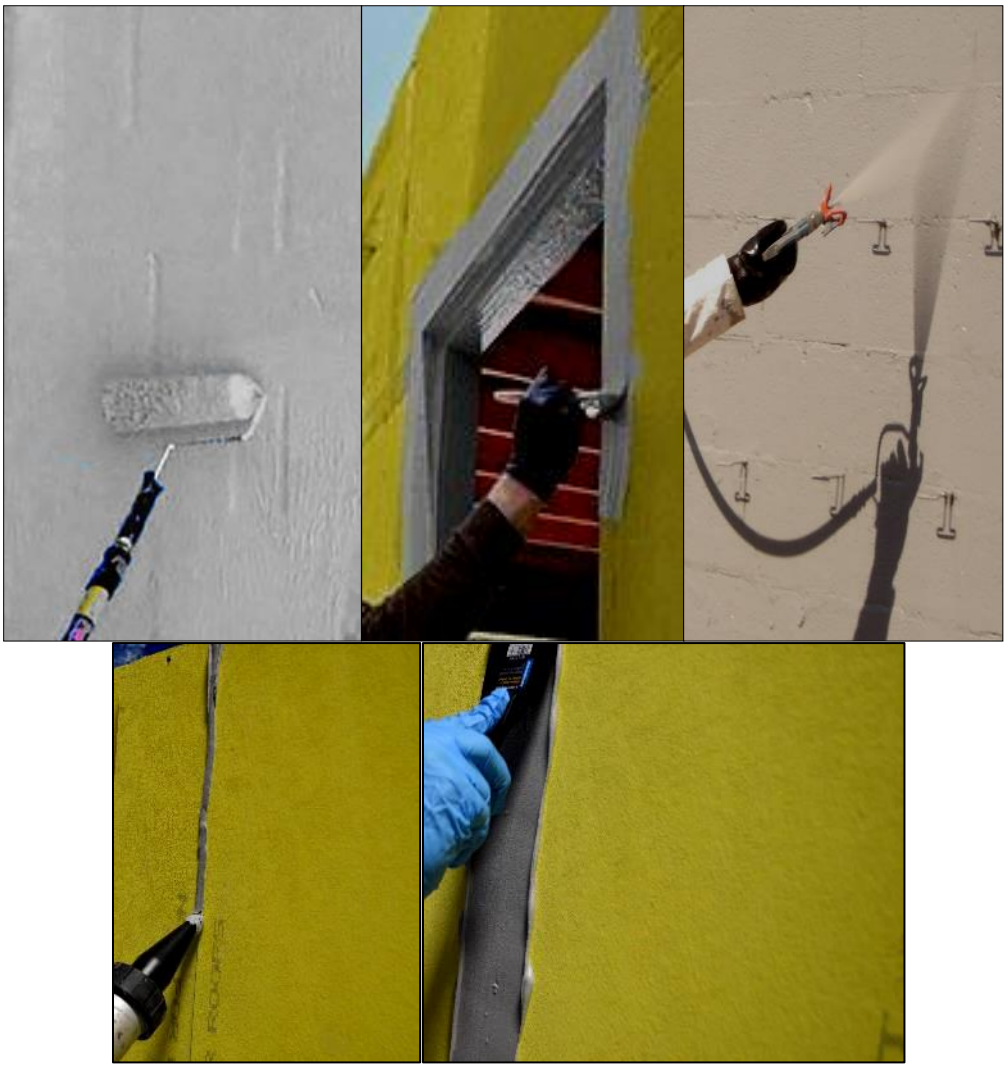
AIRLOK® STPE WRB

Air & Water Resistive Barrier System

Installation Guidelines



Polyguard®

Innovation based. Employee owned. Expect more.

Integrated Building Envelope®

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SYSTEM DESCRIPTION

Airlok® STPE WRB is a seamless fluid applied Air & Water Resistive Barrier system of products designed to protect the building envelope. Approved assemblies and applications listed below incorporate the **Airlok® STPE WRB** product line and accessories. These products when used as a system are designed to provide the most advanced seamless assembly incorporating rough openings, penetrations, transitions with the field air and water resistive barrier that protects the building envelope from air and moisture infiltration, increases energy efficiency, guards against moisture damage and defends the structure against mold growth.

AIRLOK® STPE WRB PRODUCTS

AIRLOK® SPRAY-N-ROLL

Spray-N-Roll is a single component, Silyl Terminated Polyether (STPE), 90% solid moisture-cured, elastomeric fluid applied above grade air & water resistive barrier and vapor permeable coating that combines the best of silicone and polyurethane properties. It is spray, roller or brush applied to produce a durable, seamless, permeable air & water resistive barrier. Typical applications include coating masonry walls, masonry cavity walls, poured walls, precast walls, plywood, oriented strand board (OSB), and exterior-grade gypsum sheeting surfaces which will be covered with an exterior facade.

AIRLOK® FLASH-N-ROLL

Flash-N-Roll is a single component, Silyl Terminated Polyether (STPE), 100% solid moisture-cured, elastomeric, roller applied above grade vapor permeable air & water resistive barrier and fluid flashing that combines the best of silicone and polyurethane properties and produces a durable, seamless membrane.

AIRLOK® GUN-N-SPREAD

Gun-N-Spread is a single component, Silyl Terminated Polyether (STPE), 100% solid moisture-cured, elastomeric, gun and trowel applied above grade vapor permeable opening fluid flashing that combines the best of silicone and polyurethane properties and produces a durable, seamless membrane.

AIRLOK® DETAIL-N-JOINT

Detail-N-Joint is a single component, Silyl-Terminated-Poly-Ether (STPE), 100% solid moisture-cured, elastomeric, tube and trowel applied above grade fiber filled joint filler and transition fluid flashing that combines the best of silicone and polyurethane properties and produces a durable, seamless membrane.

DETAIL SEALANT PW™

Detail Sealant PW™ is a single component, Silyl Terminated Polyether (STPE), 100% solid moisture-cured, elastomeric, tube and trowel applied joint filler, fluid flashing and sealant that combines the best of silicone and polyurethane properties and produces a durable, seamless membrane. It is an environmentally-friendly, non-isocyanate product that replaces silicone and urethane sealants.

TYPICAL USE, PACKAGING AND COVERAGE

Component	Primary Use	Packaging	Coverage
Airlok® Spray-N-Roll	Field Air & Water Resistive Barrier	5 Gal Pail, 50 Gal drum	23 mils wet, 69 sq ft/gal
Airlok® Flash-N-Roll	Opening Flashing/Field Air & Water Resistive Barrier	3 Gal Pail, 5 Gal Pail	25 mils wet (flashing) 20 mils wet, 80 sq ft/gal (field)
Airlok® Gun-N-Spread	Opening & Board Joint Flashing	20 oz Sausage Tube	25 mils wet
Airlok® Detail-N-Joint	Board Joint/Transition Flashing & Joint Filler	20 oz Sausage Tube	25 mils wet (flashing), 60 mils wet (transition flashing) Varies (joint filler)
Detail Sealant PW™	Opening/Board Joint Flashing & Joint Filler	20 oz Sausage Tube	25 mils wet (flashing), Varies (joint filler)

BUILDING & ENERGY CONSERVATION CODES AND STANDARDS

INTERNATIONAL BUILDING CODE

Chapter 14, Section 1403 of the International Building Code requires that "Exterior walls shall provide the building with a weather-resistive exterior wall envelope. The exterior wall envelope shall include flashing, as described in section 1405.3. The exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the exterior veneer, as described in section 1404.2, and a means of draining water that enters the assembly to the exterior."

ASHRAE

The US Department of Energy has encouraged the adoption of energy conservation codes. The **Airlok® STPE WRB** system meets or exceeds the meets or exceeds these code requirements to include ASHRAE 90.1 Model Energy Code air barrier requirements.

ABAA

The **Airlok® STPE WRB** system is in the process of the following ABAA evaluation testing:

ABAA EVALUATION TESTING

Fluid Applied Membranes					
Product Property	**Test Standard**	**Test Standard Title**	**Unit**	**Requirement**	
				Min	**Max**
Air Permeance	ASTM E2178-11	Standard Test Method for Air Permeance of Building Materials	cfm /ft²at a pressure differential of 1.57 psf	-	0.004
			(L/(s•m²) at a pressure differential of 75 Pa)	-	(0.02)
Water Resistance	AATCC 127 -2008	Water Resistance: Hydrostatic Pressure Test for 5 h	inches	22	-
			(cm)	(55)	
Self-Sealability	ASTM D1970 / D1970M - 11	Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection - Section 8.9 Nail Seal ability	-	Pass or specify sealing detail around fasteners	-
Pull Adhesion	ASTM D4541- 09e1	Modified Version of Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete using Portable Pull-Off Adhesion Testers– Specify substrates and surface preparation for glass fiber faced gypsum sheathing and concrete block. Declare failure mode.	psi	16 or report value at substrate failure	
			(kPa)	(110) or report value at substrate failure	-
Crack Bridging	ES-AC 212	Acceptance Criteria for Water-Resistive Coatings used as Water-Restive Barriers over Exterior Sheeting	-	Pass	-
	OR				
	ASTM C1305- 08	Standard Test Method for Crack Bridging Ability of Liquid Applied Waterproofing Membrane– Report thickness and joint treatment (158° for 2 weeks)	-	Pass	-
Water Vapor Permeance (at applied thickness)	ASTM E96/E96M-10 (Desiccant and Water Methods)	Standard Test Methods for Water Vapor Transmission of Materials	US Perms (ng/(Pa·s·m²))	Declare	

Air Barrier Assembly Testing			
Product Property	**Test Standard**	**Test Standard Title**	**Requirement**
Assembly Air Leakage	ASTM E2357- 11	Standard Test Method for Determining Air Leakage of Air Barrier Assemblies	Not greater than: 0.04 cfm/ft² at a pressure differential of 1.56 lb./ft²
			[0.20 L/(s∘m²) at a pressure differential of 75 Pa] when tested in both directions

APPLICATION CONDITIONS

The **Spray-N-Roll** and **Flash-N-Roll** (as the field) can be applied before or after detailing with either **Flash-N-Roll**, **Gun-N-Spread**, **Detail-N-Joint** and/or **Detail Sealant PW™**.

The **Spray-N-Roll** and **Flash-N-Roll** (as the field) can be applied before or after flashing with either **Flash-N-Roll**, **Gun-N-Spread**, **Detail-N-Joint**, **Detail Sealant PW™, Airlok® 200 Series or Airlok® 400 Series.**

Do not dilute or mix the **Spray-N-Roll**.

For best results when applying **Spray-N-Roll** with a roller, use a 1/4" or 3/8" nap woven roller.

For best results when applying **Flash-N-Roll** with a roller, use a 1/4" nap woven or high-density foam roller for the field and use a high-density foam hotdog roller for flashings.

No primer is needed except on the cut edges of gypsum sheathing.

Allow 6 hours for the **Spray-N-Roll** or **Flash-N-Roll** to cure before continuing work on the surface. Allow additional time for low humidity climates. For arid climates, add moisture to the curing process by means of a mister.

The **Airlok® STPE WRB** system is designed for UV exposures for up to 6 months. For periods of (UV) exposure greater than 6 months, contact Polyguard® to inspect the **Airlok® STPE WRB** system condition.

The **Spray-N-Roll** can be sprayed in ambient temperatures from 40°F (5°C) to 110°F (44°C). It can be applied in temperatures down to 25°F with additional procedures.

The **STPE WRB** system products shall be applied to clean, sound and dust free surfaces and can be applied to damp surfaces which are clear of detectable surface water, frost, ice or snow.

Protect all surfaces that are not intended for coverage. If any spilling occurs, immediately clean up with mineral spirits or similar.

Clean all tools and equipment immediately after use with mineral spirits or similar.

If a partial tube is used, simply plug the nozzle and store within the sausage gun.

When repair is needed or stop point is established, any product within the **Airlok® STPE WRB** system can later be applied to clean and cured product creating a continuous system without seams.

SURFACE PREPARATION

PRIMING

No primer is needed except on the cut edges of gypsum sheathing. In these instances, use a chip brush to prime the cut edges with either Polyguard® product; 650 LT Adhesive, 650 WB Liquid Adhesive, or California Sealant. For best results, apply **Airlok® STPE WRB** system products directly to clean, structurally sound and dust free substrate joints and surfaces, i.e. masonry, poured concrete, precast walls, plywood, OSB, and exterior-grade gypsum sheathing surfaces. **Airlok® STPE WRB** system components can be applied to damp surfaces which are substrates clear of detectable surface water, frost, ice or snow.

Note: Load a sausage gun with either **Detail-N-Joint** or **Detail Sealant PW™** and cut the nozzle/tip on approximately a 30-degree angle creating approximately a 1/2" diameter hole.

SHEATHING

Gypsum

Ensure that the gypsum surface is clean, dust free, secured properly to the wall structure and in serviceable condition. Fill and tool voids larger than 1/8" and all fastener heads that broke the surface flush with **Detail Sealant PW™** or **Detail-N-Joint.** Refer to the ***Detailing/Flashing*** section for additional information.

Oriented Strand Board (OSB)

The same instructions for gypsum sheathing apply. Replace OSB that is swollen and/or delaminating from moisture retention.

Plywood

The same instructions for gypsum sheathing apply. Replace plywood that is swollen and/or delaminating from moisture retention. Fill and tool knot holes greater than 1/16" deep and/or 1/8" in diameter flush with **Detail Sealant PW™** or **Detail-N-Joint.**

ROUGH OPENINGS

Ensure the rough opening substrate is free of all debris and contaminants. The wall and opening structure should be sound and in serviceable condition. The seam/joint between gypsum sheathing and metal or wood studs must be covered with 25 mils of **Detail-N-Joint**. All voids up to ¼" shall be filled and tooled flush with **Detail Sealant PW™** or **Detail-N-Joint**. Voids in excess of 1/4" may have a closed cell backer rod installed before tooled application of the **Detail Sealant PW™**. Set the backer rod to industry standard based on the joint size. Apply and tool a 3/8" cant bead of **Detail Sealant PW™** or **Detail-N-Joint** to each corner.

CONCRETE/MASONRY

Ensure the concrete is prepared and cleaned free of all debris, contaminants and residual oils from form boards. All voids greater than 1/8" shall be filled and tooled flush with **Detail Sealant PW™** or **Detail-N-Joint**.

INSTALLATION INSTRUCTIONS

AIRLOK® SPRAY-N-ROLL

Membrane Application

The **Spray-N-Roll** can be applied before or after detailing with either **Flash-N-Roll, Gun-N-Spread, Detail-N-Joint** and/or **Detail Sealant PW™**.
Do not dilute or mix the **Spray -N-Roll**.

Apply **Spray-N-Roll** in one coat; by means of a sprayer, roller, or brush; to achieve a continuous film at the desired minimum coverage rate of 69 square feet per gallon (23 wet mils). Additional material may be necessary on rougher or more porous substrates.

For Airless Sprayer Application

When applying with a power sprayer, the following spray equipment has been approved for use with **Spray-N-Roll**: Titan Speeflo / Power twin 12000 plus or Graco GH 833 or GH 733 reversible spray tip sizes to be 0.021 through 0.029. Tip size will vary predicated upon the psi at the tip. Gun S-7 3/8 swivel / 2ft gun extension. Hose length of 100ft 3/8 5800 psi sprayer pressure to be set at 3300 to 4000 psi.

Ensure that equipment is serviceable.

Start the airless sprayer pump (startup procedures vary predicated on the pump brand) and adjust the pressure while expelling the solvent that remains in the pump system into an appropriate container until no more solvent runs out.

Open the pail or drum and immediately place the pickup tube into the pale or drum.

Adjust the pressure as the trigger is engaged allowing the **Spray-N-Roll** to circulate through the pump. Continue to spray the combination of the product and remaining solvent into an appropriate container until only the product remains.

Make minor adjustments to the pressure as needed while spraying until the optimum spray pattern is achieved. Setting will vary based upon temperature, humidity and individual pump.

Spray around any penetrations first, then spray the field using horizontal then vertical strokes to ensure a continuous and complete application.

Check the wet film thickness frequently to ensure a minimum of 23 wet mils.

When application operation ceases temporarily for more than ½ hour, remove the pickup tube from the product and expel the remaining product back into the pale or drum until no more remains in the pump.

Then circulate solvent (mineral spirits) through the pump and allow it to remain until operation begins again. Follow the startup procedures to resume the spraying operation.

When the spray operation is completed for the day, completely expel the remaining product from the pump back into the pale or drum. Then thoroughly flush the pump until only solvent is expelled. Then remove the pumps strainer and clean it separately. Turn the pump to recirculate and continue to flush until only clear solvent is expelled. Reinstall the strainer and allow solvent to remain in the pump and hose until the next use.

Finally, every 3 to 4 weeks or the end of the project (whichever comes first) perform the pump manufacturer's preventative maintenance procedure.

For Power Roller Applications

For best results when applying with a power roller, use a 1/4" to 3/8" woven nap or high-density foam roller.

Follow the pump start up procedures listed under the airless sprayer application procedures.

Apply **Spray-N-Roll** around penetrations with a brush or manual roller first.

Engage the trigger on the power roller while applying the **Spray-N-Roll** in either the up or down stroke and release the trigger for the opposing stroke.

Move the power roller half way across the first application and repeat the previous step.

Check the wet film thickness frequently to ensure a minimum of 23 wet mils.

Continue this process until there is continuous and complete coverage.

Follow the procedures for temporary work stoppages, end of day cleaning and end of project cleaning.

Spray or Power Roll BETWEEN 25°F (-4°C) AND 40°F (5°C)

Ensure that the **Spray-N-Roll** was stored above 50°F (11°C) for at least a few days.

Insulate the hose with pipe insulation. Wherever possible keep the product at 50°F (11°C) or above.

For Manual Rolling Applications

For best results when applying with a manual roller, use a 1/4" or 3/8" woven nap or high-density foam roller.

Apply **Spray-N-Roll** around penetrations with a brush or hotdog roller first.

Then use the same overlapping procedure as indicated in the power roller application instructions.

AIRLOK® FLASH-N-ROLL

Membrane Application

The **Flash-N-Roll** can be applied before or after detailing with either itself**, Gun-N-Spread, Detail-N-Joint** and/or **Detail Sealant PW™**.
Do not dilute or mix the **Flash-N-Roll**.

Apply **Flash-N-Roll** in one coat; by means of a roller, or brush; to achieve a continuous film at the desired minimum coverage rate of 80 square feet per gallon (20 wet mils). Additional material may be necessary on rougher or more porous substrates.

For best results when applying with a manual roller, use a 1/4" or 3/8" woven nap or high-density foam roller.

Apply **Flash-N-Roll** around penetrations with a brush or hotdog roller first.

Then use the same overlapping procedure as indicated in the power roller application instructions.

AIRLOK® FLASH-N-ROLL, AIRLOK® GUN-N-SPREAD, AIRLOK® DETAIL-N-JOINT, DETAIL SEALANT PW™

Detailing/Flashing

Follow the ***Surface Preparation*** instructions before proceeding with detailing and flashing.

Detailing/flashing can be performed before or after application of **Spray-N-Roll** or **Flash-N-Roll**.

Load a sausage gun with either **Detail-N-Joint** or **Detail Sealant PW™** and cut the nozzle/tip on approximately a 30-degree angle creating approximately a 1/2" diameter hole.

Rough Openings

Apply either the **Flash-N-Roll, Gun-N-Spread, Detail-N-Joint** and/or **Detail Sealant PW™** at 25 mils at least 3" out from the opening and on to the substrate and at least 3" in to the opening and on to the rough opening surface. **Gun-N-Spread, Detail-N-Joint** and/or **Detail Sealant PW™** can be applied with a trowel or **Flash-N-Roll** can be applied with a high-density "hot-dog" roller or chip brush.

Check the wet film thickness frequently to ensure a minimum of 25 wet mils.

Ensure continuous and complete coverage.

Sheathing Joints

Joints that are 3/16" or less: Apply **Detail-N-Joint** or **Detail Sealant PW™** in a shallow zig zag pattern overlapping the joint at least 1" on either side. Utilizing a spatula or trowel draw down the joint leaving a 25 mil flashing strip.

Joints 1/4" or larger: Apply a bead of **Detail-N-Joint** or **Detail Sealant PW™** directly into the joint filling it completely. Then follow the instructions for joints 3/16" or less.

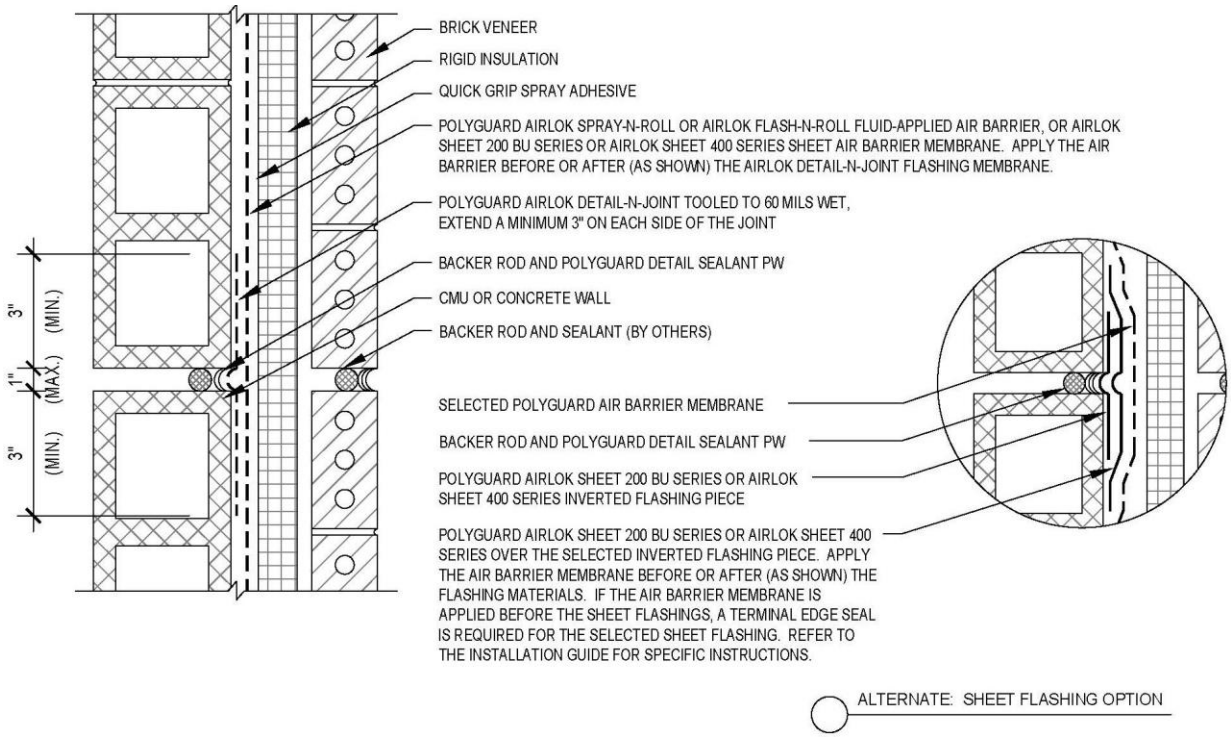
Transition & Expansion Joints up to 1-inch wide

1. Install an appropriately sized closed cell backer rod into the open joint. Then fill joint with **Detail Sealant PW™** and tool. This can be applied before or after the **Spray-N-Roll** or the **Flash-N-Roll**.

2. Trowel 60 mils of **Detail-N-Joint** on the surface at least 3" on either side of the joint.

See Detail STPE6 on next page

STPE6 PLAN @ DUAL BACKING WALL/MASONRY VENEER – EXPANSION JOINT

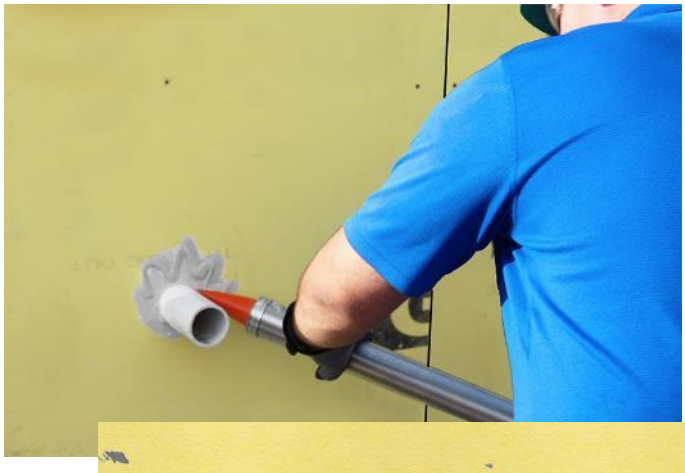


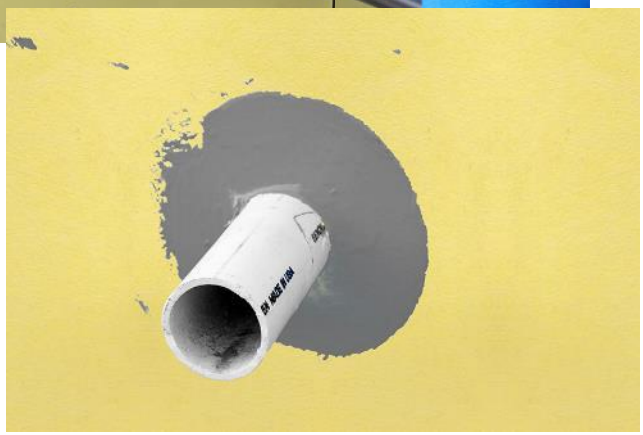
OR

Follow the instruction within the ***Sheet Flashing Installation*** section.

Penetrations

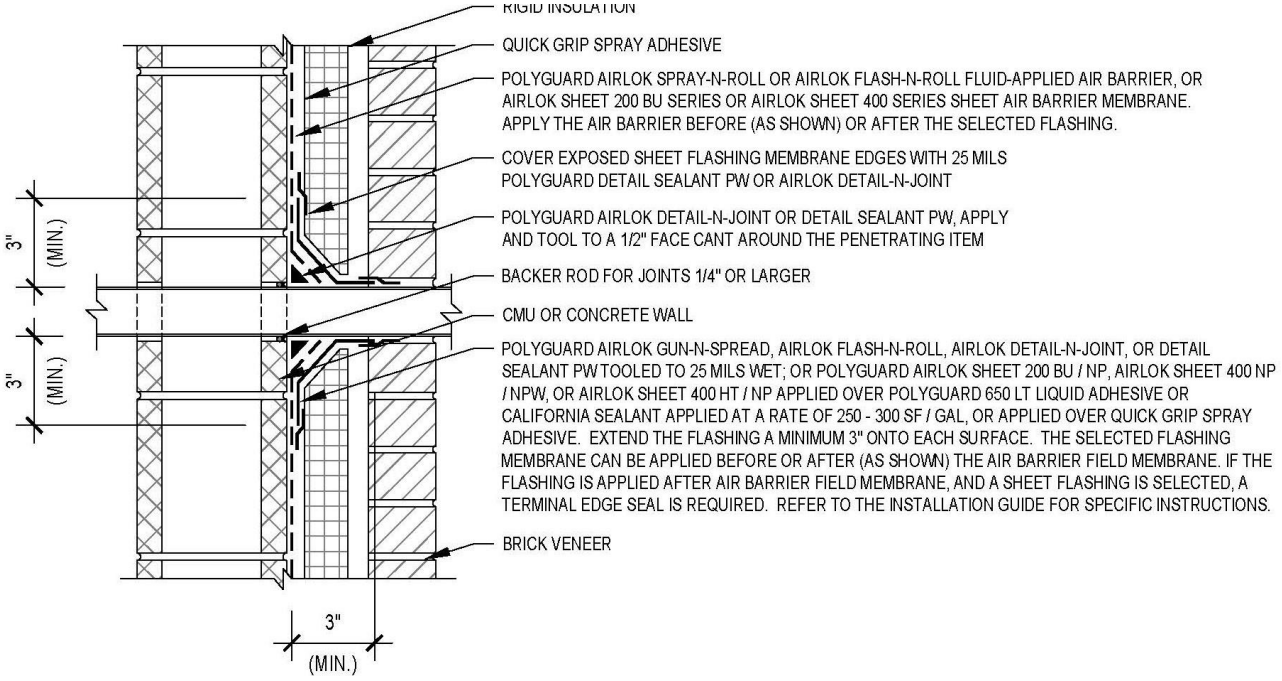
Use **Detail-N-Joint** or **Detail Sealant PW™** to seal around all penetrations in the building envelope. All gaps and voids around the penetration in excess of 1/4" of an inch must be filled with closed cell backer rod and/or closed cell expanding foam. Scuff the penetration and caulk around the transition between the penetration item and the substrate with **Detail-N-Joint** or **Detail Sealant PW™** ensuring at least a 1/2" tooled cant bead. It is critical that the cant bead have at least ¼" surface contact with the substrate to ensure proper performance of the cant bead.





Then apply 25 mils of either **Flash-N-Roll, Gun-N-Spread, Detail-N-Joint** and/or **Detail Sealant PW™** onto the penetration itself at least 3" out and 25 mils onto the substrate at least 3".

STPE8 SECTION @ CMU BACKING WALL/MASONRY VENEER – PENETRATION



SHEET FLASHING INSTALLATION

When sheet flashings are to be used, apply either of the Polyguard® sheet flashings as follows:

1. Follow the ***Surface Preparation*** instructions before installing Polyguard® sheet flashings.

2. Apply either of the **Airlok® STPE WRB** products as follows:
    a. **Spray-N-Roll** – 23 mils wet over the surface to be covered with sheet flashing. Allow to cure for at least 6 hours.
    b. **Flash-N-Roll** – 20 mils wet over the surface to be covered with sheet flashing. Allow to cure for at least 6 hours.
    c. **Gun-N-Spread** – 20 mils wet over the surface to be covered with sheet flashing. Allow to cure for at least 6 hours.
    d. **Detail Sealant PW** - 20 mils wet over the surface to be covered with sheet flashing. Allow 1 hour to skin over before covering with sheet flashing.
    a. **Detail-N-Joint** – 20 mils wet over the surface to be covered with sheet flashing. Allow 1 hour to skin over before covering with sheet flashing.

3. Polyguard® sheet flashings can be installed directly over the **Airlok® STPE WRB** products without priming.

4. Follow Polyguard® sheet flashing installation instructions to apply the sheet flashing.

OR

1. Prime the raw substrate then follow Polyguard® sheet flashing installation instructions.

2. Then apply either of the **Airlok® STPE WRB** products up to and onto the Polyguard® sheet flashing at least 3”.

MEMBRANE REPAIR

Clean the damaged areas of the **Airlok® STPE WRB product** with denatured alcohol before recoating. The **Airlok® STPE WRB** system products will bond to each other without any additional surface preparation.

STORAGE

Protect cases from water, sparks, flames, excessive heat, and poor ventilation.

Keep out of direct sunlight and in ambient temperature range between -10°F (23°C) and 100°F (38°C).

For best application results, store in ambient temperatures above 50°F (11°C) and in compliance with local governing regulations.

If a partial tube is used, simply plug the nozzle and store within the sausage gun.

If a partial pail of the **Spray-N-Roll** or **Flash-N-Roll** is used, spray nitrogen into the pail and immediately cover with the supplied liner and close the lid.