



DuPont Performance Building Solutions

DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines

For Buildings Greater than 4 Stories and
High-Performance Installations of Any Height

March 2020

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DuPont™ Tyvek® Fluid Applied Air Barrier System

DuPont™ Tyvek® Fluid Applied WB+™

Tyvek® Fluid Applied Weather Barrier (WB+™) is a vapor permeable, low VOC, single-component product with excellent elasticity and flexibility. It is easily applied in one coat and has extremely low shrinkage during curing.

DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+

A full bodied, brush or trowel applied, vapor permeable elastomeric flashing material. It is used to coat rough openings for windows and doors, to fill seams, cracks and holes in the substrate, to seal around penetrations and to treat joints and transitions between building components.

DuPont™ Sealant for Tyvek® Fluid Applied System

Non-vapor permeable sealant specifically designed to work with the **DuPont™ Tyvek® Fluid Applied System**. **DuPont™ Sealant for Tyvek® Fluid Applied System** has excellent adhesion and elongation. It should be used to seal around windows, doors, and penetrations.

DuPont Commercial Self-Adhered Flashing for use with DuPont™ Tyvek® Fluid Applied Products

DuPont™ StraightFlash™

A premium self-adhered membrane used for flashing windows and doors, to treat transitions and for terminations. It is made with **DuPont™ Tyvek®** and a 100% butyl-based adhesive layer.

DuPont™ FlexWrap™ and FlexWrap™ EZ

Premium extendable self-adhered flashing materials that efficiently conform around corners and irregular shapes. Made with **Tyvek®** and a 100% butyl-based adhesive layer.

Applicable Products

DuPont™ Tyvek® Fluid Applied Products

Product	Quantity	Coverage
DuPont™ Tyvek® Fluid Applied WB+™	5 gal, 50 gal	50-65 sf/gal*
DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+	3.5 gal	50-60 sf/gal*
Tyvek® Fluid Applied Flashing and Joint Compound+ (for gypsum sheathing seam treatment)	28 oz	2.5–3.5 lf/oz
DuPont™ Sealant for Tyvek® Fluid Applied System	28 oz	N/A

*Estimated surface coverage at 25 mils thick.

DuPont Self-Adhered Flashing Products

Product	Width
DuPont™ FlexWrap™ (formerly DuPont™ FlexWrap™ NF)	6 in 9 in
DuPont™ FlexWrap™ EZ	2.75 in
DuPont™ StraightFlash™	4 in 9 in

Required Materials Based on Project Requirements, Details, and Specifications

Product

- DuPont™ Adhesive/Primer

Coverage Rates

Coverage rates may vary depending on application technique and substrate condition.

Tyvek® Fluid Applied WB+™ applied at a minimum thickness of 25 mils wet will offer a theoretical coverage (not including waste) as shown in the table below.

Wall Substrate	Concrete Masonry Unit (CMU)	Exterior Gypsum Sheathing	Oriented Strand Board (OSB)	Plywood
Theoretical Coverage Rate	~ 50 sq.ft/gal	~ 65 sq.ft/gal	~ 60 sq.ft/gal	~ 60 sq.ft/gal

The installing professional should set a goal to ensure membrane is continuous (free of pinholes and voids) at an average thickness of 25 mils.

Safety, Handling, and Storage

WARNING: For Professional Use Only. Read and follow the entire Safety, Handling, and Storage section and the Safety Data Sheets (SDSs, formerly MSDSs or Material Safety Data Sheets) carefully before use. The information below is designed to protect the user and allow for safe use and handling of **DuPont™ Tyvek® Fluid Applied Products**. Follow all applicable federal, state, local and employer regulations.

Precautionary Statements

Use only as directed. Avoid inhalation of vapor aerosol. Avoid breathing dust/fumes/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER/doctor. If skin irritation or rash occurs: Get medical advice/ attention. Wash contaminated clothing before reuse. Store locked up. Dispose of contents/ container to an approved waste disposal plant. Vapor and aerosols are harmful if using spray application. Use in a well-ventilated area. Use NIOSH approved respirator. If vapors are inhaled, immediately move from exposure to fresh air and contact a physician. Avoid contact with eyes and skin. See Personal Protective Equipment section below.

Hazard Statements

May cause an allergic skin reaction. May cause serious eye damage. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. May cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause irritation of respiratory tract. This product is a mixture. Health Hazard information is based on its components. **KEEP OUT OF REACH OF CHILDREN**, children can fall in to bucket and drown. Keep children away from bucket with even a small amount of liquid.

Personal Protective Equipment (PPE)

Personal protective equipment (PPE) used during the handling of **DuPont™ Tyvek® Fluid Applied Products** must at a minimum include:

- Protective clothing or coveralls, including long sleeves and head cover (no skin should be exposed), for example, **DuPont™ Tyvek®** non-woven laminate paint protective coveralls with hood
- Chemical-resistant nitrile, butyl rubber, neoprene or PVC gloves
- Chemical splash impact safety goggles or equivalent, unless using a full-face respirator
- Protective work safety shoes
- Hearing protection such as ear plugs when spraying

- NIOSH-approved particulate filtering full-face respirator with a P95 particulate filter or half-mask respirator with a P95 particulate filter and splash impact goggles when spraying
- NIOSH-approved N95 disposable safety mask with splash impact goggles for manual application such as troweling or rolling, and for clean-up.

Clean Up and Purge

Use appropriate personal protective equipment during clean-up (see Personal Protective Equipment section). Uncured **DuPont™ Tyvek® Fluid Applied Products** can be cleaned from hands, tools, and equipment by using a citrus based cleaner or mineral spirits. Cured **Tyvek® Fluid Applied Products** can be removed by soaking in citrus based cleaners or using a gel-based paint stripper.

Clean sprayer components and tools with 100% mineral spirits, naphtha, citrus-based cleaners, or gel-based paint stripper. Material should not be left in the pump, hose, gun, or roller. After applying, flush system with a citrus-based cleaner, or 100% mineral spirits until the system is clean. Avoid using water for cleanup. Low pressure portions of the system should be taken apart and cleaned by hand. Before the next usage, flush any remaining solvent out of the system before applying **DuPont™ Tyvek® Fluid Applied WB+™** to the wall substrate. Be sure that system is fully clean of any residual **Tyvek® Fluid Applied Product** before introducing a different product. If system is not fully clean, ingredients can react and cause products to cure in the system. Spray tips can be cleaned in 100% mineral spirits or naphtha using airbrush cleaning tools.

Shelf Life and Storage

The shelf life is 12 months for an unopened container from the date of manufacture. Reference the “Use By” date printed on the container. Store opened containers with a plastic protective liner to slow cure rate. Before reusing a previously opened container, first remove any cured material that may have formed (skinned over) at the top.

Tyvek® Fluid Applied Products should be stored in a clean, dry environment, 50°- 80°F (10° - 27°C). If stored at temperatures below 65°F (18°C), the product must be warmed to a minimum of 65°F (18°C) prior to spraying using standard industry methods for proper atomization at the spray tip. Continuous storage at high temperatures will reduce the shelf life of **Tyvek® Fluid Applied Products**. **Tyvek® Fluid Applied Products** temporarily stored outside should be stored under cover.

Disposal

Dispose of any residual **Tyvek® Fluid Applied Product**, coated debris, or solvent in accordance with applicable federal, state, and local government regulations.

Supplemental Information

Avoid spraying **Tyvek® Fluid Applied WB+™** in very windy conditions. Installing professional should consider if structure should be tented to protect the surrounding area from overspray. Avoid spraying in very dusty conditions.

Weather Barrier & Energy Conservation Codes and Standards

The 2018 International Building Code (Section 1402.2 Weather Protection) requires that exterior walls shall provide the building with a weather resistant exterior wall envelope. 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 1403.2 and a means for draining water that enters the assembly to the exterior. The exterior wall envelope shall include flashing, as described in Section 1404.4. **Tyvek® Fluid Applied WB+™** has been tested to the following standards.

- ASTM E2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
- ASTM E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen
- ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Pressure
- ASTM E1677, Standard Specification for Air Barrier (AB) Material or System for Low-Rise Framed Building Walls
- ASTM E2178 Standard Test Method for Air Permeance of Building Materials
- ASTM E96, Standard Test Methods for Water Vapor Transmission of Materials
- ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- AATCC 127, Hydrostatic Head Test for WRB Materials, measuring pressure to failure or time of failure at a given pressure
- AAMA 711-13 - Specification for Self Adhering Flashing
- AAMA 714-15 - Voluntary Specification for Liquid Applied Flashing Used to Create a Water-Resistive Seal Around Exterior Wall Openings in Buildings
- NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation – Characteristics of Exterior Non-Load Bearing Wall Assemblies Containing Combustible Components
- AC 212 Acceptance Criteria for Water Resistive Coatings used as Water Resistive Barriers over Exterior Sheathing

Energy Conservation Codes for commercial buildings are being adopted in many regions across the U.S. When properly installed, **DuPont™ Tyvek® Fluid Applied Products** meet the following codes and guidelines.

- ASHRAE 90.1 Model Energy Code air barrier requirements
- 2012/2015 International Energy Conservation Code® (IECC)
- 2012/2015 International Green Construction Code® (IgCC)
- Minnesota Commercial Energy Code, Section 1323.0543, Section 5.4.3
- Massachusetts State Building Code 780 CMR 120.AA
- Wisconsin Building Code, Energy Conservation, Chapter Comm 63
- Michigan Building Code
- Rhode Island Building Code
- Georgia Building Code
- Florida Building Code

Warranty Information

Please call 1-800-448-9835 or visit www.fluidapplied.tyvek.com for complete warranty information.

Special Considerations

NOTE: DuPont™ Tyvek® Fluid Applied Products should only be used for wall systems that include a continuous path for drainage allowing moisture that penetrates the facade to exit to the exterior. The drainage path should be continuous throughout the wall assembly, including but not limited to areas such as eyebrows, band boards, penetrations, or other locations where transitions and changes of plane occur. For membrane drainage wall systems, ensure that the drainage path is not blocked or disrupted to prevent excess moisture buildup in the wall cavity. Proper shingling, sealing, and integration of the **Tyvek® Fluid Applied Products** with kick-out flashings, through wall membranes, window and door flashing, and other wall transitions is essential for moisture drainage to the exterior.

1. Suitable substrates include concrete masonry unit (CMU), concrete (>48 hours for green concrete), exterior gypsum, OSB, plywood, wood, treated wood and metal.
2. **Tyvek® Fluid Applied Products** should be installed on clean, dry surfaces. Wipe surfaces to remove moisture, dirt, grease and other debris that could interfere with adhesion.
3. **Tyvek® Fluid Applied Products** are designed for above grade application and should not be installed below grade.

4. When **DuPont™ Tyvek® Fluid Applied WB+™** is applied with a sprayer, the outer edges of all interfaces with **DuPont Self-Adhered Flashing Products** should be treated with **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** and tapered to the wall substrate to ensure smooth transitions free of pinholes and voids.
5. **Tyvek® Fluid Applied Products** can be applied to damp surfaces. A surface is considered damp if there is no visible water on the surface and no transfer of water to the skin when touched.
6. When applying **Tyvek® Fluid Applied Products** over wood-based substrates such as OSB, plywood, lumber, and treated lumber, the installing professional should ensure the moisture content, measured with a wood moisture meter in the core of the substrate, shall be below 20%. Do not cover wood based substrates with **Tyvek® Fluid Applied Products** if moisture content is 20% or above.
7. **Tyvek® Fluid Applied Flashing and Joint Compound+** can be troweled or brushed to the required thickness in any application outlined in the guide.
8. **Tyvek® Fluid Applied Products** should be applied when air and surface temperatures are above 25°F. Do not install once the ambient temperature exceeds 95°F (35°C), unless the application surface is shaded. The maximum surface temperature for application is 140°F (60°C).
9. For best results, the temperature of the **Tyvek® Fluid Applied Products** at the spray tip of standard spray equipment should be 65°F (18°C) or higher. This may require employing measures to keep the pump and spray equipment at temperatures above 65°F (18°C) and/or using an insulated hose. For more information, refer to the DuPont™ Tyvek® Commercial Solutions Technical Bulletin, *Additional Considerations When Spraying Tyvek® Fluid Applied WB+™*.
10. The maximum service of the final cured **Tyvek® Fluid Applied Products** is 180°F (82°C).
11. **Tyvek® Fluid Applied Products** may be overcoated once a tack-free skin has formed. Exterior insulation and/or exterior facade may be installed after **Tyvek® Fluid Applied Products** have cured for 48 hours. For more information, see the Drying/Curing section of this guide.
12. **Tyvek® Fluid Applied WB+™** may be applied over, and integrated with **DuPont™ Tyvek® Fluid Applied Flashing** once a tack-free skin has formed. Skin over time is ~1-2 hours at 70°F (20°C) 50% RH. Refer to table in the Drying/Curing section of this guide for more information.
13. Performance testing, included but not limited to peel adhesion, pull strength analysis, field or third party testing of air and/or water barrier properties, should be conducted after **Tyvek® Fluid Applied Products** are fully cured (~14 days).
14. DuPont requires that **Tyvek® Fluid Applied Products** be covered within 9 months of installation.

15. **DuPont Self-Adhered Flashing Products** perform best when air and surface temperatures are above 25°F (-4°C).
16. **DuPont™ Adhesive/Primer**, or recommended primer, is required when applying **DuPont Self-Adhered Flashing Products** on concrete, masonry, and fiber faced exterior gypsum board substrates. Priming is generally not required for adhering **DuPont Self-Adhered Flashing Products** to wood.
17. Priming is only required for **Tyvek® Fluid Applied Products** when applied to cut edges of exterior gypsum sheathing.
18. Uncured **DuPont™ Tyvek® Fluid Applied Products** must not come in contact with **DuPont™ Tyvek® Mechanically-Fastened Air and Water Barriers** due to potential impact on performance properties.
19. Stirring is not necessary. If separation occurs, gently fold material until mixture is uniform. Avoid any type of mixing that will introduce air into the product.
20. Asphalt based adhesives are not recommended for use with **DuPont™ Tyvek® Fluid Applied Products**.
21. Minor discoloration of the membrane at wood knots, sap, or sheathing inks may occur after curing.
22. When **Tyvek® Fluid Applied Products** are used as the primary air and water barrier, **Tyvek®** mechanically-fastened air and water barrier products may be installed as an “intervening layer” over **DuPont™ Tyvek® Fluid Applied Products** after 24 hours of curing at 70°F (20°C) and 50% RH. For additional information about the use of “intervening layers”, see the Stucco section under Facade/Exterior Considerations in this guide.
23. For **DuPont Self-Adhered Flashing Products**, remove all wrinkles and bubbles that may allow for water intrusion by smoothing surface and repositioning as necessary during installation.

For additional guidance, please call 1-800-448-9835, visit our website at www.fluidapplied.tyvek.com, or review the **DuPont™ Tyvek® Fluid Applied WB+™** System Frequently Asked Questions.

Installation Instructions

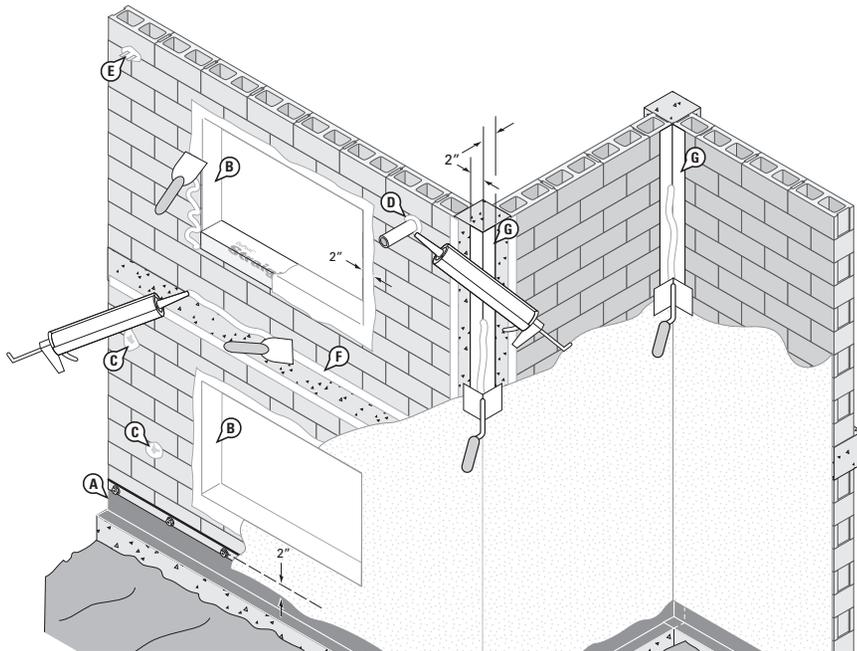
STEP 1: PREPARATION

Clean substrate by removing any substance that may affect the adhesion of **DuPont™ Tyvek® Fluid Applied Products**, such as frost, oil, grease, mold and efflorescence. Remove all dust, dirt and loose mortar from the substrate using a trowel or brush. CMU substrates should be free of holes and excess mortar. Fill all head and bed joints with mortar. Mortar joints should be struck flush.

STEP 2: FLASHING

- A. Install a through wall flashing at all necessary locations (e.g. base of the wall, shelf angles, heads of windows, etc.), see Detailing section for additional information.
- B. Install **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** or **DuPont Self-Adhered Flashing Products** around windows and doors in accordance with the DuPont™ Tyvek® Fluid Applied Flashing Installation Guidelines (K-29397).

NOTE: For spray applications of **DuPont™ Tyvek® Fluid Applied WB+™**, the outer edge of **DuPont Self-Adhered Flashing Products** should be treated with **Tyvek® Fluid Applied Flashing and Joint Compound+** tapered to the wall substrate to help ensure installation is free of pinholes and voids.



STEP 3: WALL/SUBSTRATE PREPARATION

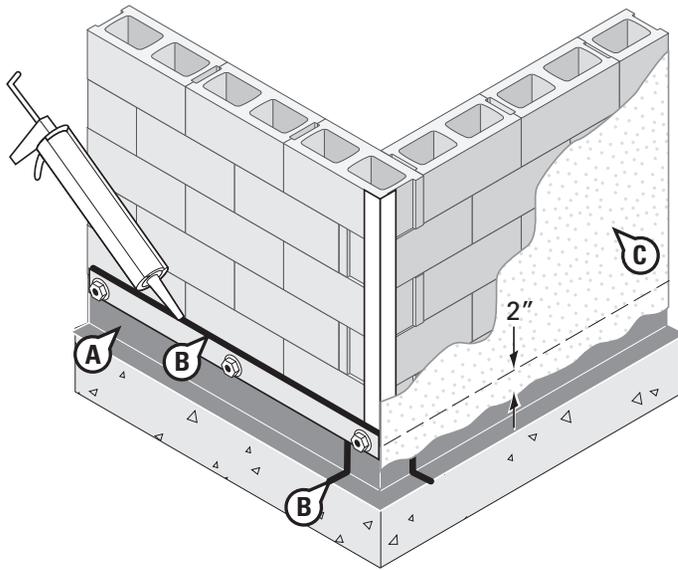
- C. Fill small cracks and voids in masonry with **Tyvek® Fluid Applied Flashing and Joint Compound+**. Large voids should be filled flush with mortar and allowed to cure.
- D. Seal around all penetrations using **Tyvek® Fluid Applied Flashing and Joint Compound+** or **Sealant for Tyvek® Fluid Applied System**. The fillet bead should extend 1/2" onto both surfaces (see the Penetrations section for detail).
- E. As a best practice, DuPont recommends that all embedded masonry anchors be treated by troweling or brushing a coat of **Tyvek® Fluid Applied WB+™** or **Tyvek® Fluid Applied Flashing and Joint Compound+** around the base of the anchor. See the Brick Ties, Cladding Supports, and Furring Strips section of this guide for additional fastener sealing recommendations.
- F. Treat all non-moving transition joints to beams, columns, and dissimilar materials (up to 1/4") by applying a 2" wide, 60 mil thick coat of **Tyvek® Fluid Applied Flashing and Joint Compound+** across the joint. Grouted joints between similar materials do not need to be treated. Transition joints up to 1/2" should be reinforced with fiberglass mesh tape. **DuPont™ StraightFlash™** should be used for transition joints up to 1" following the primer requirements included in the Special Consideration section of this guide. The **StraightFlash™** should extend a minimum of 2" onto each surface. Refer to the Joint Treatment Methods section of this guide for additional information about transition joints.
- G. Treat all inside and outside corners by applying a 25 mil thick coat of **Tyvek® Fluid Applied Flashing and Joint Compound+**, 2" onto each adjoining surface. It is recommended that a fillet bead of **Tyvek® Fluid Applied Flashing and Joint Compound+** be applied to corners to help ensure continuity. Alternately, corners may be treated using **StraightFlash™**. Be sure that **StraightFlash™** is pressed tightly into the inside corners and is fully adhered to substrate. See the Special Consideration section of this guide for priming requirements.

STEP 4: WEATHER BARRIER

Tyvek® Fluid Applied WB+™ can be sprayed or rolled on nonporous substrates such as gypsum sheathings, in one 25-mil (0.635 mm) wet coat, but may require back rolling. Porous substrates such as CMU and non-uniform substrates such as wood sheathing and OSB can be sprayed but may require back rolling. When back rolling, use a roller cover with a 1/2" to 3/4" nap. **Tyvek® Fluid Applied WB+™** needs only to be applied in a single coat at 25 mils thick. See table in the Coverage Rates section of this guide for substrate specific information. Thickness should be controlled by applying the appropriate volume over a marked area and by spot checking with a wet mil gauge. Integrate **Tyvek® Fluid Applied WB+™** with through wall flashing and window/door flashing by overlapping the flashing with **Tyvek® Fluid Applied WB+™** by a minimum of 2". Upon completion, inspect the membrane to ensure that it is continuous and free of any voids or pinholes.

Detailing

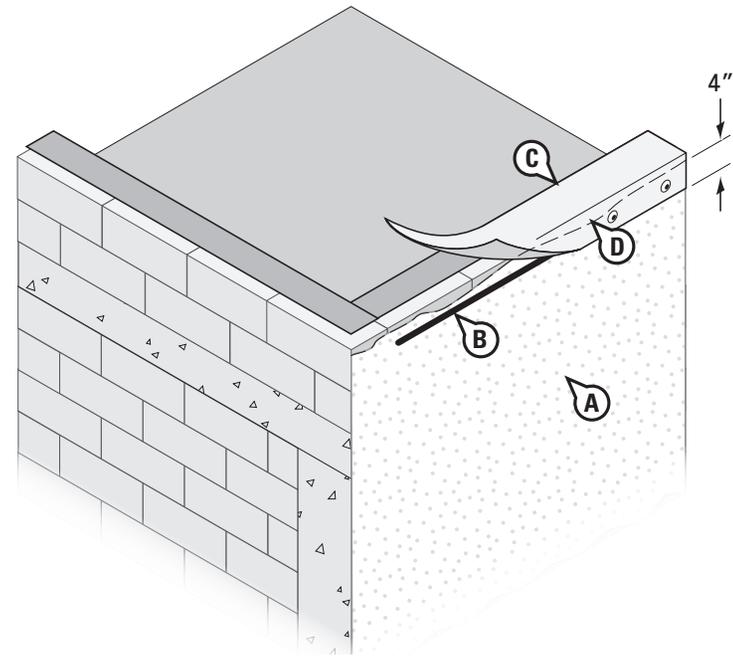
It is important to maintain the continuity of the weather barrier from top to bottom. The entire wall surface shall be covered, including unconditioned spaces. Special attention should be given to all terminations, transitions, projections and penetrations to ensure a proper drainage plane and continuous weather barrier.



Foundation

- A. Install through wall flashing in accordance with the through wall flashing manufacturer's installation guidelines.
- B. Apply **DuPont™ Sealant for Tyvek® Fluid Applied System** or **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** along the top edge of the through wall flashing and/or term bar and to all seams. Allow the **DuPont™ Tyvek® Fluid Applied Product** to form a tack-free skin before applying **DuPont™ Tyvek® Fluid Applied WB+** (refer to the Drying/Curing table for skin and working times). If **DuPont™ StraightFlash™** is used in lieu of the **DuPont™ Sealant for Tyvek® Fluid Applied System** or **Tyvek® Fluid Applied Flashing and Joint Compound+**, the wall must first be primed with **DuPont™ Adhesive/Primer** or recommended primer.
- C. Apply **Tyvek® Fluid Applied WB+** onto wall surface at 25 mils thick. Overlap through wall flashing by a minimum of 2".

NOTE: When spraying, the outer edge of **DuPont Self-Adhered Flashing Products** should be treated with **Tyvek® Fluid Applied Flashing and Joint Compound+** tapered to the wall substrate to help ensure installation is free of pinholes and voids.



Top of Wall

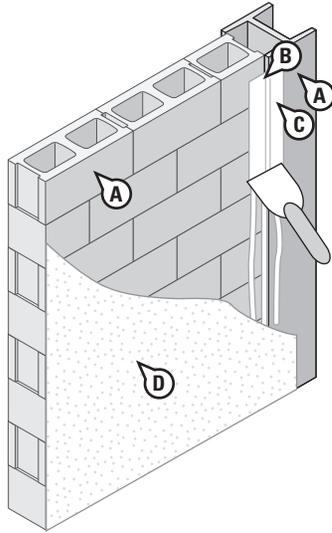
- A. **Tyvek® Fluid Applied WB+** should be installed prior to the installation of the DuPont recommended parapet flashing membrane.
- B. Apply a liberal bead of **DuPont™ Sealant for Tyvek® Fluid Applied System** or **Tyvek® Fluid Applied Flashing and Joint Compound+** onto the **Tyvek® Fluid Applied WB+** at a location that will be approximately 2" up from the bottom edge of the parapet flashing membrane.
- C. While the sealant bead is still wet, install the flashing membrane over the top of the parapet, extending a minimum of 4" onto the **Tyvek® Fluid Applied WB+**.
- D. Press parapet flashing membrane into sealant and secure using mechanical fasteners installed through the membrane and sealant bead.

NOTE: As soon as practically possible, cap the top of the wall system to reduce the likelihood of water getting behind the facade and into the wall cavity.

Detailing

Transitions

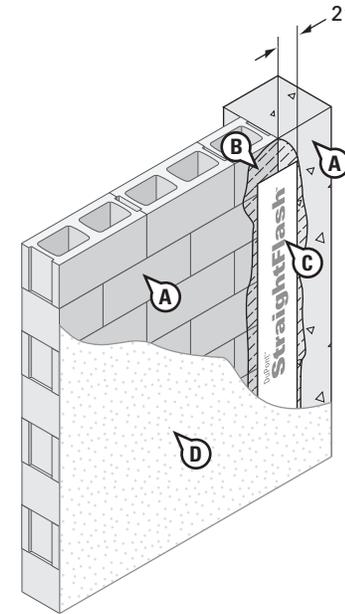
Method 1*: Using DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+



- Fill seam between adjoining substrates flush with the surface using **Tyvek® Fluid Applied Flashing and Joint Compound+**. Joints up to 1/4" can be treated with **Tyvek® Fluid Applied Flashing and Joint Compound+** only. Joints from 1/4" to 1/2" should first be reinforced with fiberglass mesh tape or filled with mortar.
- Apply a bead of **Tyvek® Fluid Applied Flashing and Joint Compound+** to both adjoining surfaces and spread material across transition seam to a width of approximately 2" and 60 mils thick. Upon completion, inspect transition treatment for thin spots, gaps or pinholes and repair as necessary.
- Allow the **Tyvek® Fluid Applied Flashing and Joint Compound+** to form a tack-free skin before applying **DuPont™ Tyvek® Fluid Applied WB+™**. Refer to table in the Drying/Curing section of this installation guide for skin and working times.

* For non-moving joints only.

Method 2*: Using DuPont Self-Adhered Flashing Products



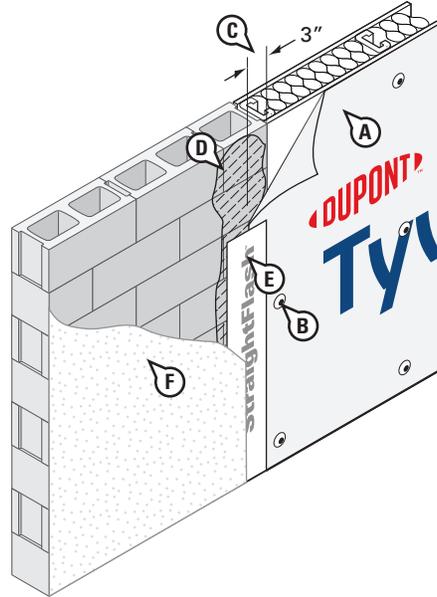
- Clean both substrates thoroughly. Remove any substance that could negatively affect adhesion.
- Prime both substrates using **DuPont™ Adhesive/Primer** or recommended primer.
- Install **DuPont™ StraightFlash™** to the primed substrates, extending a minimum of 2" onto each surface. Press **StraightFlash™** firmly onto both surfaces, working it into any irregularities using a J-roller or firm hand pressure.
- Apply **Tyvek® Fluid Applied WB+™** onto wall surface at 25 mils thick.

NOTE: When spraying, the outer edges of **DuPont Self-Adhered Flashing Products** should be treated with **Tyvek® Fluid Applied Flashing and Joint Compound+** tapered to the wall substrate to help ensure installation is free of pinholes and voids.

* For non-moving joints only.

Detailing

Transitions to DuPont™ Tyvek® Mechanically-Fastened Air and Water Barriers



- A. Install **Tyvek® Mechanically-Fastened Air and Water Barrier** per the DuPont™ Tyvek® Mechanically Fastened Air and Water Barrier Installation Guidelines prior to application of **DuPont™ Tyvek® Fluid Applied WB+™**.
- B. Fasten the **Tyvek® Mechanically-Fastened Air and Water Barrier** to the stud adjoining the transition substrate.
- C. Cut **Tyvek® Mechanically-Fastened Air and Water Barrier** so that approximately 3" will overlap the adjoining substrate.
- D. Fold back the 3" flap of **Tyvek® Mechanically-Fastened Air and Water Barrier** and prime adjoining substrate with **DuPont™ Adhesive/Primer** or recommended primer.
- E. Fold the **Tyvek® Mechanically-Fastened Air and Water Barrier** back down over the interface and seal it to the primed substrate using 4" **DuPont™ StraightFlash™**, overlapping both surfaces evenly by approximately 2". Apply pressure along entire surface of flashing. Refer to the Special Consideration section for additional information.

- F. Apply **DuPont™ Tyvek® Fluid Applied WB+™** onto wall surface, overlapping the **StraightFlash™** by a minimum of 2".

Uncured DuPont™ Tyvek® Fluid Applied Products must not come in contact with Tyvek® Mechanically-Fastened Air and Water Barriers due to potential impact on performance properties. Therefore, use of a spray guard or other physical barrier to avoid overspray onto the Tyvek® Mechanically-Fastened Air and Water Barrier is recommended.

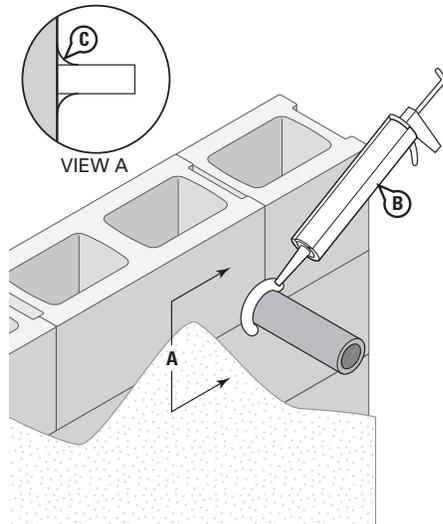
- G. Upon completion, inspect surface to ensure that **Tyvek® Fluid Applied WB+™** is continuous and free of any voids or pinholes.

NOTE: When spraying, the outer edge of **DuPont Self-Adhered Flashing Product** at the interface with the **Tyvek® Fluid Applied WB+™** should be treated with **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** tapered to the wall substrate to help ensure installation is free of pinholes and voids.

Detailing

Penetrations

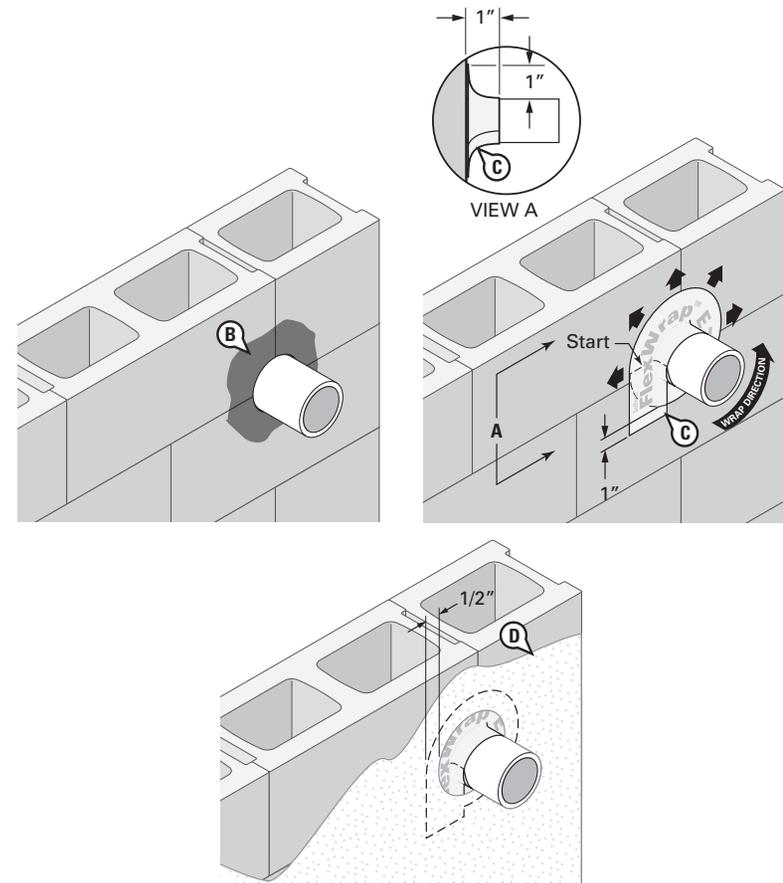
Option 1: Using DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+ or Sealant for Tyvek® Fluid Applied System



- Clean both substrates of any substance that could negatively affect adhesion and remove any sharp protrusions.
- Seal around penetration using **Tyvek® Fluid Applied Flashing and Joint Compound+ or Sealant for Tyvek® Fluid Applied System** and inserting a backer rod as necessary. Upon completion, inspect **DuPont™ Tyvek® Fluid Applied Product** for gaps or pinholes and repair as necessary.
- Tool concave to achieve proper joint design.

NOTE: **Tyvek® Fluid Applied Product** should extend a minimum of 1/2" onto both surfaces. Allow product to form a tack-free skin before applying **DuPont™ Tyvek® Fluid Applied WB+™** (refer to the Drying/Curing table for skin and working times).

Option 2: Using DuPont™ FlexWrap™ EZ for Non-Flanged Products with Outer Diameter (OD) GREATER THAN 2 Inches*



- Clean both substrates of any material that could negatively affect adhesion and remove any sharp protrusions.
- Apply **DuPont™ Adhesive/Primer**, or recommended primer onto face of the wall, around the opening.
- Seal around penetration with **FlexWrap™ EZ**. **FlexWrap™ EZ** should extend onto both surfaces by a minimum of 1", and also overlap the layer below by 1".
- Apply **Tyvek® Fluid Applied WB+™**, overlapping the **FlexWrap™ EZ** by 1/2" min.**

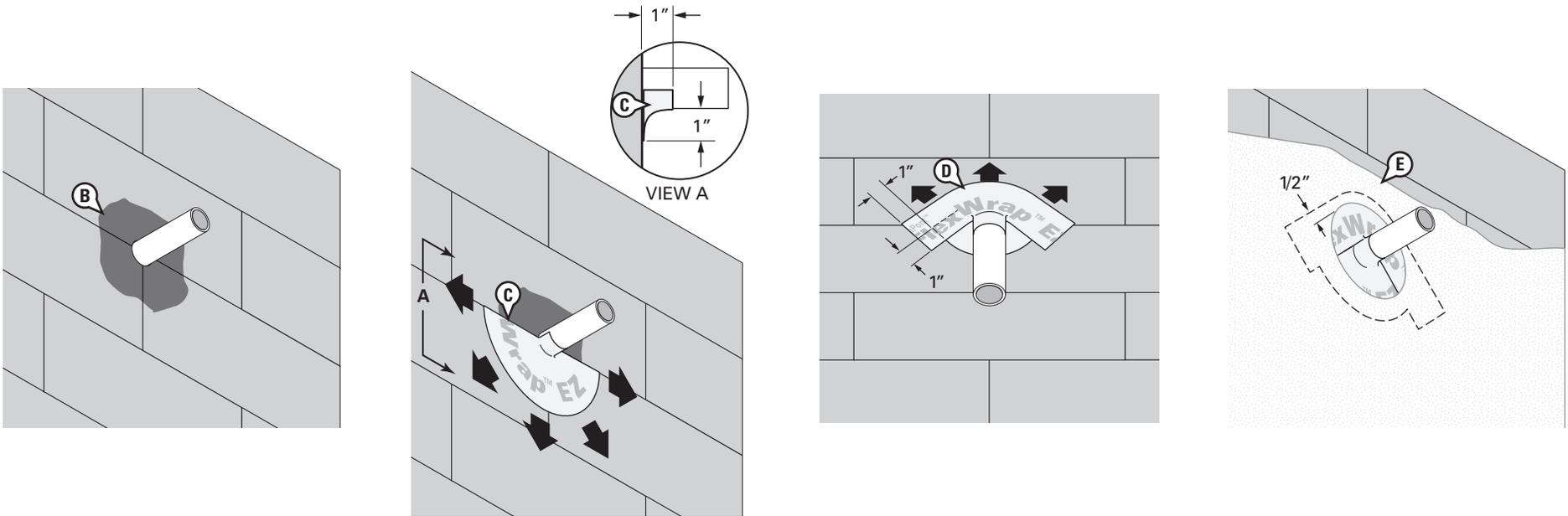
*Use **FlexWrap™ EZ** only when the penetration rough opening is not more than 1/2" larger than the outside diameter/dimension of the non-flanged product.

When spraying, the outer edge of **FlexWrap™ EZ at the interface with the **Tyvek® Fluid Applied WB+™** should be treated with **Tyvek® Fluid Applied Flashing and Joint Compound+** tapered to the wall substrate to help ensure installation is free of pinholes and voids.

Detailing

Penetrations (continued)

Option 3: Using DuPont™ FlexWrap™ EZ for Non-Flanged Products with OD LESS Than 2 Inches*



- A. Clean both substrates of any material that could negatively affect adhesion and remove any sharp protrusions.
- B. Apply **DuPont™ Adhesive/Primer**, or recommended primer onto face of the wall, around the opening.

- C. Adhere a piece of **FlexWrap™ EZ** the length of 1/2 the circumference of the non-flanged product onto bottom section, extending onto both surfaces by a minimum of 1" and fan out onto primed substrate.

- D. Adhere a second piece of **FlexWrap™ EZ** the length of the pipe circumference onto top section extending onto both surfaces by a minimum of 1" and fan out onto face of wall with a minimum of 1" overlap of the edges of **FlexWrap™ EZ** below.

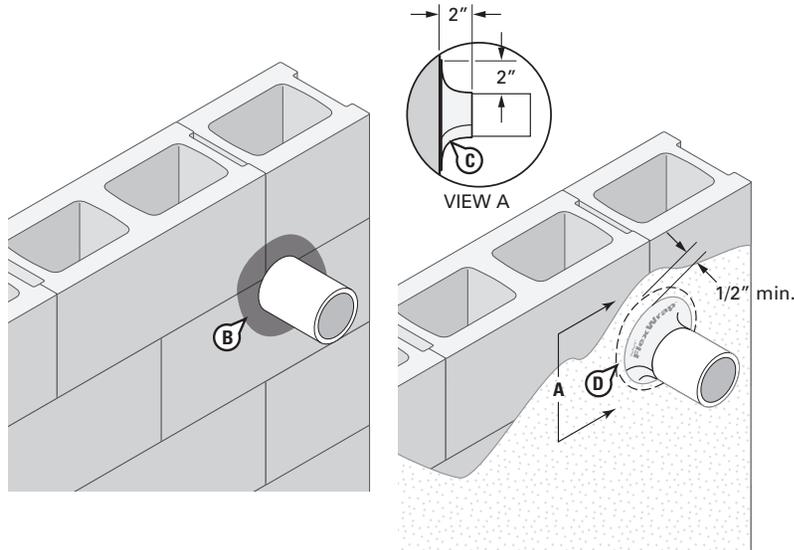
- E. Apply **DuPont™ Tyvek® Fluid Applied WB+™**, overlapping the **FlexWrap™ EZ** by 1/2" min.**

*Use **FlexWrap™ EZ** only when the penetration rough opening is not more than 1/2" larger than the outside diameter/dimension of the non-flanged product.

When spraying, the outer edge of **FlexWrap™ EZ at the interface with the **DuPont™ Tyvek® Fluid Applied WB+™** should be treated with **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** tapered to the wall substrate to help ensure installation is free of pinholes and voids.

Detailing

Option 4: Using DuPont™ FlexWrap™



- A. Clean both substrates of any material that could negatively affect adhesion and remove any sharp protrusions.
- B. Apply **DuPont™ Adhesive/Primer**, or primer onto face of the wall, around the opening.
- C. Seal around penetration with **FlexWrap™**. **FlexWrap™** should extend onto both surfaces by 2".
- D. Apply **DuPont™ Tyvek® Fluid Applied WB+™**, overlapping the **FlexWrap™** by 1/2" min.*

*When spraying, the outer edge of **FlexWrap™** at the interface with the **Tyvek® Fluid Applied WB+™** should be treated with **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** tapered to the wall substrate to help ensure installation is free of pinholes and voids.

Brick Ties, Cladding Supports, and Furring Strips

As a best practice, DuPont recommends that all embedded masonry anchors be treated by brushing or troweling a coat of **Tyvek® Fluid Applied WB+™** or **Tyvek® Fluid Applied Flashing and Joint Compound+** around the base of the anchor.

When installing mechanically attached supports or furring strips in high performance building envelope designs (building envelope design requirements exceeding ASTM E1677, 65 mph equivalent structural load and 15 mph equivalent wind-driven rain water infiltration testing), fasteners shall be sealed by 1) embedding support bracket or brick tie base plate into an additional wet bed of **DuPont™ Tyvek® Fluid Applied Product**, 2) applying **DuPont™ StraightFlash™** patch over cured **Tyvek® Fluid Applied WB+™** at prescribed cladding fastener locations, 3) applying a piece of double-sided butyl tape (by others) to the back of support bracket at fastener location, or 4) an alternate DuPont-approved method.

NOTE: If using the **StraightFlash™** option, the patch may be placed in an additional wet bed of **Tyvek® Fluid Applied Product** to increase adhesion.

When installing mechanically attached supports or furring strips in building envelope design requirements equivalent to ASTM E1677 conditions or less, no pretreatment is necessary.

Application Over Sheathing

DuPont™ Tyvek® Fluid Applied WB+™ may be installed over exterior gypsum, OSB, and plywood sheathing. Sheathing should be clean and free from any materials that could negatively affect adhesion. When installing over sheathing, it is important that all sheathing seams be pretreated using the appropriate joint treatment method (see Joint Treatment Methods section). All flashing and detailing should be completed before installation of **Tyvek® Fluid Applied WB+™**. When applying over exterior gypsum, all cut edges along outside corners and rough openings should first be primed with **DuPont™ Adhesive/Primer** or recommended primer.

When spraying **Tyvek® Fluid Applied WB+™**, pretreat all overdriven sheathing fasteners with **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+**. Application to sheathing substrate and sheathing fasteners should be free of pinholes and voids. Installer should treat any pinholes and voids using **DuPont™ Tyvek® Fluid Applied Products**.

Tyvek® Fluid Applied WB+™ can be sprayed or rolled on nonporous substrates, such as gypsum sheathings, in a 25-mil (0.635 mm) wet coat. Porous substrates such as CMU and non-uniform substrates such as wood sheathing and OSB can be sprayed but may require back rolling. When back rolling, use a roller cover with a 1/2" to 3/4" nap. **Tyvek® Fluid Applied WB+™** needs only to be applied in a single coat at 25 mils thick. Refer to table in the Drying/Curing section of this installation guide for skin and working times. The thickness should be controlled by applying the appropriate volume over a marked area and by spot checking with a wet mil gauge. Upon completion, inspect the membrane to ensure that it is continuous and free of any voids or pinholes.

Tyvek® Fluid Applied Products may be overcoated once a tack-free skin has formed. Refer to table in the Drying/Curing section of this installation guide for skin and working times.

Drying/Curing

The **Tyvek® Fluid Applied Products** mentioned in this guide skin over and are dry to touch within 1-2 hours under normal conditions (70°F (20°C), and 50% RH). Uncured **Tyvek® Fluid Applied Products** should not come in contact with **DuPont™ Tyvek® Mechanically-Fastened Air and Water Barriers**. Performance testing can commence after membrane is fully cured, approximately 14 days. See table below for details.

NOTE: Tyvek® Fluid Applied Products installed on manufactured wall panels may require site-specific drying/curing considerations.

Use Recommendations	Application	Time
Skin Over*	Minor touchups	1-2 Hours
Workable**	Cladding/Façade Fasteners	24 Hours
Exterior Façade / Exterior Insulation		48 Hours
DuPont™ Tyvek® CommercialWrap® / Tyvek® CommercialWrap® D	When DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+ is Used as Sheathing Seam Treatment	48 Hours
	Intervening Layer	24 Hours
Complete Cure	End-Use Testing	14 Days

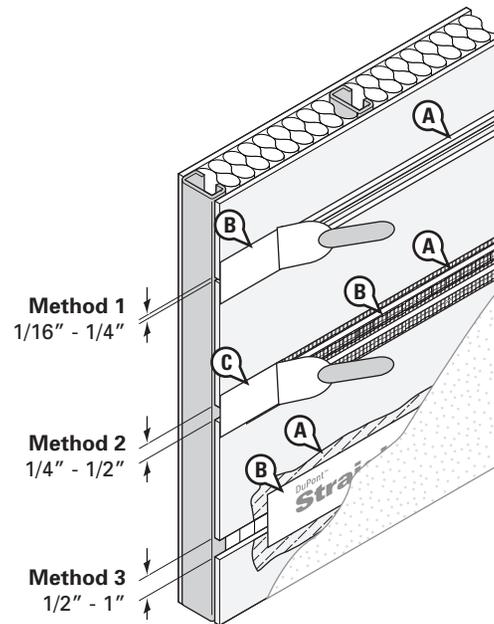
*Time required for **Tyvek® Fluid Applied Products** to form a surface that is non-transferable to the touch.

Time required for surface of **Tyvek® Fluid Applied Products to be more resistant to minor abrasion.

Drying/Curing

Joint Treatment Methods*

When rolling or backrolling, joint treatment is not necessary for gaps 1/16" wide or less. When spraying, backrolling or joint treatment is required for gaps 1/16" wide or less. Upon completion of application, wall substrate should be free of pinholes and voids.



Method 1 (For Gaps Up to 1/4")

- Apply a bead of **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** above and below the sheathing seam.
- Smooth **Tyvek® Fluid Applied Flashing and Joint Compound+** across the joint using a brush or trowel. **Tyvek® Fluid Applied Flashing and Joint Compound+** should be tapered for a smooth finish of 15 to 25 mils and extend a minimum of 1" on either side of the joint.

Optional Method (For Joints Up to 1/4")

- Apply a bead **Tyvek® Fluid Applied Flashing and Joint Compound+** to both adjoining surfaces and spread material across transition seam to a width of approximately 2". Make sure the seam is filled. Scrape the **Tyvek® Fluid Applied Flashing and Joint Compound+** flush to the surface.
- Check joint for thin spots and pinholes, repair as necessary.
 - Allow the **DuPont™ Tyvek® Fluid Applied Product** to form a tack-free skin before applying **DuPont™ Tyvek® Fluid Applied WB+™**. Refer to table in the Drying/Curing section of this installation guide for skin and working times.

Method 2 (For Gaps Up to 1/2")

- Firmly apply self-adhered reinforcing mesh tape.
- Apply a bead of **Tyvek® Fluid Applied Flashing and Joint Compound+** above and below the sheathing seam.
- Smooth **Tyvek® Fluid Applied Flashing and Joint Compound+** across the mesh tape using a brush or trowel. **Tyvek® Fluid Applied Flashing and Joint Compound+** should be tapered for a smooth finish of 15 to 25 mils and extend a minimum of 1" on either side of the joint.
- Check joint for thin spots and pinholes, repair as necessary.

Method 3 (For Gaps Up to 1")

- Apply **DuPont™ Adhesive/Primer** or recommended primer above and below sheathing joint.
- Center **DuPont™ StraightFlash™** over joint and firmly press onto sheathing using a J-roller or firm hand pressure.

NOTE: When spraying, the outer edge of **DuPont Self-Adhered Flashing Products** should be treated with **Tyvek® Fluid Applied Flashing and Joint Compound+** tapered to the wall substrate to help ensure installation is free of pinholes and voids.

* For non-moving joints only.

Drying/Curing

Repair

Small repairs can be made by coating the damaged area with a layer of **DuPont™ Tyvek® Fluid Applied Product**. Larger damaged areas may need to be reinforced using fiberglass mesh or by replacing damaged substrate before reapplying **Tyvek® Fluid Applied Product**.

Equipment Recommendations

DuPont™ Tyvek® Fluid Applied WB+™ can be applied using a pressure roller or airless sprayer in conjunction with a variety of pumps, such as the Graco Mark V, GMAX II 7900, IronMan 300E, IronMan 500G, GH 733, GH 833 or equivalent. All manufacturer limitations should be followed.

Roller Applied

Apply **Tyvek® Fluid Applied WB+™** using a pressure roller with a 1/2" – 3/4" nap roller cover. **NOTE:** Some roller covers may have loose fibers at the start of use that may need to be worked off to limit and/or minimize loose fibers on the wall substrate.

Foam-type rollers and shorter naps should not be used, as they will just slide on the substrate.

Spray Applied

Tyvek® Fluid Applied WB+™ can be spray applied using electric or gas hydraulic airless sprayers. Always ensure water is not present in the spray system prior to the introduction of **Tyvek® Fluid Applied WB+™**. A pre-flush of the sprayer with 100% mineral spirits is recommended. A Graco Silver Plus spray gun or a heavy duty texture gun along with Graco RAC 5 or XHD-RAC tips are recommended for spray operations at temperatures above 70°F (21°C). The Graco G-40 air assisted spray gun (with 90 psi at the spray tip) can be used to improve atomization when the **Tyvek® Fluid Applied WB+™** temperature is between 65°F (18°C) and 70°F (21°C). For more information about spray application, refer to the DuPont™ Tyvek® Commercial Solutions Technical Bulletin, Additional Considerations When Spraying **Tyvek® Fluid Applied WB+™**.

All internal filters should be removed from the pump, spray gun, and pressure roller assembly, before applying product. The pump intake screen should be installed when applying product. The condition of the pump, as well as the size, length, and condition of the hoses used can affect the systems performance. The diameter of some hose sections may need to be increased, depending on the pumping distance desired. Refer to pump manufacturer's representative and guidelines regarding the operation and maintenance of the pump system. Operation of pump equipment can be hazardous. All manufacturer limitations, warnings, and safety recommendations should be followed.

When spraying **Tyvek® Fluid Applied WB+** at low temperatures, the optimum hose configuration is 50' of 1/2" diameter hose in combination with a 50' section of 3/8" diameter hose. The maximum recommended hose length for spray operations is 100 ft. If site conditions require greater hose lengths, pressure rolling is recommended.

NOTE: If using a whip for hose mobility, the diameter of the whip should be the same as the hose. For example, a 3/8" diameter whip should be used when connecting to a 3/8" diameter hose.

Facade/Exterior Considerations

NOTE: Refer to table in the Drying/Curing section of this guide for exterior insulation and cladding installation recommendations.

Brick

The Brick Industry Association recommends a 1" air space in front of wood stud construction and a 2" air space in front of steel stud construction. Consistent with these requirements and recommendations, **Tyvek® Fluid Applied WB+™** shall be separated from the brick veneer by a minimum 1" air space. Window and door flashing and through wall flashing shall be integrated with the **Tyvek® Fluid Applied WB+™** in accordance with these installation guides. For maximum moisture management and drying of the wall system, the air space in front of the **Tyvek® Fluid Applied WB+™** shall be vented to the exterior at the top and bottom of the wall.

Stucco

When stucco is installed over wood-based sheathing the 2018 International Building Code (Section 2510.6) requires "a water-resistive vapor-permeable barrier with a performance at least equivalent to two layers of Grade D paper" or a layer of weather barrier which is separated from the stucco by an "intervening layer". When the **Tyvek® Fluid Applied WB+™** is used behind stucco, it should be separated from the stucco by an intervening layer per section 2510.6 of the 2018 International Building Code. **Tyvek® Fluid Applied WB+™** should be installed as the first air and water barrier directly over the face of the substrate, and should be integrated with the window and door flashings, the weep screed at the bottom of the wall and any through wall flashings or expansion joints. **DuPont™ Tyvek® Mechanically-Fastened Air and Water Barriers** can be used with **Tyvek® Fluid Applied WB+™** as the intervening layer (or second layer). Lath shall be installed over the intervening layer in accordance with ASTM C1063-03 Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster and applicable codes.

Metal Panel

When used with **DuPont™ Tyvek® Fluid Applied WB+™**, metal panel cladding systems shall be installed according to manufacturer's instructions and industry standards. Window and door flashing and through wall flashing shall be integrated with the **Tyvek® Fluid Applied WB+™**.

Stone Veneer

The 2018 International Building Code (Section 1404.7) requires two layers of a water resistive barrier behind stone veneers over framed construction. When used behind stone veneer, **Tyvek® Fluid Applied WB+™** shall be installed in a similar manner as it is behind stucco. When installed over wood frame construction, **Tyvek® Fluid Applied WB+™** should be separated from the stone and mortar by an intervening layer (second layer) of a **DuPont™ Tyvek® Mechanically-Fastened Air and Water Barrier**, a layer of grade D building paper, felt, rigid foam board or the paper backing of paper-backed lath. **Tyvek® Fluid Applied WB+™** should be installed as the first air and water barrier layer directly over the face of the substrate, and should be integrated with the window and door flashings, the weep screeds at the bottom of the wall and any through wall flashings or expansion joints. Lath shall be installed over the intervening layer (second layer) in accordance with ASTM C1063-03 Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster and applicable codes.

Wood Siding

When used with **Tyvek® Fluid Applied WB+™**, wood siding shall be installed according to manufacturer's instructions, industry standards and applicable codes. As recommended by the Western Red Cedar Lumber Association and U. S. Forest Product Laboratory, wood siding should be primed on all six sides before installation. In high exposure installations, enhanced drainage and water management may be provided by using **DuPont™ Tyvek® CommercialWrap® D** or by creating rainscreen cladding with a larger air space behind the siding using furring strips. **DuPont™ Tyvek® CommercialWrap® D** offers > 98% drainage efficiency when evaluated in accordance with ASTM E2273 Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies.

Fiber Cement Siding

When used with **Tyvek® Fluid Applied WB+™**, fiber cement siding shall be installed according to manufacturer's instructions and industry standards. In high exposure installations, enhanced drainage and water management may be provided by using **Tyvek® CommercialWrap® D** or by creating rainscreen cladding with a larger air space behind the siding using furring strips.

Exterior Insulation

Exterior Insulation should be installed after the appropriate flashing materials have been installed and **Tyvek® Fluid Applied WB+™** has been applied and properly integrated with flashing. Exterior insulation shall be installed in accordance with manufacturer's guidelines and industry standards. The level of performance of exterior insulation (continuous insulation) is dependent upon proper installation and continuity limitations due to the design of the building envelope.

Technical Specifications

DuPont™ Tyvek® Fluid Applied Products are formulated to include elastomeric polymers that cure to a continuous, fully-adhered, tough, durable membrane. Additives have been incorporated to provide ultraviolet light resistance. DuPont requires that the **DuPont™ Tyvek® Fluid Applied WB+™** and **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** be covered within 9 months of installation

DuPont™ FlexWrap™, **DuPont™ FlexWrap™ EZ**, and **DuPont™ StraightFlash™** are made from a synthetic rubber adhesive and a top sheet of flash spunbonded high density polyethylene fibers. Additives have been incorporated into these materials to help provide UV light resistance. DuPont requires that **FlexWrap™**, **FlexWrap™ EZ**, and **StraightFlash™** be covered within 9 months of installation.

FlexWrap™, **FlexWrap™ EZ**, and **StraightFlash™** products and their release paper are slippery and should not be walked on. Remove release paper from work area immediately. **DuPont Self-Adhered Flashing Products** are combustible and should be protected from flame and other high heat sources. If burning occurs, ignited droplets may fall away from the point of ignition.

DuPont™ Sealant for Tyvek® Fluid Applied System should be covered within 9 months of installation.

For more information, call 1-800-448-9835.

Note

When installed in conjunction with other building materials, **DuPont Self-Adhered Flashing Products** and **DuPont™ Tyvek® Fluid Applied Products** must be properly integrated so that water is diverted to the exterior of the wall system. **DuPont™ Tyvek® Fluid Applied WB+™** is a secondary weather barrier. The outer facade is the primary barrier. Do not install on a wall that does not feature a continuous path for moisture drainage. Any standing water must be allowed to drain off the membrane. You must follow facade manufacturer's installation and maintenance requirements for all facade systems in order to maintain water holdout properties and ensure performance of **Tyvek® Fluid Applied WB+™**. Use of additives, coatings or cleansers on or in the facade system may impact the performance of **Tyvek® Fluid Applied Products**. DuPont Weatherization Systems products are to be used as outlined in this installation guideline. **DuPont Self-Adhered Flashing Products** and **Tyvek® Fluid Applied Products** should only be used to seal penetrations and flash openings in buildings. Uncured **Tyvek® Fluid Applied Products** must not come in contact with **DuPont™ Tyvek® Mechanically-Fastened Air and Water Barriers** due to potential impact on performance properties. **DuPont Self-Adhered Flashing Products** and **Tyvek® Fluid Applied Products** are not to be used in roofing applications. For superior protection against bulk water penetration, DuPont suggests a system combining a quality exterior facade, a good secondary weather barrier and exterior sheathing, high quality windows and doors, and appropriate flashing materials paying attention to proper installation of each component.

Depending on job site conditions, it is possible that stains may appear, but will not alter performance of the **Tyvek® Fluid Applied Product**.

DuPont believes this information to be reliable and accurate. The information may be subject to revision as additional experience and knowledge is gained. It is the user's responsibility to determine the proper construction materials needed.

For complete warranty information please call 1-800-448-9835 or visit www.fluidapplied.tyvek.com.

This information is not intended to be used by others for advertising, promotion, or other publication for commercial purposes.



For more information about DuPont Performance Building Solutions Systems, please call 1-800-448-9835 or visit us at [building.dupont.com](https://www.building.dupont.com)

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