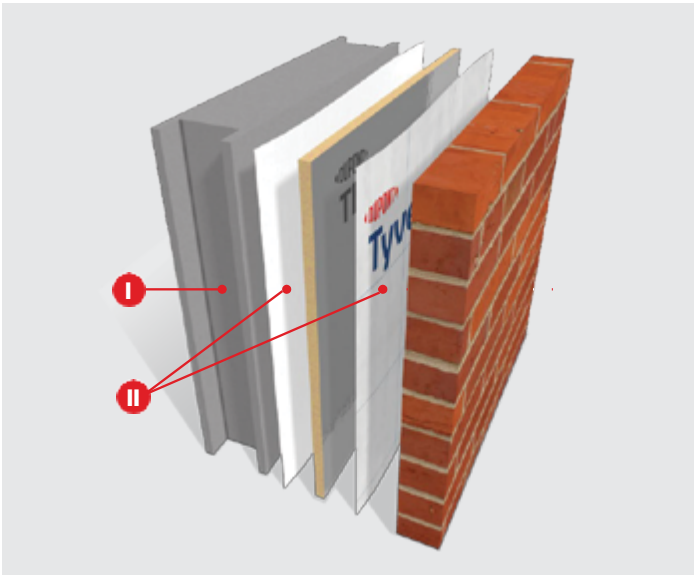


NFPA 285 Compliant Wall Assemblies

With DuPont™ Tyvek® Commercial Air and Water Barrier Systems¹



I. Base Wall System

1. Concrete Wall
2. Concrete Masonry Wall (CMU)
3. Standard Clay Brick Wall
4. Adobe Block Wall
5. Wood Studs (untreated or Fire Retardant Treated*): nominal 2"X4" or greater (24" on center maximum)
 - a. Interior wallboard: minimum of 1 layer of 5/8" Type X gypsum on interior face of studs
 - b. Interior vapor barrier (optional): 1 layer of maximum 6 mil thick polyethylene plastic or equivalent can be applied
 - **Note:** Consider climate zone requirements and moisture resistant wall assembly design before installation.
 - c. Cavity insulation: None or any noncombustible insulation (faced or unfaced)
 - d. Exterior Sheathing: Any thickness of plywood or OSB (untreated or Fire Retardant Treated*) on exterior face of studs, or
 - Minimum 5/8" thick Type X gypsum on exterior face of studs
 - (Note: Minimum 5/8" thick Type X gypsum must be installed over plywood or OSB when installed on exterior face of studs)

e. Top plates: Minimum of two top plates at floor lines.

- * For Fire Retardant Treated (FRT) framing or sheathing, ensure chemical compatibility with other wall assembly components.
6. Steel Stud Framed Wall: minimum 20-gauge, 3-5/8" studs, with lateral bracing every 4 feet vertically (24" on center maximum)
 - a. Interior wallboard: minimum of 1 layer of 5/8" Type X gypsum wallboard on interior face of studs
 - b. Interior vapor barrier (optional): 1 layer of maximum 6 mil thick polyethylene plastic or equivalent can be applied
 - **Note:** Consider climate zone requirements and moisture resistant wall assembly design before installation.
 - c. Cavity insulation: None or any noncombustible insulation (faced or unfaced)
 - d. Floorline firestopping (Required for curtainwall construction): 4 lb./cu. ft. mineral wool (e.g. Thermafiber®) in each stud cavity and at each floorline – attached with Z-clips or equivalent
 - e. Exterior sheathing: None or minimum 5/8" thick, Type X gypsum sheathing installed on exterior face of studs
 - **(Note: Minimum 5/8" thick Type X gypsum must be installed on exterior face of studs when combined with Extruded Polystyrene Foam Insulation (XPS) as the continuous insulation layer.)**

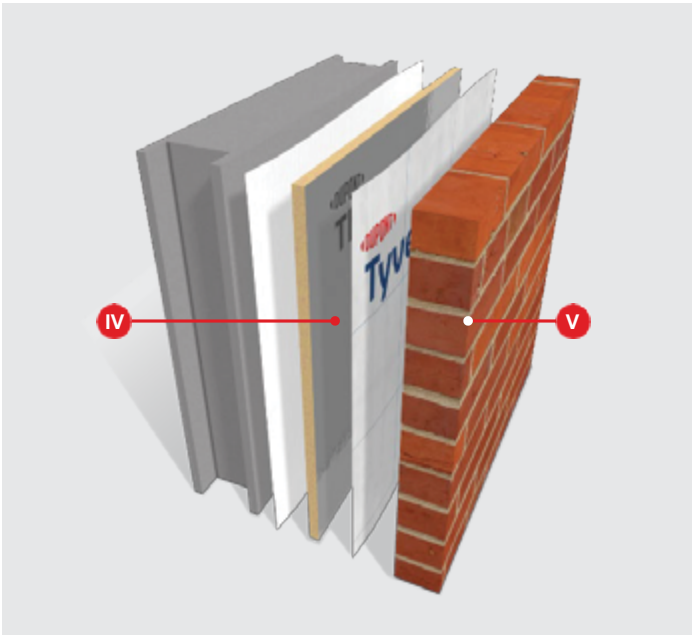
II. Air and Water Barrier

Applied to base wall OR over exterior insulation

1. None
2. DuPont™ Tyvek® CommercialWrap®
3. DuPont™ Tyvek® CommercialWrap® D
4. DuPont™ Tyvek® ThermaWrap™ LE
5. DuPont™ Tyvek® Fluid Applied WB+™*:

* Nominal 25 wet mil thickness. **NOT** to be applied OVER exterior insulation.

Note: Any air and water barrier to be installed in accordance with manufacturer installation instructions. Flash windows, doors, and other exterior penetrations with asphalt, acrylic, or butyl-based flashing tape with a maximum 12" width. Use primer when applicable, unless otherwise noted by flashing manufacturer. DuPont™ Tyvek® Fluid Applied Flashing & Joint Compound+ can be used with Air and Water Barrier #5.



III. Drainage Mat

Applied to I. Base Wall, or II. Air and Water Barrier, or IV. Exterior Insulation

1. None
2. DuPont™ Tyvek® DrainVent™ Rainscreen-Limited to use as:
 - a. Must be used in conjunction with any air and water barrier in Section II.
 - **Note:** DuPont™ Tyvek® Fluid Applied WB+™ NOT to be installed directly over Tyvek® DrainVent™.
 - b. Exterior Claddings #1-#11 in Layer V when no air gap is present between the veneer and the Tyvek® DrainVent™.

IV. Exterior Insulation

1. None
2. Any unfaced noncombustible insulation
3. DuPont™ Thermax™ Brand Polyisocyanurate Insulation: Total thickness to be a minimum of 5/8" to maximum of 4.25"
 - a. A maximum of 3" total thickness can be used with Exterior Cladding (#4, #5, and #7).
 - b. A maximum of 4.25" total thickness can be used with Exterior Cladding (#1, #2, #3, #6, #8, and #9).
4. DuPont™ Styrofoam™ Brand Extruded Polystyrene Foam Insulation (XPS), or other XPS brands complying with:
 - **Type IV per ASTM C578:** Total thickness to be a minimum of 1/2" to maximum of 3". On insulation joints, an asphalt or butyl-based flashing tape with a 4" maximum width can be used. Use any header treatment shown in NFPA 285 Window Head Detail Options, Figures 1-6 for all window and door openings in the exterior wall.
5. **Note:** When Thermax™ Brand Insulation or Styrofoam™ Brand Foam Insulation is used as Exterior Insulation, all exterior insulation joints, through-wall penetrations, window, and door openings can be flashed with one of the following:

- a. DuPont™ LiquidArmor™ CM Flashing and Sealant-max. 60-mil wet thickness, max. 5-inch width
- b. DuPont™ LiquidArmor™ LT Flashing and Sealant- max. 35-mil wet thickness, max. 5-inch width
- c. DuPont™ LiquidArmor™ QS Flashing and Sealant-max. 60-mil wet thickness, max. 5-inch width
- d. Great Stuff Pro™-Use on joints that are ≤1/4-inch, vertical joints must be staggered & remove significant excess from face of Thermax™

V. Exterior Cladding

1. **Brick**
Standard nominal 4" thick, clay brick. Use standard brick veneer anchors installed maximum 24" on center vertically on each stud with a 2" maximum air gap between exterior insulation and brick.
2. **Stucco**
Minimum 3/4" thick, exterior cement plaster and lath. An optional secondary water-resistive barrier can be installed between the exterior insulation and the lath. The secondary water-resistive barrier shall not be full-coverage asphalt or butyl-based self-adhered membranes. (Can not be combined with Exterior Insulation: #4-XPS)
3. **Stone Veneer**
Minimum 2" thick, limestone or natural stone veneer or minimum 1-1/2" thick cast artificial stone veneer. Any standard installation technique can be used.
4. **Fiber Cement Siding or Panels (noncombustible)**
Any standard installation technique can be used. (Can not be combined with Exterior Insulation: #4-XPS)
5. **Metal Exterior Wall Coverings**
Including but not limited to steel, aluminum, and copper installed using standard installation techniques. (Can not be combined with Exterior Insulation: #4-XPS)
6. **Terracotta Cladding**
Use any terracotta cladding system in which terracotta is minimum 1-1/4" thick. Any standard installation technique can be used.
7. **Metal Composite Material (ACM/MCM)**
Use any ACM/MCM system that has been successfully tested by the panel manufacturer via NFPA 285 test method. (Can not be combined with Exterior Insulation: #4-XPS)
8. **Concrete Masonry Units (CMU)**
Minimum 2" thick CMU, with a 2" maximum air gap between exterior insulation and CMU.
9. **Concrete Panels or Precast Concrete**
Minimum 1.5" thick panel, with a 2" maximum air gap between exterior insulation and concrete panel.
10. **Insulated Concrete Sandwich Panels**
Minimum 2" outer and inner faces. Maximum 2" air gap between panel and wall system.
Note: All exterior veneer/cladding systems must be installed in accordance with manufacturer's installation instructions and with applicable building codes.
11. **Tab II Plus Wall System**
Minimum 1/2" thick thin brick veneer applied to a steel panel with Tabs II Mastic and Type S mortar.

NFPA 285 Window Head Detail Options for All Exterior Window and Door Openings

Tyvek® WRB and XPS Continuous Insulation

Figure 1: NFPA 285 Head Detail Option 1

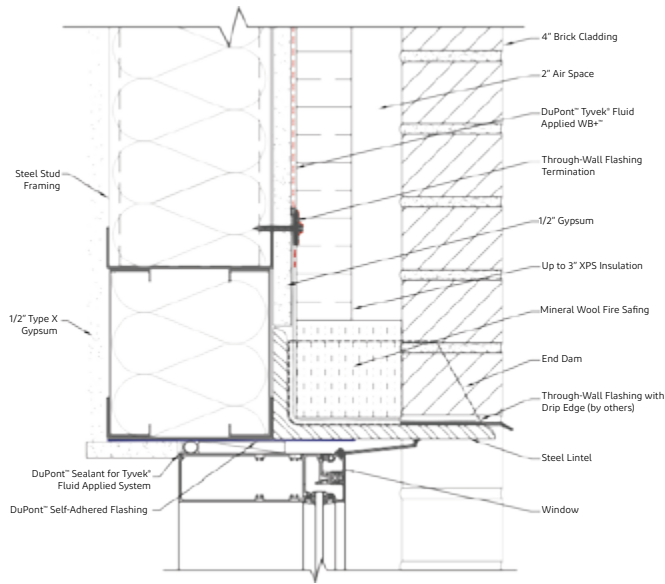


Figure 2: NFPA 285 Head Detail Option 2

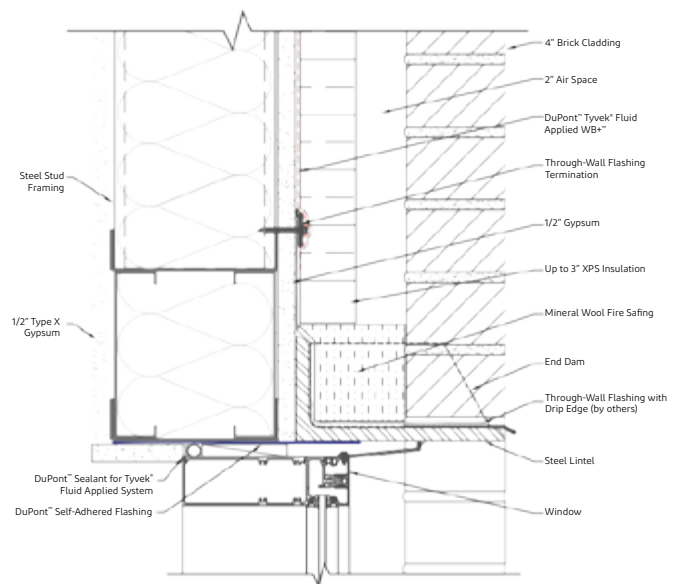


Figure 3: NFPA 285 Head Detail Option 3

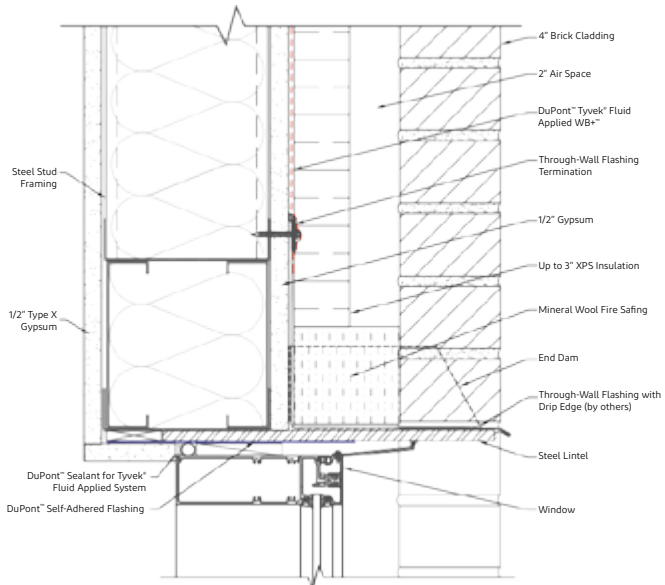
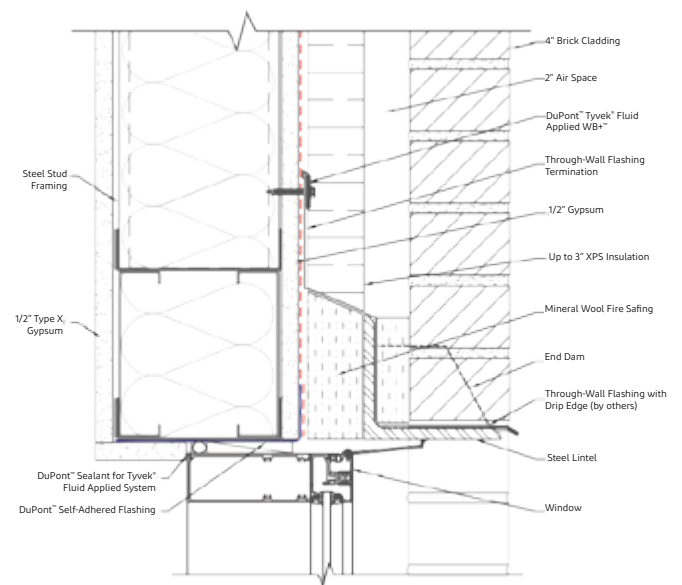


Figure 4: NFPA 285 Head Detail Option 4



Tyvek® WRB and XPS Continuous Insulation (cont.)

Figure 5: NFPA 285 Head Detail Option 5

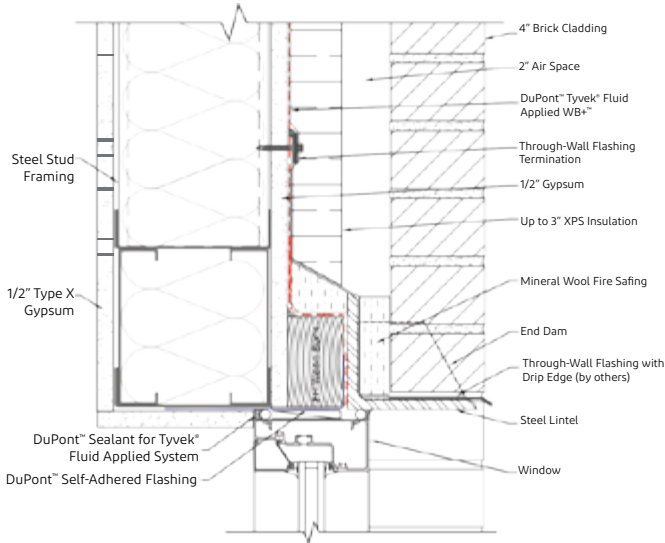
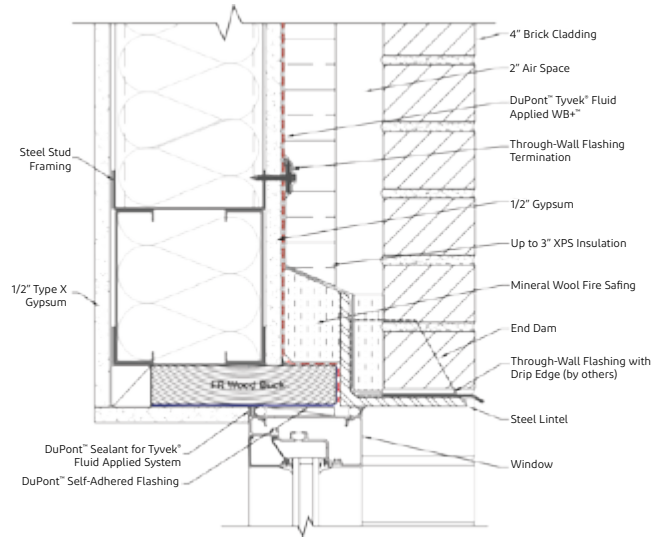


Figure 6: NFPA 285 Head Detail Option 6



Tyvek® WRB and Thermax™ Brand Insulation

Figure 7: NFPA 285 Head Detail Option 7

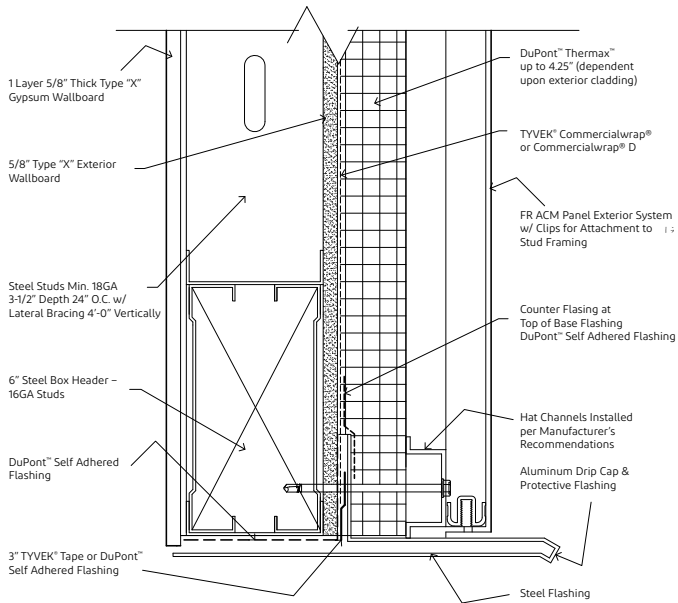
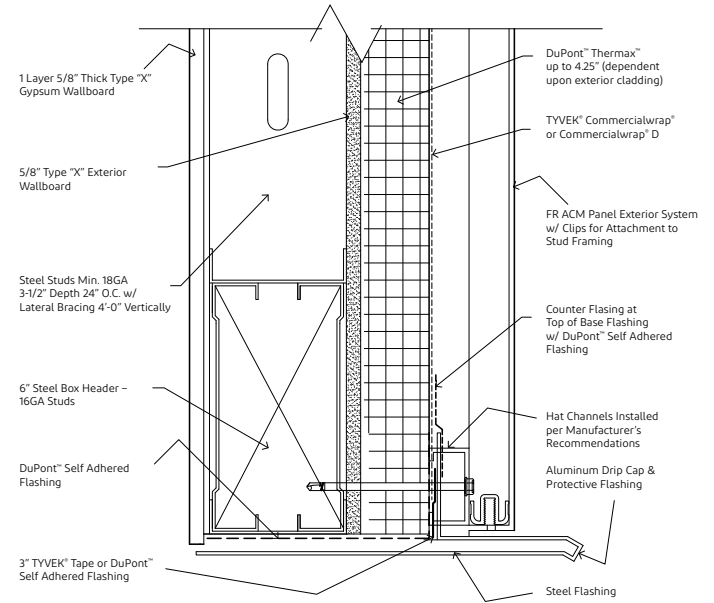
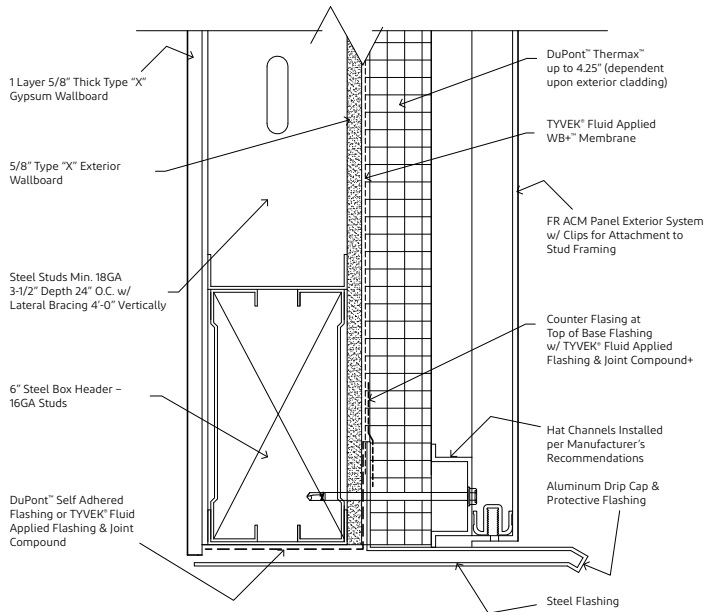


Figure 8: NFPA 285 Head Detail Option 8



Tyvek® WRB and Thermax™ Brand Insulation (cont.)

Figure 9: NFPA 285 Head Detail Option 9



For additional NFPA 285 compliant wall assemblies utilizing DuPont™ Tyvek® Commercial Air and Water Barrier products, referenced from other assembly component manufacturers, please call 1-800-448-9835 or visit building.dupont.com.



For more information visit
building.dupont.com
or call 1-800-448-9835

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