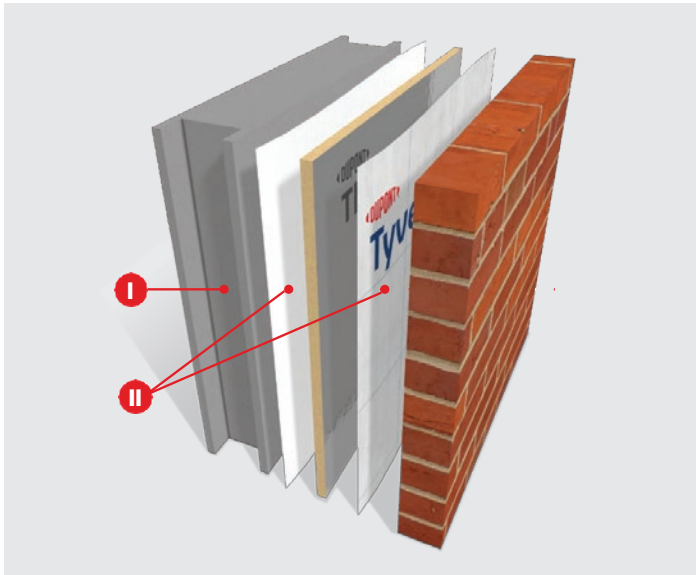


NFPA 285 Compliant Wall Assemblies

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.)

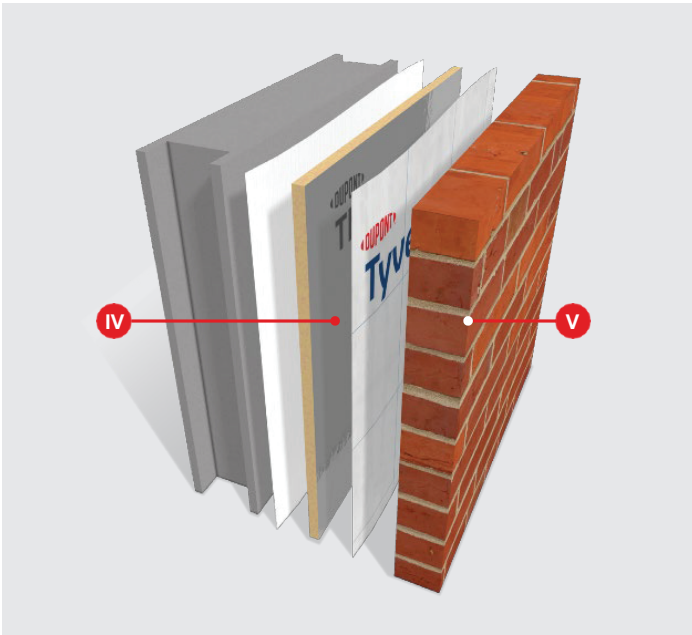
II. Air and Water Barrier

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™ Polyisocyanurate Rigid 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™ 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 DuPont™ Thermax™ or DuPont™ Styrofoam™ 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

Figure 1: NFPA 285 Head Detail Option 1

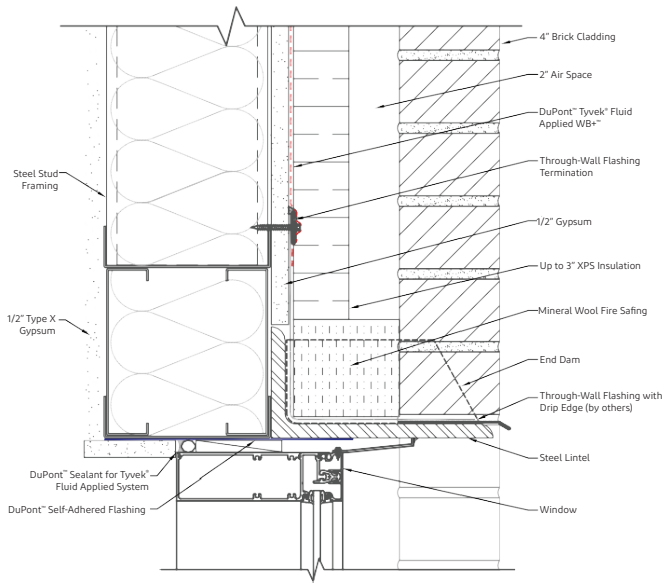


Figure 3: NFPA 285 Head Detail Option 3

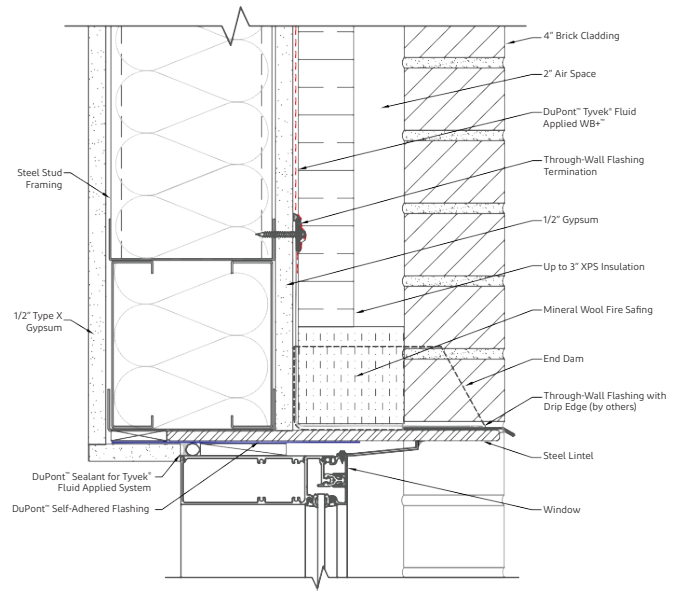


Figure 2: NFPA 285 Head Detail Option 2

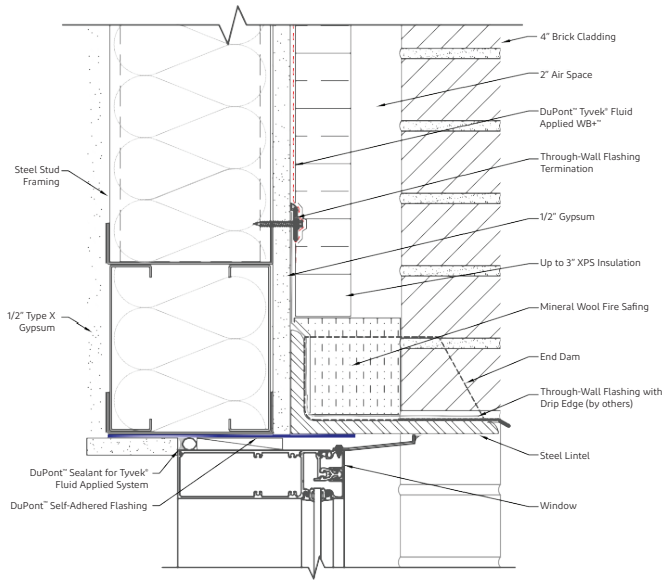


Figure 4: NFPA 285 Head Detail Option 4

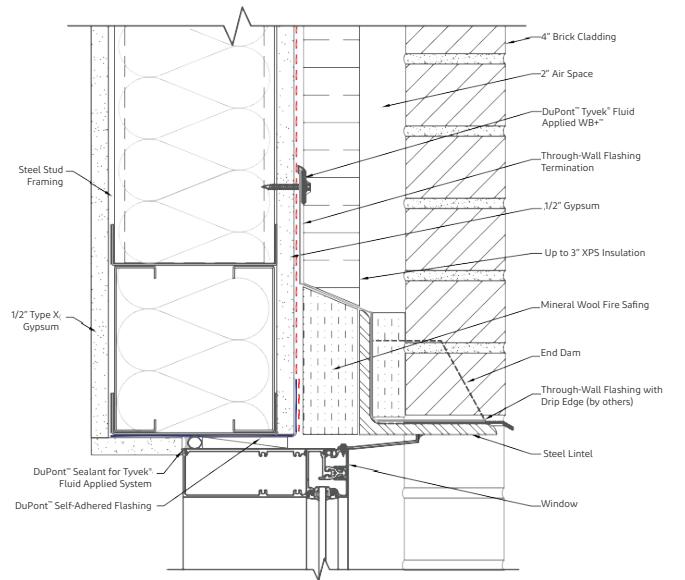


Figure 5: NFPA 285 Head Detail Option 5

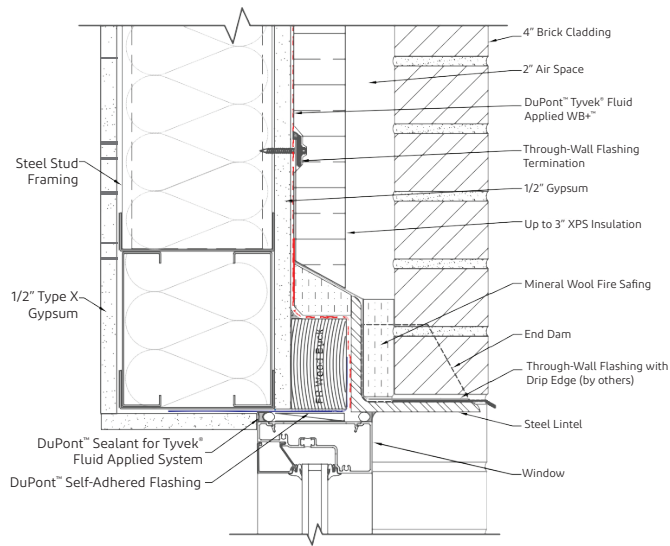
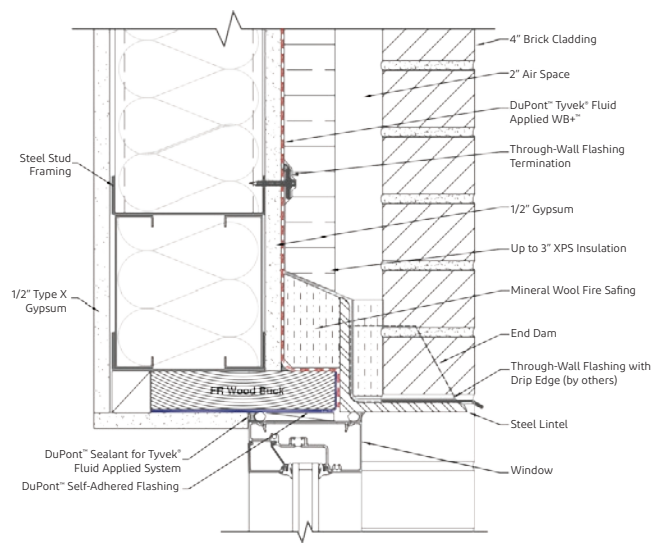


Figure 6: NFPA 285 Head Detail Option 6



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
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