Approval as submitted because we believe the ICC Class A voting members should have the opportunity to once again vote on this very important issue regarding the reduction by one story of the story height limits in Table 503 for Group R occupancies in buildings of Types IIB and IIIB construction. Approval of this Public Comment will also close the last chapter in the ICC Code Technology Committee's Height and Area Study Group's efforts to revise the height and area requirements of the International Building Code (IBC). The Group R occupancies are the only occupancy classification that did not achieve the two-thirds majority vote needed to approve the series of Code Changes submitted by the Study Group to reduce the allowable story heights for buildings of Types IIB and IIIB construction.

As noted in our Reason Statement for this Code Change, the vote taken during the last ICC Final Action Hearing to overturn the IBC General Code Development Committee's recommendation for disapproval fell slightly short of the two-thirds majority needed by a vote of 243 in favor to 163 opposed for a 60% majority vote. Clearly, this is a significant majority but not enough to achieve that necessary to be successful at the ICC Final Action Hearings. Once again, the IBC General Code Development Committee has recommended this Code Change for disapproval but on a much closer vote of 7 to 5. Thus, we believe the Class A voting members should have this one last chance to complete the ICC Code Technology Committee's Height and Area Study Group Code Change packet to make the building height limits in Table 503 more consistent in relationship to the relative hazards of the other occupancy classifications for the 2012 edition of the IBC. This will be our only opportunity to accomplish such a revision until the next 3 year code cycle for the 2015 edition.

Contrary to the Committee's Reason Statement that no technical information was provided to justify the proposed reduction in the allowable height for these Group R occupancies, we believe that our Reason Statement contains substantial technical justification.

Furthermore, we have researched the last several years of large loss fires reported by the National Fire Protection Association (NFPA) and have discovered a very alarming and disturbing trend in such fires involving three and four story Group R occupancies. It should be noted that NFPA defines a large loss fire as any fire resulting in at least \$5 million in property damage. In 2007 residential fires qualifying as large loss fires represented 11% of the number of large-loss fires reported and 2% of the total loss with a reported loss for residential fires of \$78.5 million. In 2008 residential fires represented 17% of the large loss fires reported to the NFPA which resulted in 7.2% of the total loss with a reported loss of \$170.5 million for residential occupancies. Several of these fires involved residential occupancies protected with NFPA 13R sprinkler systems where the attics are allowed to remain unsprinklered, even though they are often constructed of combustible materials in these three and four story buildings as allowed by Table 503 of the IBC. And several of these fires occurred in buildings under construction which were to be sprinklered in accordance with NFPA 13R but burned down before the sprinkler system could be installed in an operational mode. Thus, a significant quantity of residential dwelling units and/or apartments have been lost in recent years in buildings allowed to be four stories in height of unprotected construction such as Type IIB and IIIB construction.

By reducing the allowable story heights for these types of construction from four stories to three stories, it would only be possible to utilize an NFPA 13R sprinkler system to allow the buildings to be increased in height to four stories. However, buildings greater than four stories in height would be required to be protected with an automatic sprinkler system designed in accordance with NFPA 13 which mandates protection of combustible attic spaces with sprinklers. This would significantly reduce the likelihood of a large-loss fire occurring in these buildings should the fire get into the attic space.

It is interesting to note that in the Committee Statement the Committee expressed its concerns that the information provided by us at the hearings was mainly about property loss and not threats to the life safety of the occupants. But that was precisely our point. Section 101.3 Intent of Part 1 – Scope and Application of the IBC clearly states that: "The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through... safety to life and property from fire..." Thus, property protection is clearly part of the purpose of the IBC. And it is especially important where property losses affect the overall general welfare of the public which could be seriously harmed by the loss of a significant amount of the housing stock in this country due to fire. As we all know, there is already a shortage of affordable housing in this country, so it should be incumbent upon the IBC to provide a sufficient level of fire and life safety for residential occupancies to minimize property losses to those occupancies that result in the significant loss of available housing units or future housing units due to fires that occur during construction. If this Code Change is approved, it will, in effect, prohibit the construction of Group R occupancy buildings to a height of five stories

and 75 feet using one of the nonrated types of construction, i.e. Type IIB and IIIB, with the installation of an NFPA 13 sprinkler system. However, currently Table 503 of the IBC with an NFPA 13R automatic sprinkler system height increase will allow Group R occupancy buildings to be constructed as high as four stories and 60 feet in Types IIB and IIIB construction. These allowable building heights are greater than allowed for any other occupancy classification regulated by the code for these types of construction. Clearly, this does not make any sense since Group R occupancies contain people who are staying overnight sleeping and are thus more vulnerable to fires occurring during the night.

It should also be pointed out that there is another anomaly in Chapter 5 as it relates to determining the maximum allowable building area based on automatic sprinkler system protection being provided. Exception 2 to Section 506.4.1 Area Determination allows a four story Group R occupancy building protected with an automatic sprinkler system designed in accordance with NFPA 13R to have its maximum building area determined by multiplying the allowable area per story as determined by Section 506.1 by the number of stories above grade plane. That means that the allowable building area could be four times that allowed for a single story building. This should be compared to the maximum building area allowed for all other occupancy buildings sprinklered in accordance with NFPA 13 which by Item 2 of Section 506.4.1 are only allowed to be three times that allowed for the single story building area for any building three or more stories in height above grade plane. Thus, a Group R occupancy sprinklered with an NFPA 13R sprinkler system (which is not a true property protection system) is allowed to have a greater total building area than a Group R occupancy building, or any other occupancy building for that matter, protected with an NFPA 13R sprinkler system which is both a life safety and a property protection system. So there is less of an incentive to install an NFPA 13 sprinkler system in Group R buildings that are four stories in height.

We intend to provide the Class A voting members at the ICC Final Action Hearings in Dallas with a more detailed analysis of the large loss fire statistics for Group R residential occupancies to support this Code Change Proposal from a property loss/loss of housing stock perspective which we believe is significant and which we believe this Code Change will help to mitigate. Therefore, we urge the Class A voting members to overturn the Committee's recommendation for disapproval and vote for approval as submitted of this Code Change G89-09/10.

Final Action: AS AM AMPC\_\_\_\_\_ D

## G90-09/10

### Table 503

#### Proposed Change as Submitted

**Proponent:** A. Hal Key, PE, Mesa, AZ Fire Department

**Revise as follows:**

**TABLE 503  
ALLOWABLE BUILDING HEIGHTS AND AREAS<sup>a</sup>**  
**Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.  
 Building area limitations shown in square feet, as determined by the definition of "Area, building," per story**

GROUP	Height(feet) STORIE(S) AREA (A)	TYPES OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
		UL	160	65	55	65	55	65	50	40
S-1 <sup>e</sup>	S	UL	11	4	2	3	2	4	3	1
	A	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929m<sup>2</sup>.

A = building area per story, S = stories above grade plane, UL = Unlimited, NP = Not permitted.

- a. See the following sections for general exceptions to Table 503:
  1. Section 504.2, Allowable building height and story increase due to automatic sprinkler system installation.
  2. Section 506.2, Allowable building area increase due to street frontage.
  3. Section 506.3, Allowable building area increase due to automatic sprinkler system installation.
  4. Section 507, Unlimited area buildings.
- b. For open parking structures, see Section 406.3.
- c. For private garages, see Section 406.1.
- d. See Section 415.5 for limitations.
- e. For aircraft hangars, see Section 412.2.

*(Portions of table not shown remain unchanged)*

**Reason:** During the last cycle, changes were made to Section 412.2 classifying aircraft hangars by the NFPA 409 classifications to determine the fire suppression requirements. These changes created area limitations that a user of the Building Code may not find without going to Section 412.2. The addition of footnote "e" sends the user of the Building Code to this section similarly to other footnotes found in this table.

**Cost Impact:** The code change proposal will not increase the cost of construction.

ICCFILENAME: KEY-G1-TABLE 503.doc

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** Committee felt the added reference was not needed because designers and building officials would find the aircraft use special provisions without the assist of this footnote. Committee members expressed concern of starting another laundry list of references.

**Assembly Action:**

**None**

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### Individual Consideration Agenda

**This item is on the agenda for individual consideration because public comments were submitted.**

#### *Public Comment 1:*

##### **A. Hal Key, PE, representing self, requests Approval as Submitted.**

**Commenter's Reason:** The committee disapproved this proposal for the following reason: "Committee felt the added reference was not needed because designers and building officials would find the aircraft use special provisions without the assist of this footnote. Committee members expressed concern of starting another laundry list of references." I disagree with the committee's statement. There already is list with footnotes b and c for Group S-2 occupancies and footnote d for Group H occupancies. This pointer to Chapter 4 is necessary so the designer knows to also look in Chapter 4 for area requirements contained there. Without this footnote, the designer may use only the area limits from Table 503 without realizing that Section 412.2 also limits the area of an aircraft hangar based on its classification as an aircraft hangar and the type of fire protection system installed in that hangar. In fact, none of the S-1 area limitations in Table 503 apply to an aircraft hangar. All the area limitations are now contained in Section 412.2. Note that all aircraft hangars are now S-1 occupancies with the 2009 Edition of the IBC. There are no longer aircraft hangars that are S-2 occupancies. The designer could be severely misled on the area limitations listed in Table 503 for just an S-1 occupancy.

Aircraft hangars are one of those occupancies that are not built very often and as a result most designers will go to the IBC and research this occupancy and not find all the references to it without some help. This proposal is intended to assist both the "once and a while" aircraft hangar designer and the code official in locating the requirements for this special occupancy.

#### *Public Comment 2:*

##### **David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects, requests Approval as Modified by this Public Comment.**

**Replace the proposal as follows:**

**TABLE 503**  
**ALLOWABLE BUILDING HEIGHTS AND AREAS<sup>a, b</sup>**  
**Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.**  
**Building area limitations shown in square feet, as determined by the definition of "Area, building," per story**  
*(Remove all footnotes from body of table)*

- a. See the following sections for general exceptions to Table 503:
  - 1. Section 504.2, Allowable building height and story increase due to automatic sprinkler system installation.
  - 2. Section 506.2, Allowable building area increase due to street frontage.
  - 3. Section 506.3, Allowable building area increase due to automatic sprinkler system installation.
  - 4. Section 507, Unlimited area buildings.
- b. ~~For open parking structures, see Section 406.3.~~ See Chapter 4 for specific exceptions to the allowable height and areas in Chapter 5.
- c. ~~For private garages, see Section 406.1.~~
- d. ~~See Section 415.5 for limitations.~~

**Commenter's Reason:** This code change was intended to add a reference note sending the code user to the criteria for aircraft hangers that had been added to the code and placed in Chapter 4. The concern expressed by the committee in rejecting this proposed change was that a list of various conditions would be created. They are right, but lacking a general reference to Chapter 4 exceptions to height and area, the code user would not know that such exceptions exist or that they are exceptions in the first place. This change will send the code user to Chapter 4 for all special occupancy conditions.

Final Action:            AS                    AM                    AMPC \_\_\_\_\_            D

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# G91-09/10

## 504.2

### Proposed Change as Submitted

**Proponent:** Jason Thompson, National Concrete Masonry Association, representing the Masonry Alliance for Codes and Standards

**Revise as follows:**

**504.2 Automatic sprinkler system increase.** Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum height is increased by 20 feet (6096 mm) and the maximum number of stories is increased by one story. These increases are permitted in addition to the area increase in accordance with Sections 506.2 and 506.3. ~~For Group R buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum height is increased by 20 feet (6096 mm) and the maximum number of stories is increased by one story, but shall not exceed four stories or 60 feet (19 288 mm), respectively.~~

#### **Exceptions:**

1. Buildings, or portions of buildings, classified as a Group I-2 occupancy of Type IIB, III, IV or V construction.
2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.
3. *Fire-resistance rating* substitution in accordance with Table 601, Note d.

**Reason:** This code change proposes to eliminate the special allowances given for Group R occupancy buildings that are protected with an NFPA 13R automatic sprinkler system as specified in Section 903.3.1.2. Currently, Section 504.2 will allow an increase in the building height of one story and 20 feet where an NFPA 13R sprinkler system is provided, as long as the building does not exceed a total height of four stories or 60 feet. Furthermore, Section 506.4 allows an area increase for the installation of an NFPA 13R sprinkler system for Group R buildings that are greater than three stories in height. It is not appropriate to provide for both an allowance of an area increase and height increase for the types of construction. Where an NFPA 13R sprinkler system is installed the net result in the overall level of safety is a lessening of the passive built-in fire resistance that would be required if one of the NFPA 13R reductions (area or height) were not permitted.

NFPA 13R sprinkler systems primarily provide for life safety in buildings. They were developed for that purpose as clearly stated in Section 1.2 of the 2002 edition of the standard. It is interesting to note the Annex A discussion of the purpose of NFPA 13R which states: "Various levels of sprinkler protection are available to provide life safety and property protection. This standard is designed to provide a high, but not absolute, level of life safety and a lesser level of property protection. Greater protection to both life and property could be achieved by sprinklering all areas in accordance with NFPA 13... it should be recognized that the omission of sprinklers from certain areas could result in the development of untenable conditions in adjacent spaces. Where evacuation times could be delayed, additional sprinkler protection and other fire protection features, such as detection and compartmentation, could be necessary." That statement says it all about an NFPA 13R sprinkler system.

The intent of the IBC as expressed in Section 101.3 Intent is as follows: "The purpose of this code is to establish the minimum requirements to safeguard the public health, safety, and general welfare... and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations." Allowing the use of an NFPA 13R sprinkler system to increase the size of a building is counter to the intent and purpose of the IBC. Types of construction are designed to limit the height and area of buildings based on the occupancy and the degree of built-in fire-resistive protection and use of combustible or noncombustible construction materials. Buildings are allowed to get larger in area and taller in height with more fire-resistance built in and the reduced use of combustible construction for the building's structural elements. Therefore, property protection is a primary outcome of the types of construction used. Of course, type of construction also plays a role in life safety, especially in multi-story buildings, and has an impact on fire fighter safety as well. But an NFPA 13R sprinkler system is basically a partial sprinkler system because the standard does not require sprinklers in many concealed combustible areas including attics. So why should a building protected with an NFPA 13R sprinkler system be given the same credit for a building with more complete protection based on NFPA 13 sprinkler system?

Within the last few years there have been many fires involving buildings protected with NFPA 13R sprinkler systems which have burned to the ground. In most of those cases, the fire was able to get into the unprotected combustible attic space and spread throughout the building and then burn downward, overpowering the sprinkler system. It is not logical to allow increases in height and area for sprinkler systems that can not reduce the risk of a building being burned to the ground.

There have been several code changes in the recent two cycles to eliminate this height increase for NFPA 13R sprinkler systems. Though not previously approved the Masonry Alliance for Codes and Standards (MACS) still agrees with the previous proponents' supporting statements on why this reduction is not warranted. The issues have been clearly stated and adequate reasons given to support this particular code change proposal. Therefore, we respectfully request the Committee approve this code change proposal as submitted for the reasons stated.

**Cost Impact:** The code change proposal will increase the cost of construction.

ICCFILENAME: Thompson-G6-504.2

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** Fire statistics do not support the reduction of the allowance. There is no data that the fire loss experience is different for three story versus four story building. The NFPA 13R systems are adequate. While there are fires in attics, they rarely result in loss of the building.

**Assembly Action:**

**None**

## **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because public comments were submitted.**

### **Public Comment 1:**

**Jason Thompson, National Concrete Masonry Association (NCMA), representing the Masonry Alliance for Codes and Standards (AMCS), requests Approval as Submitted.**

**Commenter's Reason:** We believe that the large-loss fire statistics compiled by the National Fire Protection Association (NFPA) clearly show a trend in Group R residential occupancies constructed three or four stories in height and protected with NFPA 13R sprinkler systems. The indication that we've been able to conclude from our analysis of the NFPA large-loss fire data for losses greater than \$5 million in property damage seems to indicate that fires in Group R occupancies protected with NFPA 13R sprinkler systems are more likely to result in a large loss fire if the fire originates in the attic space or is able to get into the attic space before the sprinkler system below can control it. We intend to provide a detailed analysis of the NFPA large loss fire statistics compiled over the last several years for Group R residential occupancies to support this conclusion which will be made available at the ICC Final Action Hearings for the Class A voting members to review prior to the vote on this Code Change Proposal. We believe that the fire data alone will support this Code Change Proposal which eliminates the allowable height increase of one story and 20 feet for Group R occupancies protected with an NFPA 13R sprinkler system.

We are also concerned that the NFPA 13R sprinkler system is actually being used to "double dip" by allowing both a height increase, as indicated in this section we are trying to revise, as well as an area increase. The area increase is allowed for four story Group R occupancy buildings protected with NFPA 13R sprinkler systems in accordance with Exception 2 to Section 506.4.1 Area Determination. This Exception will allow such a four story building to have a total building area determined by multiplying the number of stories (four) by the allowable area per floor. This, in essence, is an area increase since the total building area allowed for all other occupancies and for all other buildings protected with an NFPA 13R sprinkler system is based on a maximum of three times the area allowed for a single story for buildings three or more stories in height. Thus, a four story building under Item 2 of Section 506.4.1 would only be allowed to have a total building area equal to three times that of a single floor area.

It is interesting to note that this height increase allowance would actually only be used under the current IBC for Group R occupancies of Types VA and VB construction. Type VB construction would be allowed to be increased in building height of two stories/40 feet to three stories/60 feet and a Type VA construction building would be allowed to be increased in the building height from three stories/50 feet to four stories/60 feet where an NFPA 13R sprinkler system is provided. In terms of allowable building height, this would make a Type VA building comparable to a Type IIA or IIIA building when protected with an NFPA 13R sprinkler system. We don't believe that is a reasonable allowance for Type VA construction using a primarily life safety sprinkler system to achieve the increased allowable building height.

We also ask the question: "Is it reasonable to allow a Type VB construction building of a Group R occupancy to be three stories/60 feet in height?" These buildings would have no requirement for fire-resistance ratings of the bearing walls and columns and, of course, would be allowed to have attics unprotected with sprinklers. In essence, this equates a Type VB construction building of a Group R occupancy to a Type VA construction building of the same occupancy classification with the installation of an NFPA 13R sprinkler system. Again, we do not believe this is a reasonable allowance for a life safety type sprinkler system which is being equated to providing 1-hour fire-resistive protection for the structural elements supporting the building.

In conclusion, we believe we have adequately substantiated why the Committee recommendation for disapproval of this Code Change Proposal should be overturned by the Class A voting members at the ICC Final Action Hearings so this Code Change can then be Approval as Submitted to eliminate the allowable building height increase for Group R occupancies protected with an NFPA 13R sprinkler system.

### **Public Comment 2:**

**Jason Thompson, National Concrete Masonry Association (NCMA), representing the Masonry Alliance for Codes and Standards (AMCS), requests Approval as Modified by this Public Comment.**

**Replace the proposal as follows:**

**504.2 Automatic sprinkler system increase.** Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum height is increased by 20 feet (6096 mm) and the maximum number of stories is increased by one story. These increases are permitted in addition to the area increase in accordance with the Sections 506.2 and 506.3. For Group R buildings of Type VA construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum height is increased by 20 feet (6096 mm) and the maximum number of stories is increased by one story, but shall not exceed four stories or 60 feet (19 288 mm), respectively.

#### **Exceptions:**

1. Buildings, or portions of buildings, classified as a Group I-2 occupancy of Type IIB, III, IV or V construction.
2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.
3. *Fire-resistance rating* substitution in accordance with Table 601, Note d.

**Commenter's Reason:** This Public Comment is being submitted to offer a compromise to the Class A voting members regarding the sprinkler trade-off for a building height increase of one story and 20 feet to a maximum height of four stories and 60 feet for Group R buildings protected with an NFPA 13R sprinkler system.

The revisions in this Public Comment will limit the application of this automatic sprinkler system trade-off for an NFPA 13R sprinkler system to allow the increased one story and 20 feet in building height to Group R occupancy buildings of Type VA construction only. So, in other words, an NFPA 13R sprinkler system could not be used in a Group R occupancy building of Type VB construction to get an increase in building height. It should be noted that only Type V construction buildings can currently take advantage of this building height increase for an NFPA 13R sprinkler system since it is limited to a maximum building height of four stories and 60 feet. All the other building construction types for Group R occupancies allow a maximum story height of four stories and at least 55 feet without considering any sprinkler increases.

Does this appear to be a reasonable compromise? We believe that it is not as desirable as eliminating the building height increase altogether for NFPA 13R sprinkler systems, but it at least would not allow the trade-off to be used in a type of construction that does not provide for any fire-resistive protection for the building's structural elements. Thus, approval of this Public Comment that revises Section 504.2 would not allow a Group R occupancy building of Type VB construction to have its building height increased from two stories/40 feet to three stories/60 feet. Without this modification, the code is basically equating an NFPA 13R sprinkler system to 1-hour fire-resistive protection of the building structural elements that carry the loads of the building to ground. This would appear reasonable given the fact that an NFPA 13R sprinkler system, as indicated in our Reason Statement, is not primarily a property protection system, but rather a life safety protection system. We believe this is especially important given the fact that attics are not required to be sprinklered in an NFPA 13R sprinkler system. Therefore, if a fire gets out of control in a Type VB construction building protected with an NFPA 13R sprinkler system, it is very likely that it will burn to the ground, resulting in a total loss.

This could conceivably have an impact on firefighter safety as well since, as noted previously, the vertical bearing elements of the building would not have any fire-resistive protection so a concealed fire could cause premature structural collapse of the building while the fire department was still inside trying to make an internal attack to control and eventually extinguish the fire. Certainly this would be a detriment to the public welfare with a loss of all of the dwelling units which would render many people temporarily homeless. So we would much more prefer to see the NFPA 13R sprinkler system height increase trade-off allowed for Type VA buildings, if it is to be allowed at all, since these buildings provide a minimum 1-hour fire-resistive protection throughout including all structural bearing elements. This will certainly provide for greater property protection, as well as enhance firefighter safety and improve public welfare by minimizing the chance that the building would be totally destroyed by a fire that is able to overcome the NFPA 13R sprinkler system.

In conclusion, we urge the Class A voting members to consider this Public Comment as a reasonable compromise for allowing the NFPA 13R sprinkler trade-off for increased building height in Group R occupancy buildings to remain in the IBC should the Class A members concur with this Public Comment. Although our choice would be for this Code Change Proposal to be approved, we believe this to be an acceptable compromise. However, in order for this Public Comment to be approved as revised for Code Change G91-09/10, it will be necessary for the Class A voting members to overturn the Committee's recommendation for disapproval. Then a two-thirds majority vote would still be required to approve this Code Change as modified by this Public Comment.

Final Action:                    AS                    AM                    AMPC\_\_\_\_\_                    D

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