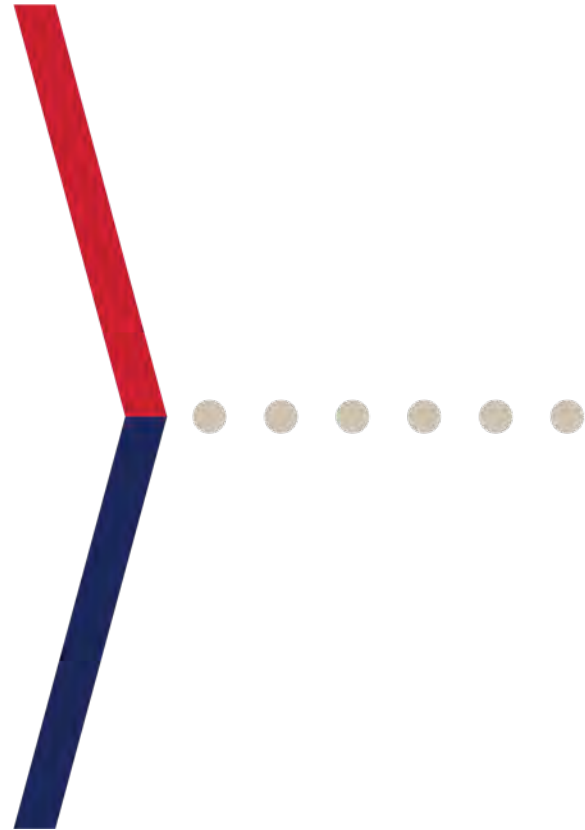


# Significant 2018 Code Changes for Multifamily Buildings

June 29, 2017





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# Learning Objectives

Participants in this webinar will be able to:

- Discuss significant changes to the 2018 edition of the International Building Code and related codes affecting multifamily construction.
- Recognize the potential impacts of the 2016 edition of ASCE 7 on roof coverings, roof framing and on design in areas of moderate- or high risk of earthquakes.
- Review significant changes relating to fire resistance in buildings, design and construction of balconies, and accessibility.
- Review the basics of the code development process and how codes are adopted at the state or local level.



# Speaker – Gary Ehrlich

- Director, Codes & Standards for NAHB
- Licensed Professional Engineer in MD





# Speaker – Dan Buuck

- Senior Program Manager,  
Codes & Standards for  
NAHB
- ICC Certified Building  
Official



# Polling Question 1

Which best describes your profession?

- Builder or remodeler
- Product manufacturer or supplier
- Engineer or architect
- Code official
- HBA staff
- Other

# Polling Question 2

Which edition of the IBC is your state currently using?

- 2015 IBC
- 2012 IBC
- 2009 IBC
- Earlier IBC edition or other code

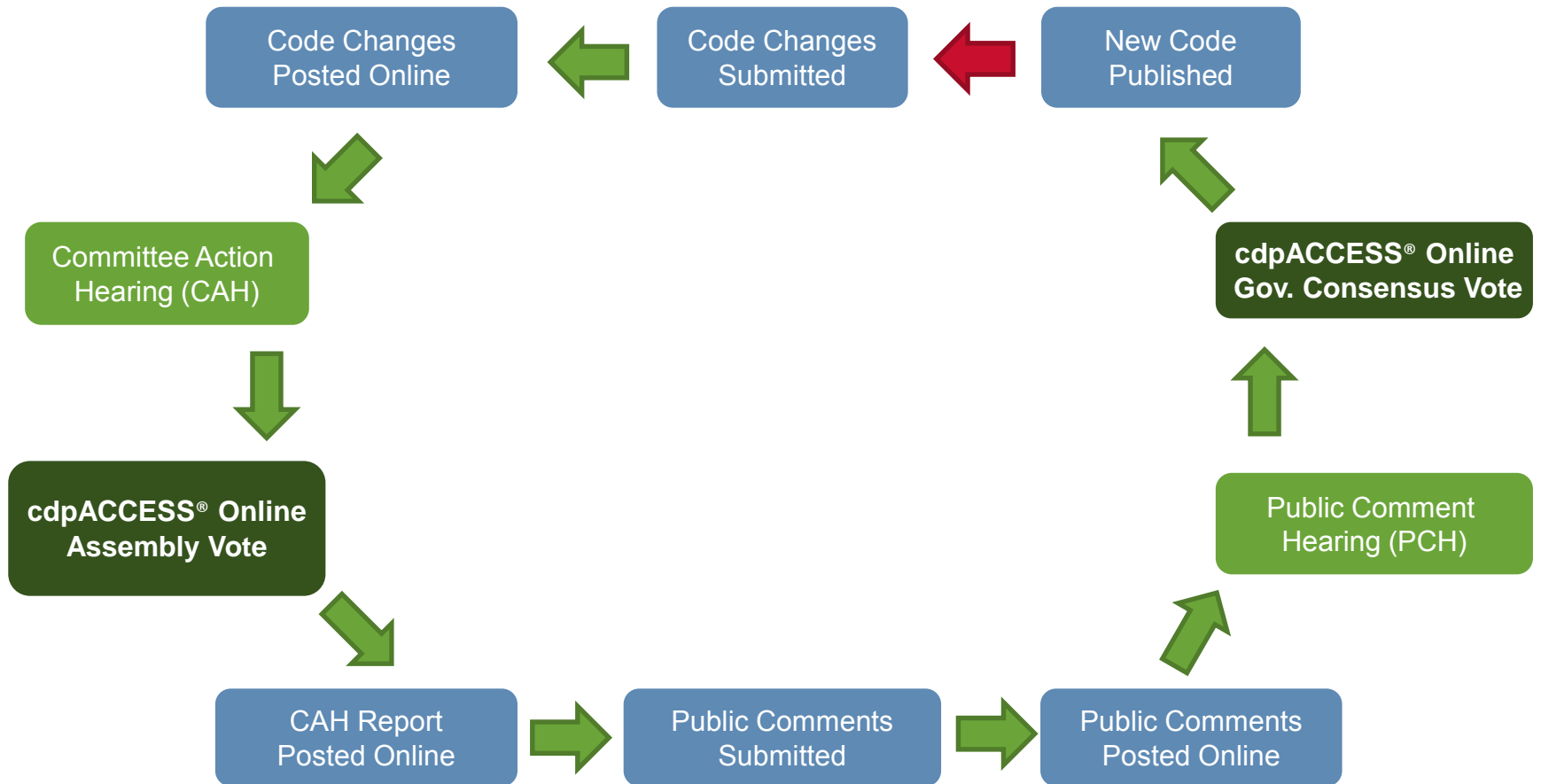


# ICC Code Development Process

- The International Code Council (ICC) mission is to provide the highest quality codes, standards, products and services for all concerned with the safety and performance of the built environment.
- Developed by ICC, the International Codes® are the most widely adopted model code throughout the United States.
- ICC publishes a new edition of the codes every 3 years.



# ICC Code Development Cycle



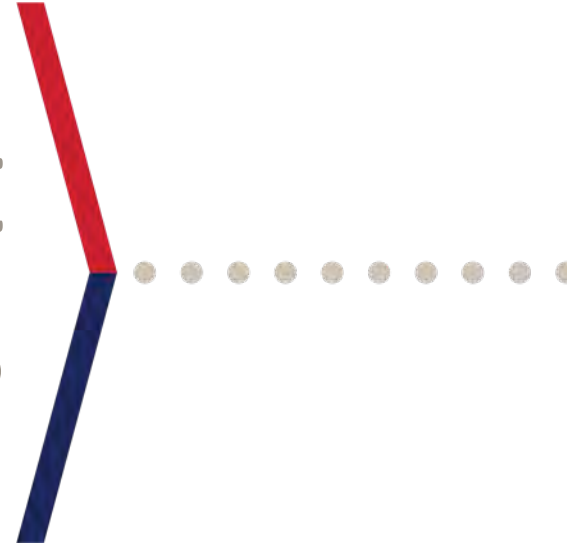
cdpACCESS®



- All code changes must be submitted using the cdpACCESS® portal.
- All Governmental Members must register before the Committee Action Hearings, to vote on the Governmental Consensus Ballot.
- The Governmental Consensus Ballot will be based on the outcome of the Public Comment Hearing.
- [www.cdpassess.com](http://www.cdpassess.com)

cdpACCESS™

# IBC Significant Changes



# Storm Shelters

*IBC 423, 1604.5*

- Storm shelters only classified as Risk Category IV if intended to be used as a community shelter for post-storm recovery.
- Private shelter for tenants and of a multifamily or office building and guests can be Risk Category II.
- Corridor(s) leading to the storm shelter need not be structurally upgraded to Risk Category IV requirements.



Photo by George Armstrong/FEMA



Photo by Win Henderson/FEMA

# Private Garages and Carports

## IBC 406.3

- Allows a private garage to be constructed using the public parking garage requirements.
- Permits a garage for tenants in a multifamily building to exceed the 1000 square foot area limit for private garages.
- Otherwise, there must be a 1-hour fire barrier every 1000 square feet of garage area.



# Enclosed Parking Garages

## *IBC 406.6.2*

- Mechanical ventilation not required for enclosed parking garages accessory to Group R-3 buildings.
- Consistent with IRC where mechanical ventilation is not required for an attached garage.
- Cost savings for 4-story townhouses.



# Fire Resistance Rating

## *IBC Table 602*

Allows exterior walls of Group R-3 buildings to be unrated where the fire separation distance is greater than 5 feet.

Applies to Type II-B and Type V-B construction.



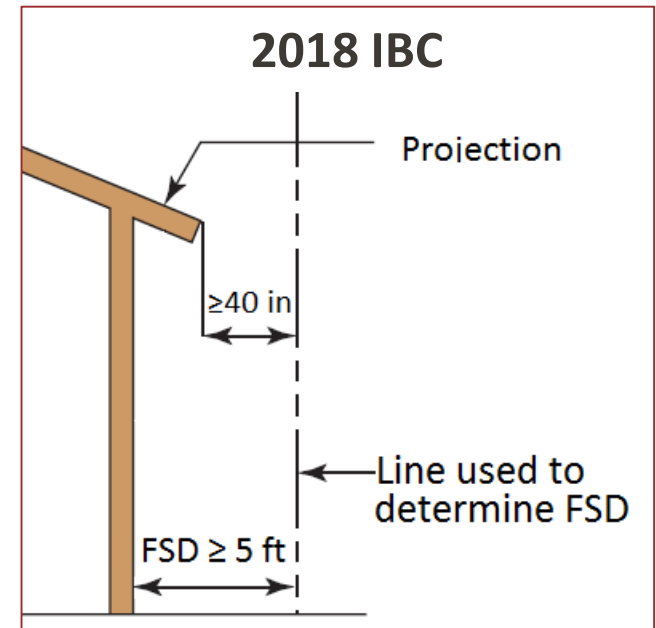
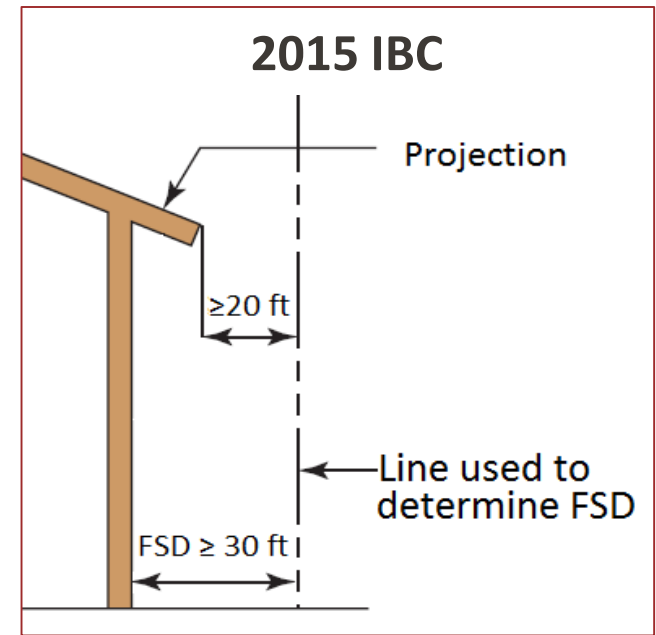


# Projections

## *IBC Table 705.2*

Reverts requirements for the minimum distance of projection to 2012 IBC and earlier editions.

- 2015:  
With a Fire Separation Distance (FSD) of 30 feet or more, the min. distance from the line is 20 feet.
- 2018:  
With a FSD of 5 feet or more, the min. distance from the line is 40 inches.



# Fire Walls

*IBC 503.1, 706.1*

- Not required on property lines established solely for ownership purposes as long as height and area limits are met.
- “Separate building” provision applies only for determining height/area limits and construction type.
- Do **NOT** need independent shear walls on each side of the fire wall.



# Pedestal Building Attic Protection

*IBC/IFC 903.3.1.2.3*

Attics not required to be sprinklered (NFPA 13R system) in buildings of Type III, IV or V construction where the roof assembly is over 55 feet above the lowest level of required fire department vehicle access shall be protected by one of the following:

- Fire sprinklers
- Noncombustible construction
- Fire-retardant treated wood
- Fill with noncombustible insulation



# Egress

## IBC 1006.4

Allows the path of egress travel to pass through more than one adjacent story:

- Within a dwelling unit.
- Up to 4 stories in Group R-1, R-2 or R-3 occupancies.
- In Group R-3 congregate residence or Group R-4.

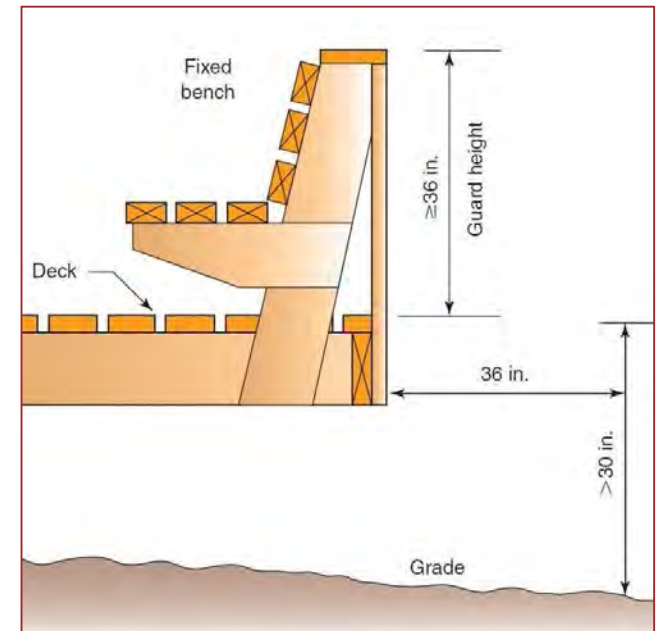


# Guard Height

## IBC 1015.3

Removes the requirement to measure guard height from fixed seating surfaces adjacent to the open side of elevated walking surfaces

- Group R-3 not more than 3 stories (36" guards).
- Individual dwelling units in Group R-2 not more than 3 stories (36" guards).
- Correlates guard height measurement with IRC & 42" guards in IBC.



# Emergency Escape and Rescue Openings

## *IBC 1030.1*

Clarifies that EEROs are only required in Group R-2 located in:

- Stories with one exit, or
- Stories with access to one exit

as permitted in Tables 1006.3.2(1) and 1006.3.2(2).



# Snow Loads

1608

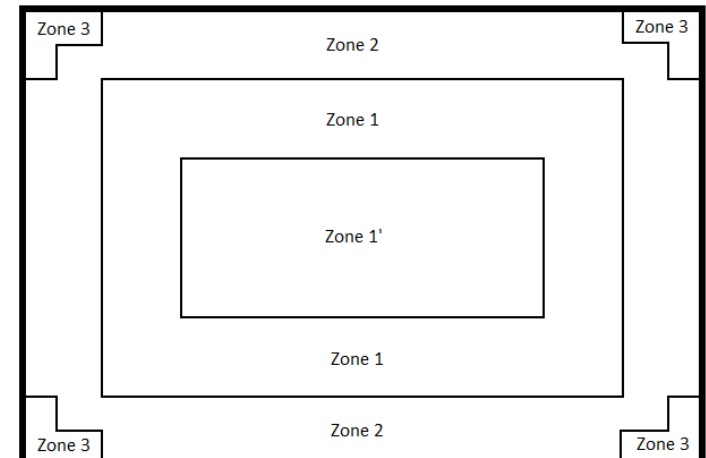
- State-specific ground snow loads for OR, WA, ID, MT, UT, CO and NH tabulated.
- Ground snow loads in Eastern Colorado (including Denver) increased based on new study.
- Rain load for secondary drains increased from 100-year/60-minute rainfall rate to 100-year/15-minute rate.



# Wind Loads

1609

- New maps with reduced ultimate design wind speeds for West Coast, upper Midwest, and Northeast.
- New rules in Commentary for addressing open areas in suburban terrain.
- Component and cladding roof pressures for low-rise buildings increased. Edge and corner zones on low-slope roofs now vary with building height.





# Seismic Loads

1613

- Seismic ground motion maps updated based on new USGS data.
- Higher SDC's for southeastern New Hampshire, eastern Tennessee, and Charleston, SC.
- New design requirements for concrete and masonry fences.
- Expanded design requirements parapets, stairs, and ceilings.



# Tsunami Loads

1615

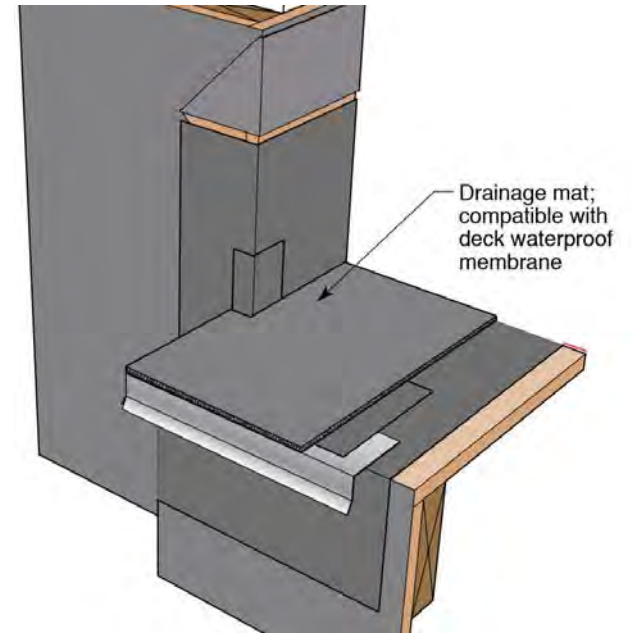
- New chapter for design of buildings along CA, OR, WA, AK and HI coastlines to resist tsunami loads.
- Only required for Risk Category III and IV buildings, i.e. those with high occupant loads, or critical & essential facilities.
- States and communities are encouraged to extend to other types of buildings.



# Wood Balconies

*IBC 2304.12.2.5 and  
2304.12.2.6*

- New provisions to address issues contributing to balcony collapse in Berkeley.
- Ventilation openings required if framing under balcony enclosed by soffit.
- Drainage board or mat required between concrete topping and wood framing below.
- All balconies must be designed for 1.5x live load of area(s) served.



# Wall Headers

## IBC 2308.5.5.1

- Single member headers for bearing walls added.
- 2x header with flat 2x above and below.
- Allows for insulation in place of the second 2x.

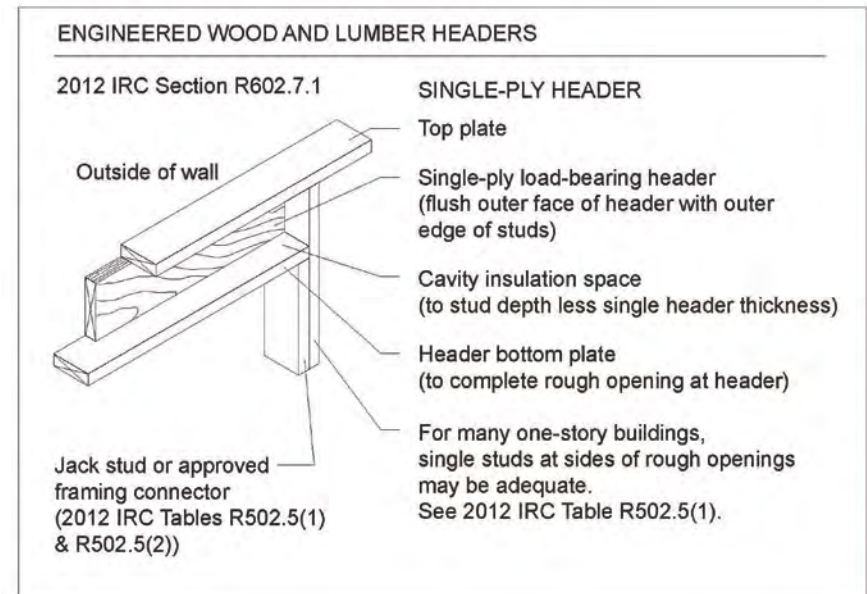


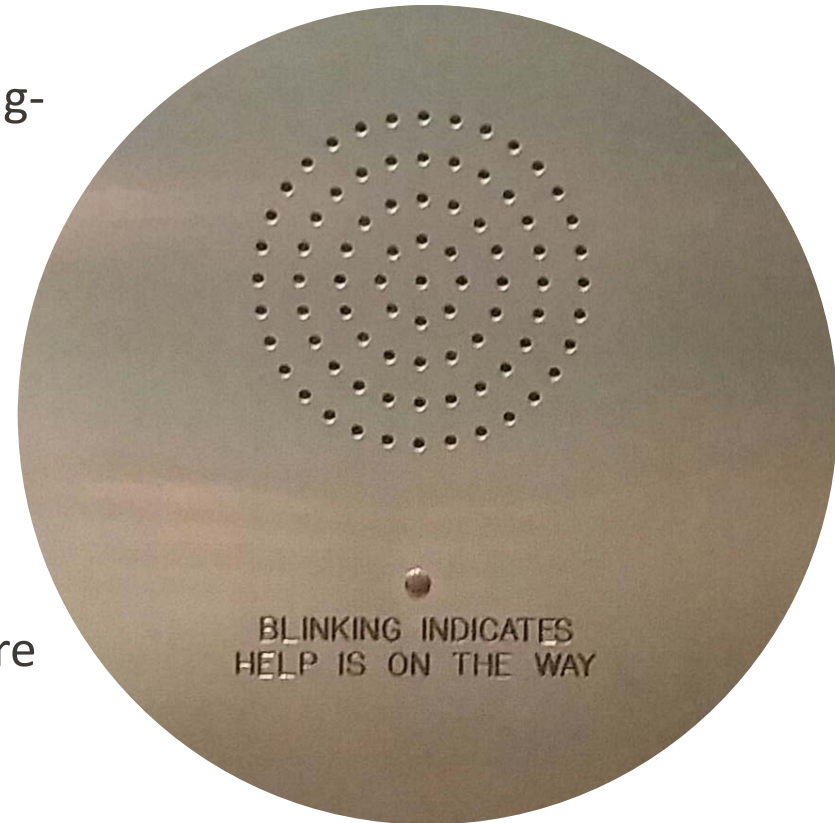
Figure by APA – The Engineered Wood Association

# Emergency Elevator Communications

## *IBC 3001.2*

Adds a requirement to install communication systems for hearing- and speech-impaired users.

- Visual and text-based, video-based 24/7 live interactive system.
- Voice-only options for the hearing.
- Able to communicate with emergency personnel via video conferencing, chat/text software or other approved technology.

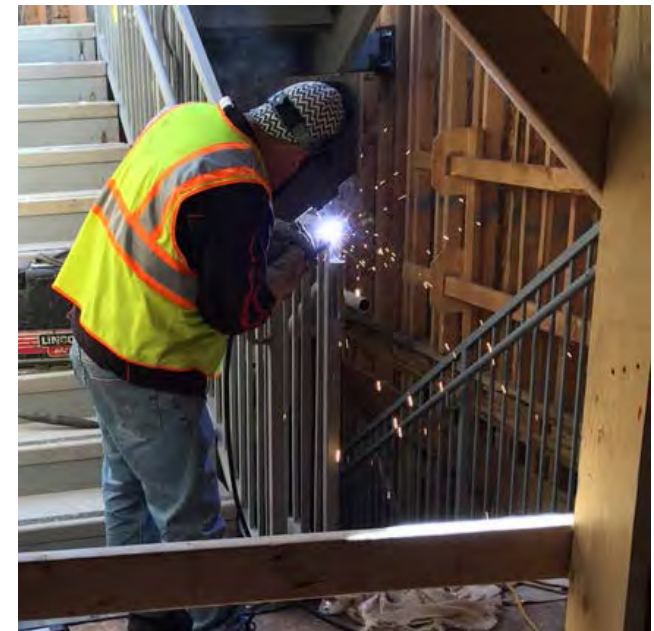


# Fire Watch

*IFC 3304.5/IBC 3314.1*

Allows the fire code official to require a fire watch ...

- For construction that exceeds 40 feet in height.
- During non-working hours.



# Smoke Detectors & Smoke Alarms

## *IBC 3308.6.1*

Adds a requirement to protect smoke detectors and smoke alarms against dust during construction.

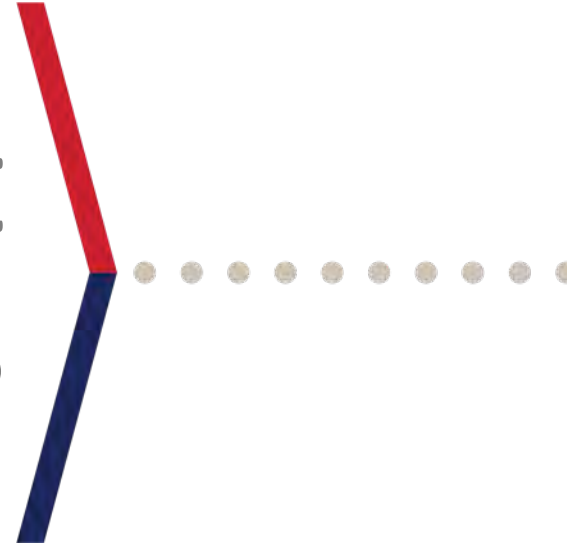
- Cover or temporarily remove.

After dust-producing work is completed:

- Replace units that were removed.
- Uncover, inspect and clean units that were covered.



# IEBC Significant Changes





# Accessibility

## IEBC 301.1.5

- Requires existing buildings to comply with the 2009 edition of ICC A117.1 *Standard for Accessible and Usable Buildings and Facilities*.

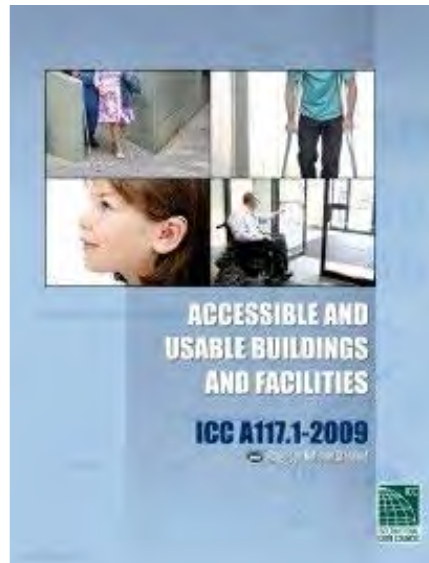
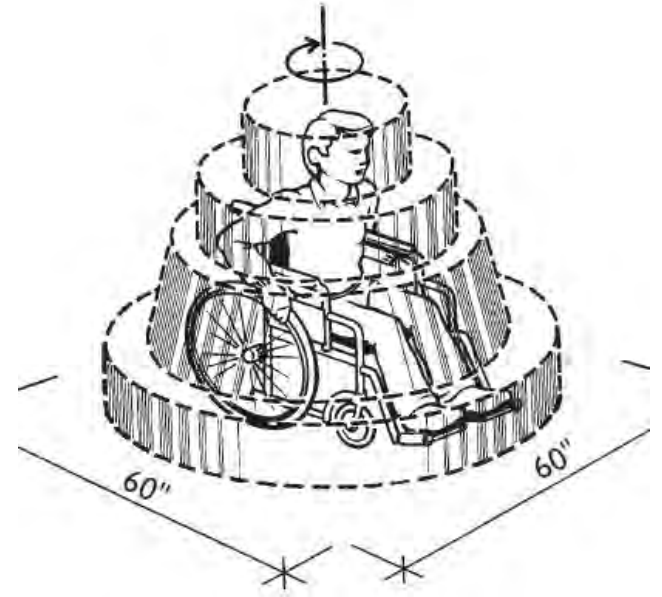
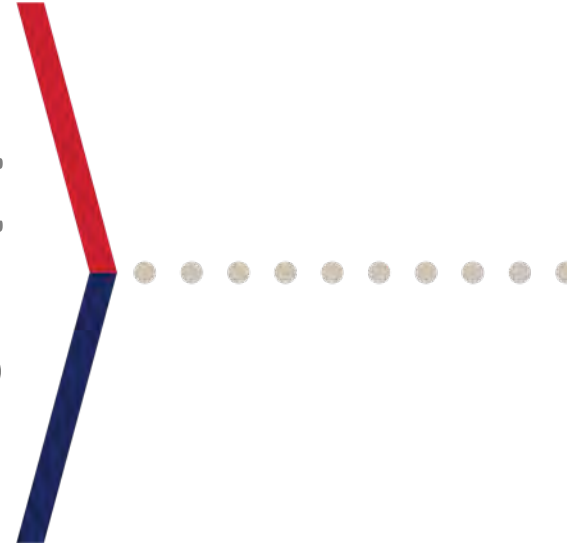


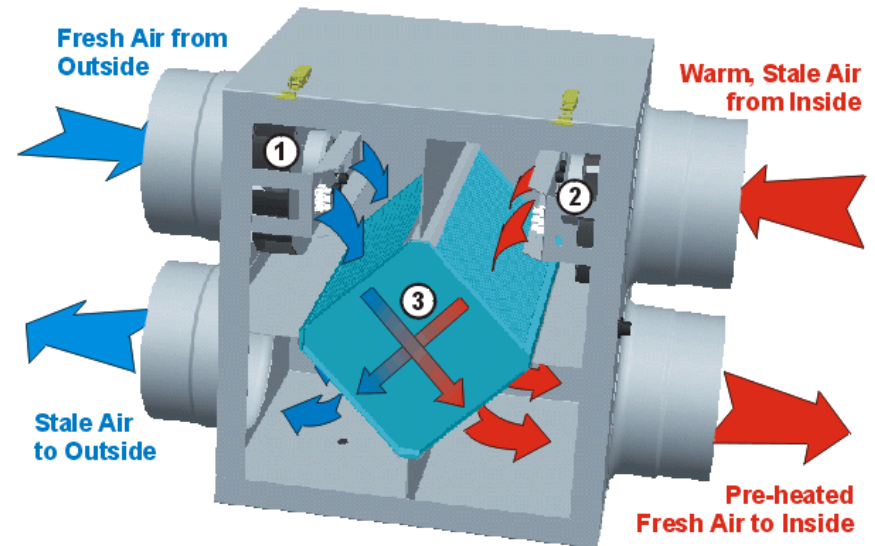
Photo by Tom Redner

# IECC Significant Changes



# Energy Recovery Ventilation

- Requirements for ERV's have been reduced in the commercial portion of the 2018 IECC.
- Many individual dwelling unit multi-family ventilation systems will no longer need energy recovery.
- In the 2015 code, nearly all required energy recovery.
- May need a timer on the ventilation system to avoid the ERV requirement.



# Building Tightness Testing

- Multi-family units are permitted to be sample tested when using the performance path (section R405).
- Sampling protocol is not defined, this will need to be worked out with the AHJ.
- Significant cost savings for some multi-family buildings (e.g. garden style apartments).

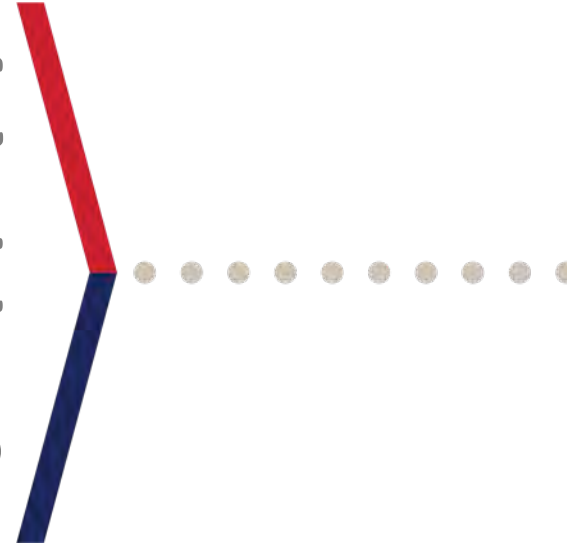


# Commercial Lighting Controls

This change rewrites sections of C405.2.5 and adds new sections that add requirements for controls to integrate exterior lighting controls with other building lighting controls. This functionally restricts the use of mechanical timers. An exception was introduced that exempted dwelling units from having to comply.



# IMC and IPC Significant Changes



# Dryer Duct

*IMC 504.8.2*

Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.



# Plenums

*IMC 602*

Adds framing cavity plenums to the list of plenum locations allowed in the code.



Courtesy:  
[Building America Solution Center](#)



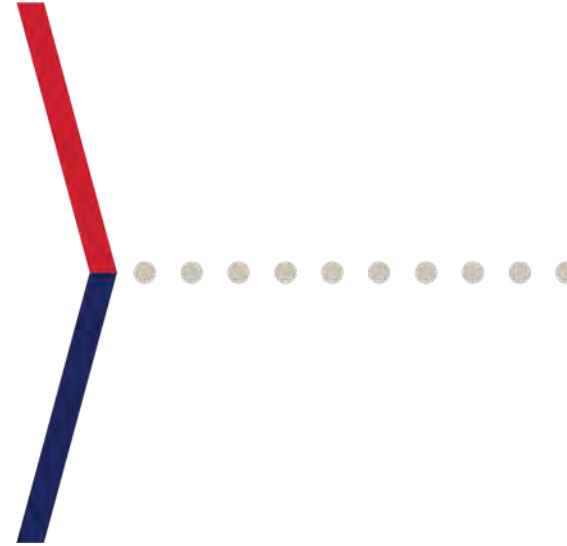
# Duct Sealing

*IMC 603.9*

- The exception to seal longitudinal and transverse joints, seams and connections in ducts now includes only those located outside of conditioned spaces.
- Previously, snap-lock and button-lock duct types were required to be sealed even in systems with pressures under 2 inches water column.

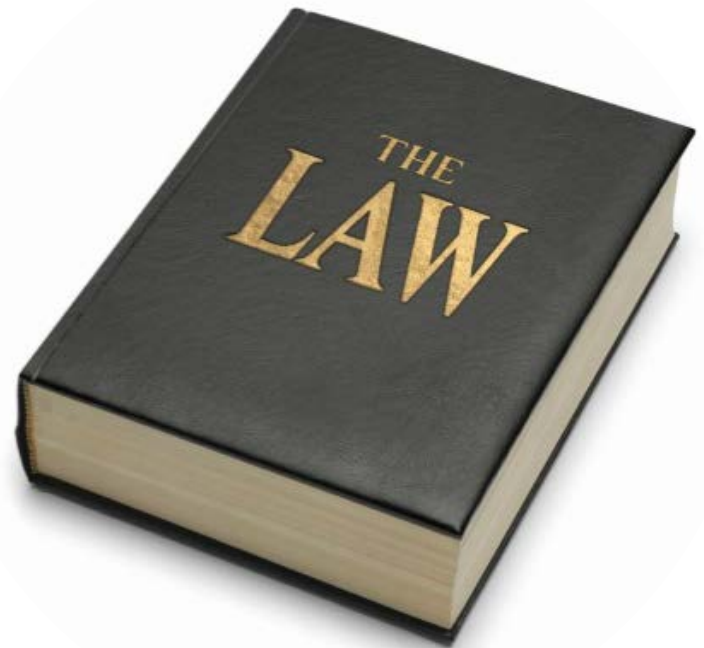


# Code Adoption



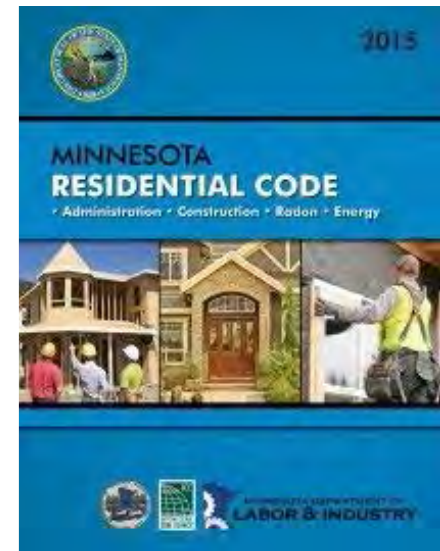
# How Building Codes are Adopted

- Legislative adoption
- Direct regulatory adoption (no building code council)
- Periodic review and adoption by a state or county building code council
  - Typically every 3 years
  - Some states every 6 years



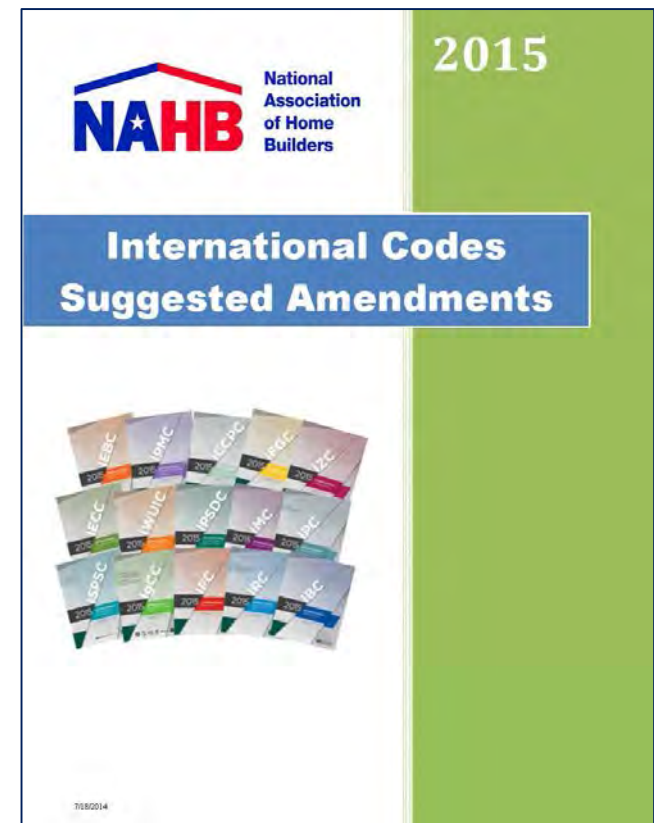
# How Building Codes are Amended

- Most states and jurisdictions permit amendments to adopted building codes.
- Some allow amendments to either add, remove or modify provisions of the model code.
- Some only allow amendments that strengthen the code.
- Some states limit the ability of counties or cities to make amendments.



# NAHB Code Adoption Resources

- NAHB offers Code Adoption Toolkits with recommended amendments.
- NAHB CC&S staff can assist HBA's in drafting amendments.
- NAHB CC&S staff can provide HBA's with talking points on amendments submitted by others.
- [nahb.org/codes](http://nahb.org/codes)





# Questions and Answers

## Speaker Contact Information

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# Thank You

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- This webinar also counts as 0.1 CEU towards ICC certifications. Please email [gehrlich@nahb.org](mailto:gehrlich@nahb.org) if you would like to receive ICC credit.

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