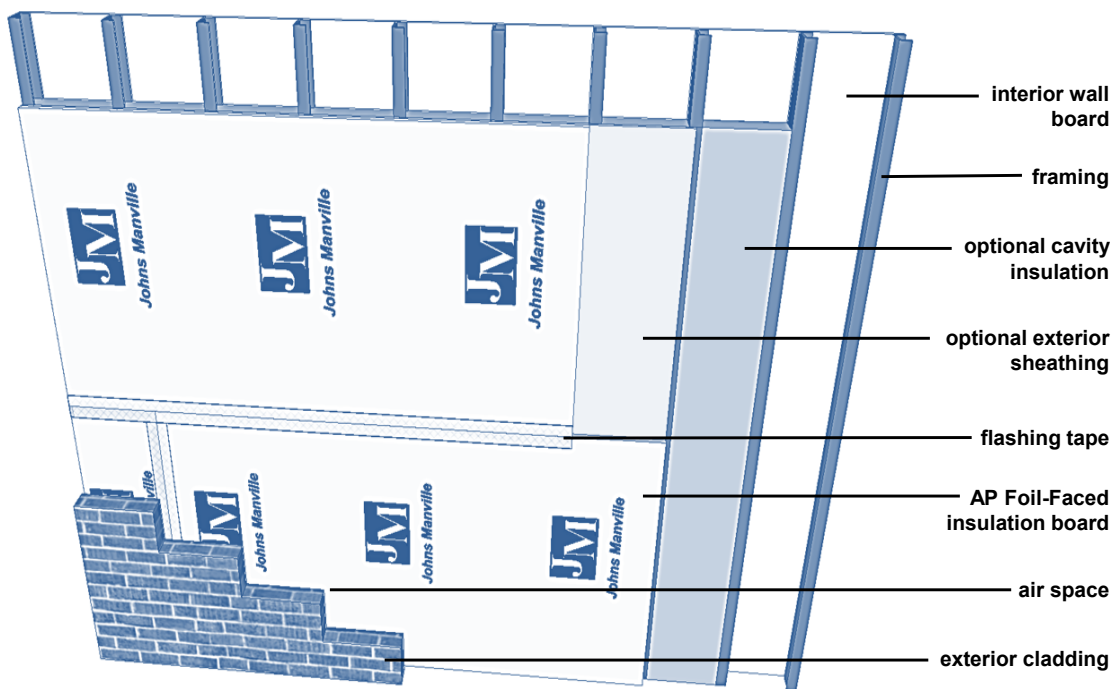## Exterior Walls

The JM Continuous Insulation Wall System provides exceptional heat, moisture, and air control for your building's exterior envelope using a minimal number of components. The light gauge steel framed wall assembly features AP™ Foil-Faced Foam Sheathing and can be used in Type I – IV construction behind metal cladding, fiber cement, brick, stucco, stone, concrete, or terra cotta veneer cladding. Recommended flashing tape and fasteners eliminate the need for structural sheathing, spray foam, and separate air/water-resistive barriers.

Sequencing Overview

1. Structural steel and exterior wall studs installed and braced as required.
2. If desired, exterior structural sheathing installed (gypsum or other approved material).
3. Rigid exterior insulation board installed using capped fasteners.
4. As applicable, exterior cladding fasteners installed.
5. If air and water barrier desired, tape all seams, edge and end joints, and thru-wall penetrations with recommended flashing.
6. If air and water barrier desired, seal penetrations and panel defects with recommended sealant in accordance with the manufacturer's instructions.
7. If necessary, install a floor line fire-stop in the stud cavity.
8. As applicable, the wall is now ready for stud cavity insulation and exterior veneer.

Figure 1. JM Continuous Insulation Wall System

interior wall board

framing

optional cavity insulation

optional exterior sheathing

flashing tape

AP Foil-Faced insulation board

air space

exterior cladding

Recommended Components*

- Optional cavity insulation: none; fiberglass batt (JM Formaldehyde-free™ fiberglass batts (Unfaced,Faced, or ComfortTherm®)); blow-in fiberglass (JM Climate Pro®, JM Spider® Plus); spray foam (JM Corbond®); mineral wool.
- Flashing tape: 3M™ All Weather Flashing Tape 8067
- Sealant: Tremco Spectrem® 1 or any sealant complying with ASTM C920 Type S, Grade NS, Class 100/50, Use NT, M, G, A, and O.
- Insulation fastener: JM Ultrafast CI Plates and JM Ultrafast CI Phillips screws

* The recommended components meet large scale assembly test acceptance criteria for fire, weather resistive barrier, and air barrier performance.
** Spray polyurethane foam may only be used in conjunction with exterior structural sheathing.

Installation Recommendations

Proper moisture management of the wall system is important. Moisture modeling using WUFI or similar tool is recommended on wall designs that do not have a proven track record of performance.

Option 1: Installation over Exterior Sheathing

1. Begin installation after structural steel, exterior framing and bracing, and structural sheathing is complete.
2. Install AP™ Foil-Faced Foam Sheathing horizontally (preferred) over exterior sheathing staggering joints relative to exterior sheathing. The reflective side of the board should be oriented to the exterior, and the non-reflective white side should be oriented to the interior.
3. Use maximum board lengths to minimize number of joints. Locate joints square to framing members. Center end joints over framing. Provide additional framing as necessary. Stagger each course at least one stud space to minimize continuous vertical seams. Boards may be installed vertically if less seam sealing results.
4. Butt board edges together tightly, and carefully fit around openings and penetrations.
5. Fasten insulation boards to the exterior face of the stud framing using recommended fasteners with the length in Table I. Fasteners must be long enough that at least three full threads are visible inside the wall framing.
6. Refer to Figure 2 for fastener pattern. Space fasteners 16 inches on center at the board perimeter, or consistent with framing spacing, but not greater than 24 inches on center. Space fasteners 24 inches on center in the field, or consistent with framing spacing. One fastener/plate can bridge between a maximum of two adjoining board edges. Drive fasteners so the stress plate is tight and flush with the board surface, but do not countersink.
7. Install exterior cladding ties as applicable.
8. To create an air/water-resistive barrier, tape all seams, edge and end joints, and thru-wall penetrations with recommended flashing tape as shown in Figures 3 - 5. Install flashing shingle-style with a minimum 4 inch overlap, and follow the tape manufacturer's application instructions. Seal fastener penetrations by applying a minimum 4-inch by 4-inch piece of tape over each plate, smoothing tape edges to create an air-tight seal between the tape and the insulation board. Create continuous air/water barrier at roof and foundation wall interface using peel-and-stick membrane, or other approved barrier, following manufacturer's application instructions.
9. Seal penetrations and panel defects with recommended sealant in accordance with the manufacturer's instructions.
10. Repair any boards damaged during installation. Patch holes less than 1 inch across with flashing tape. Patch holes greater than 1 inch across with matching board material and then seal with flashing tape.
11. As applicable, the wall is now ready for stud cavity insulation and exterior veneer. Install approved cladding systems as soon as possible, preferably within 60 days.

Option 2: Installation Direct to Exterior Metal Studs

Insulation boards must be at least 1 inch thick to be installed directly to metal framing.

1. Begin installation after structural steel and exterior framing and bracing are complete.
2. Install boards horizontally (preferred) using maximum board length to minimize the number of joints. The reflective side of the board should be oriented to the exterior, and the non-reflective white side should be oriented to the interior. Locate joints parallel to framing flange. Stagger each course at least one stud space to minimize continuous vertical seams. Boards may be installed vertically if less seam sealing results.
3. Fasten insulation boards to the exterior face of the stud framing using recommended fasteners with the length in Table I. Fasteners must be long enough that at least three full threads are visible inside the wall framing.
4. Space fasteners 16 inches on center at the board perimeter, and 16 inches on center in the field of the board as shown in Figure 2. One fastener/plate can bridge between a maximum of two adjoining board edges. Drive fasteners so the stress plate is tight and flush with the board surface, but do not countersink.
5. Install exterior cladding ties as applicable.
6. To create an air/water-resistive barrier, tape all seams, edge and end joints, and thru-wall penetrations with recommended flashing tape as shown in Figures 3 - 5. Install flashing shingle-style with a minimum 4 inch overlap, and follow the tape manufacturer's application instructions. Seal fastener penetrations by applying a minimum 4-inch by 4-inch piece of tape over each plate, smoothing tape edges to create an air-tight seal between the tape and the insulation board. Create continuous air/water barrier at roof and foundation wall interface using peel-and-stick membrane, or other approved barrier, following manufacturer's application instructions.
7. Seal penetrations and panel defects with recommended sealant in accordance with the manufacturer's instructions.
8. Repair boards damaged during installation. Patch holes less than 1 inch across with flashing tape. Patch holes greater than 1 inch across with matching board material and then seal with flashing tape.
9. As applicable, the wall is now ready for stud cavity insulation and exterior veneer. Install approved cladding systems as soon as possible, preferably within 60 days.
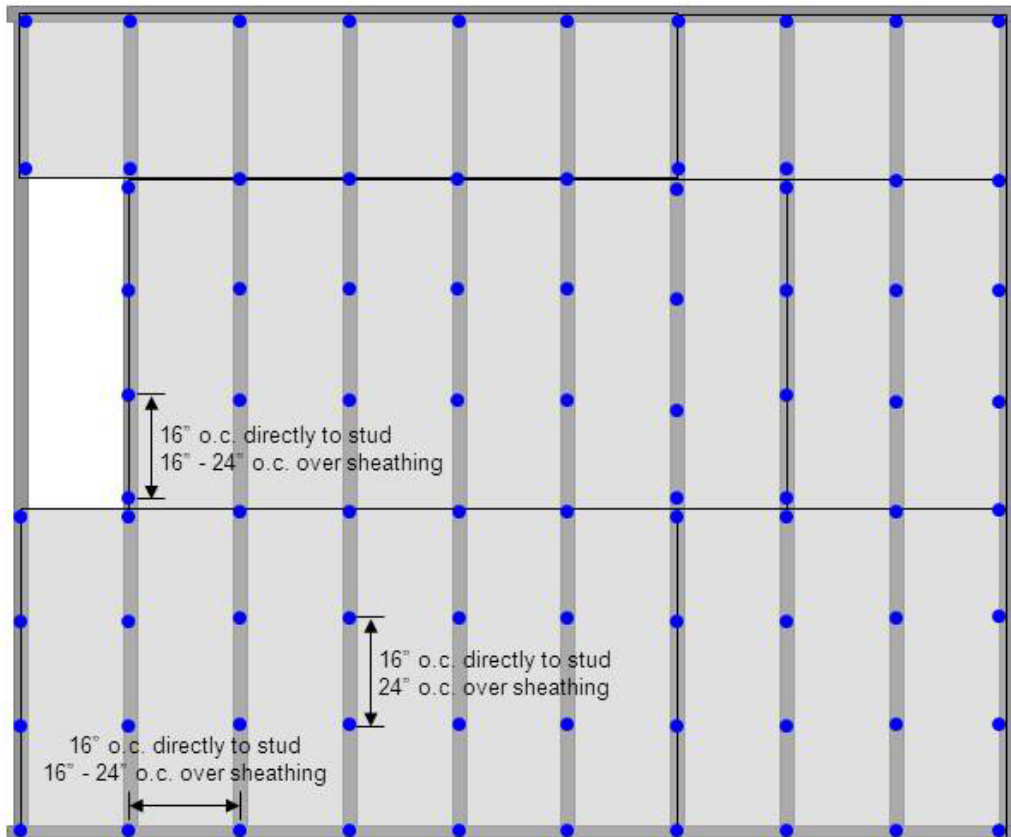
Product Storage Recommendations

1. Store AP™ Foil flat on pallets elevated above the floor or ground and standing water. As with all construction materials, if stored outdoors keep dry by covering completely with a waterproof tarpaulin. If insulation boards get wet, allow them to air dry before covering with exterior coverings.
2. Insulation boards are lightweight and can be blown around by wind. Weigh down loose boards until they are securely attached to the structure.
3. For both indoor and outdoor storage, adhere to all local building and fire codes. (References include NFPA 230 "Standard for the Fire Protection of Storage," NFPA 13 "Standard for the Installation of Sprinkler Systems" and applicable ICC or local building codes.)

Table 1. Recommended Insulation Fastener Length

Installed Directly to Metal Stud		Installed Over 5/8" Exterior Sheathing	
Insulation Thickness (inches)	Fastener Length (inches)	Insulation Thickness (inches)	Fastener Length (inches)
1.00	1.75	0.50	2.00
1.20	2.00	0.625	2.25
1.50	2.25	0.75	2.25
1.55	2.25	1.00	2.50
1.65	2.50	1.50	3.00
2.00	2.75	2.00	3.50
2.50	3.25	2.50	4.00
3.00	3.75	3.00	4.50
3.50	4.25	3.50	5.00
4.00	4.75	4.00	5.50
4.50	5.25	4.50	6.00
Special Order Thicknesses	thickness + 0.75"	Special Order Thicknesses	thickness + 1.50"

Figure 2. Recommended Fastener Spacing

16" o.c. directly to stud
16" - 24" o.c. over sheathing

16" o.c. directly to stud
24" o.c. over sheathing

16" o.c. directly to stud
16" - 24" o.c. over sheathing

Recommended Fastener Spacing
- Installed Over Exterior Sheathing: 16 - 24 inches o.c. perimeter, 24 inches o.c. field
- Installed Directly to Metal Studs: 16 inches o.c. perimeter, 16 inches o.c. field

FIGURE 3. TYPICAL WINDOW FLASHING DETAIL

1. Install Sill Flashing

2. Install Window, then Jamb Flashing
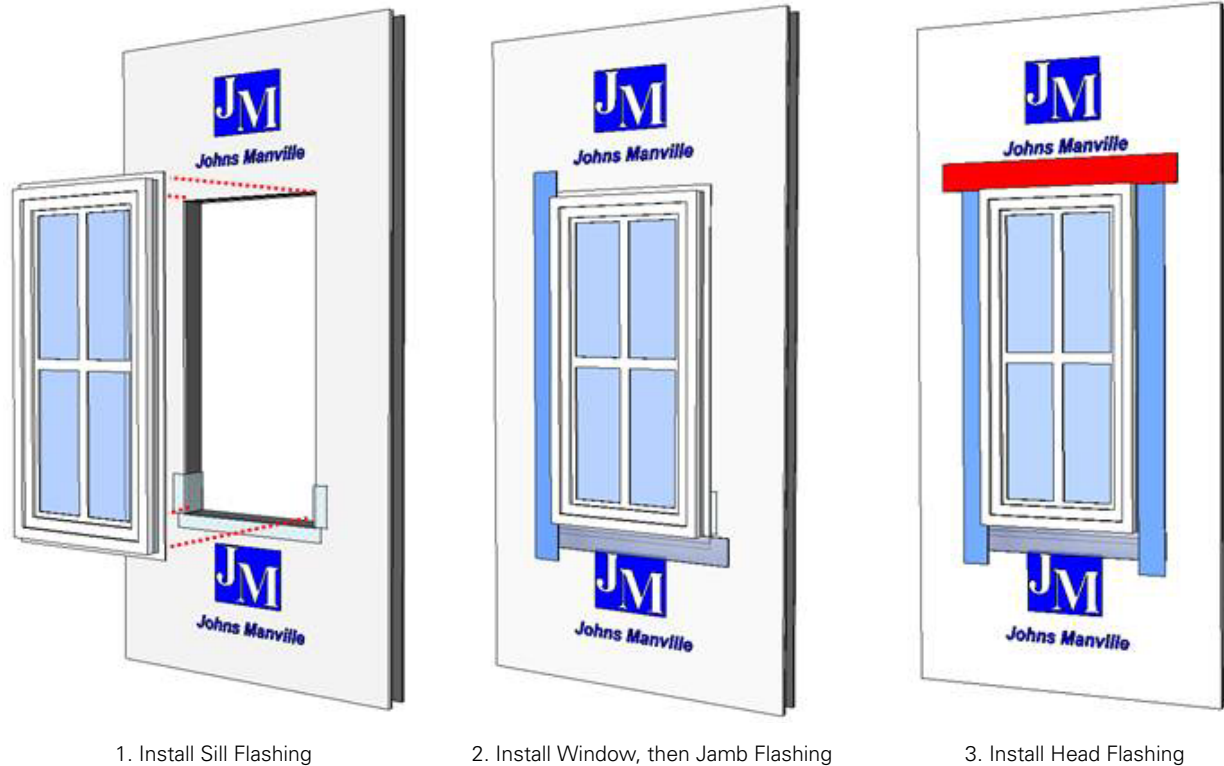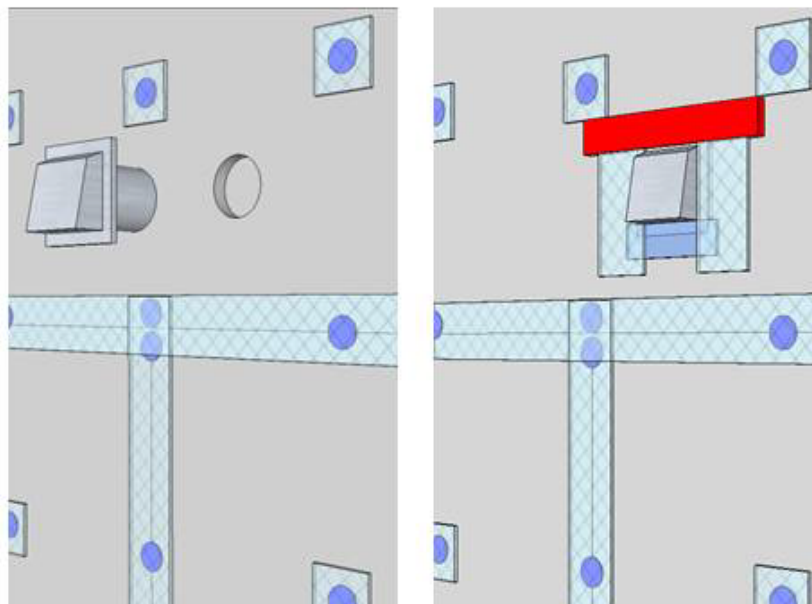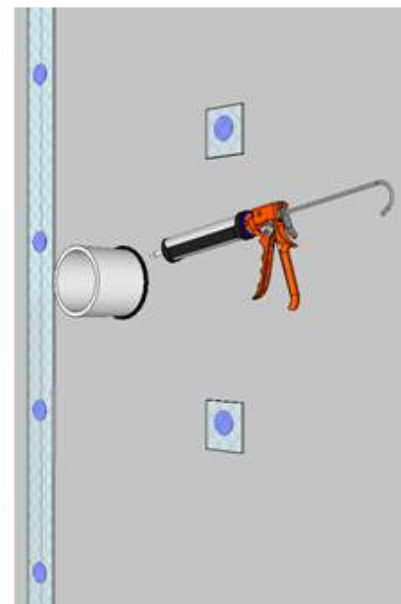
3. Install Head Flashing

FIGURE 4. TYPICAL PENETRATION
FLASHING DETAIL - FLANGED

1. Install flanged penetration cover.

2. Apply tape in shingle fashion order; lower edge, then sides, then top.

FIGURE 5. TYPICAL PENETRATION
FLASHING DETAIL - UNFLANGED

1. Install unflanged item. Apply caulk to seal penetration in accordance with manufacturer's instructions.