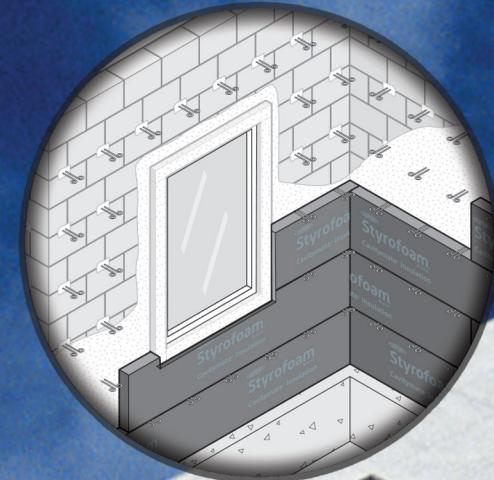


DuPont Commercial Wall² System

**DuPont™ Tyvek® Fluid Applied WB+™
OVER CMU with Embedded Brick Ties and
UNDER DuPont™ Styrofoam™ Brand XPS
Insulation Products**

Installation Bulletin

- Optimizes Thermal Efficiency and Durability Using DuPont™ Styrofoam™ Brand XPS Products.
- Maximizes Air and Water Protection Using DuPont™ Tyvek® Fluid Applied WB+™.
- Meets Fire Performance Requirements of NFPA 285.



November 2020

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Introduction

The DuPont Commercial Wall² System in this document is based on in-depth, rigorous testing of enhanced wall assemblies that reflect the “Power of Two” when **DuPont™ Tyvek® Fluid Applied WB+™** and **DuPont™ Styrofoam™ Brand XPS Products*** are used together to protect the building above and beyond building code minimums. This bulletin is intended for commercial buildings comprised of Concrete Masonry Units (CMU). Designers and building owners can enjoy greater peace of mind knowing that DuPont scientists and engineers have done the hard work to ensure assembly robustness when installers follow the methods included in this installation bulletin. Use of this bulletin is limited to construction of the DuPont Commercial Wall² System outlined herein and is designed to serve as a resource for building professionals and installers using DuPont Performance Building Solutions Products in commercial construction. The DuPont Commercial Wall² System Warranty is based on use of the applicable products and components in the manner outlined in this bulletin. Please refer to the applicable DuPont Performance Building Solutions product installation guidelines for proper installation and requirements, technical specifications, codes and standards, and safe handling of **DuPont™ Tyvek® Fluid Applied Products**, **DuPont Self-Adhered Flashing Products**, or **DuPont™ Styrofoam™ Brand XPS Products**. products. Product specific information is available at building.dupont.com/commercial.

DuPont Commercial Wall² System Applicable Products

DuPont Exterior Continuous Insulation (CI)

- **DuPont™ Styrofoam™ Brand Cavitymate™ Extruded Polystyrene Insulation**
- **DuPont™ Styrofoam™ Brand Cavitymate™ Plus Extruded Polystyrene Insulation**
- **DuPont™ Styrofoam™ Brand Cavitymate™ SC Extruded Polystyrene Insulation**
- **DuPont™ Styrofoam™ Brand Cavitymate™ Ultra XPS Foam Insulation**
- **DuPont™ Styrofoam™ Brand Scoreboard™ Insulation**
- other **DuPont™ Styrofoam™ Brand XPS Products**
(Up to 3" depending on NFPA 285 approval and IBC)

DuPont™ Tyvek® Fluid Applied Products

- **DuPont™ Tyvek® Fluid Applied WB+™**
- **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+**
- **DuPont™ Sealant for Tyvek® Fluid Applied System**

DuPont Self-Adhered Flashing Products

- **DuPont™ FlexWrap™** (formerly DuPont™ FlexWrap™ NF)
- **DuPont™ StraightFlash™**

Special Considerations

1. A snug friction fit is required if **Styrofoam™ Brand** rigid foam insulation boards are cut down to size to achieve expected performance. Use appropriate, conveniently sized factory cut **Styrofoam™ Brand CavityMate™** or **Styrofoam™ Brand Scoreboard™ XPS** products for best results.
2. For NFPA 285 approval and IBC compliance, refer to ICC-ESR 2142 or applicable **Styrofoam™** code report for max thickness depending on product and assembly details.
3. Review the sealant manufacturer's literature or label to confirm that the products used have the chemical and adhesive properties necessary for use with the DuPont flashing materials. Refer to [Chemical Compatibility of Representative Building Sealants](#) for more information about chemical compatibility.

DuPont Commercial Wall² System Warranty Information

In order to make a claim under the [DuPont Commercial Wall² System Warranty](#), you must have met all of the terms and conditions of the warranty including use of the applicable DuPont Installation Guidelines and this *Commercial Wall² System – DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products Installation Bulletin*, and be compliant with local building codes including assembly-specific details for NFPA 285. Please visit building.dupont.com/warranties for more information about the warranty.

To ensure a continuous drainage plane for optimum water management, the **Tyvek® Fluid Applied WB+™** should be integrated with the **Tyvek® Fluid Applied Flashing and Joint Compound+** and/or the **DuPont Self-Adhered Flashing Products** used for window flashing installations as part of the DuPont Commercial Wall² System. DuPont offers several flashing methods to accommodate various types of windows and installations.

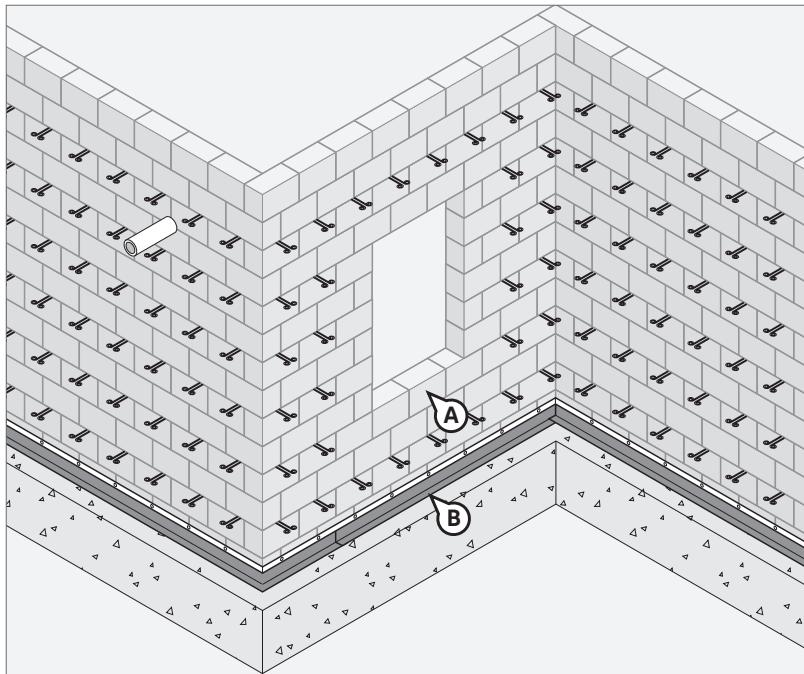
Examples shown in this installation bulletin represent two common installations based on Method 1 from the [DuPont™ Tyvek® Fluid Applied Flashing Installations Guidelines for Buildings Greater than 4 Stories and High-Performance Installations of Any Height](#). Installers should refer to this document for complete instructions and additional flashing methods.

Windows aligned with the exterior finished wall typically require wood bump out framing around the window rough opening as shown in **Example 1**.

Windows installed in the same plane as the **Tyvek® Fluid Applied WB+™**, shown in **Example 2**, will be recessed from the exterior finished wall once the **DuPont Exterior CI** is installed.

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

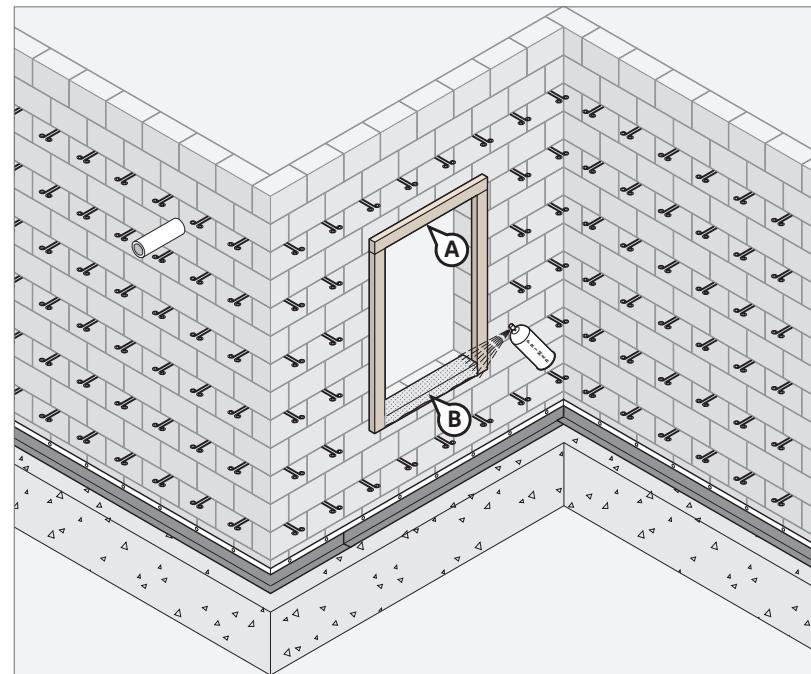
Option 1: Windows installed onto wood bump out frame and aligned with exterior finished wall



STEP 1

Wall Surface Preparation

- Clean substrate by removing any material that may affect the adhesion of **DuPont™ Tyvek® Fluid Applied Products** or **DuPont Self-Adhered Flashing**, such as frost, oil, grease, mold and efflorescence. Remove all dust, dirt and loose mortar from the substrate using a trowel and 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.
- Install through wall flashing at bottom of wall according to manufacturer specifications.

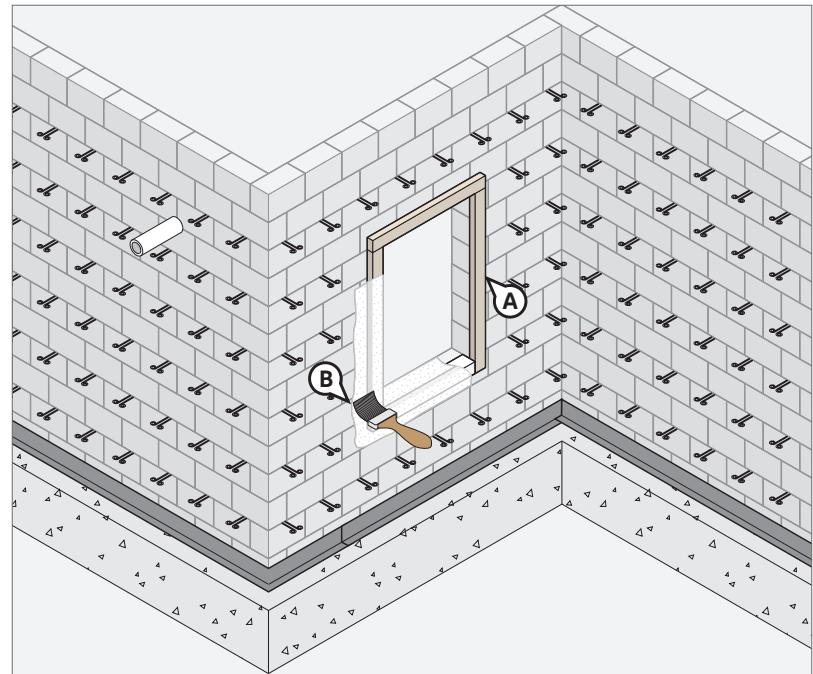
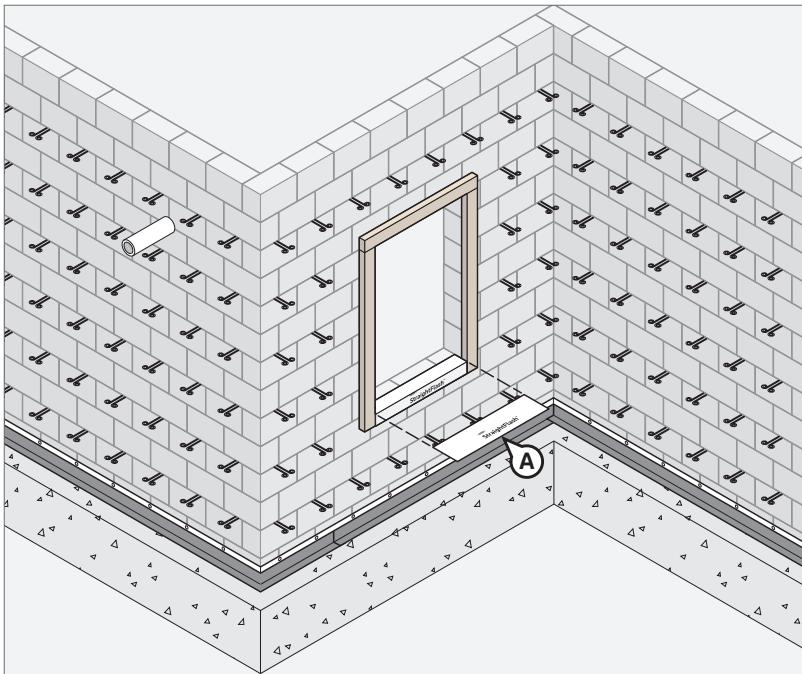


STEP 2

- Install bump out framing per plans and specifications
- When using **DuPont™ StraightFlash™** at the sill of the window, apply **DuPont™ Adhesive/Primer** or recommended primer approximately 3" onto the exterior face of the wall, and onto the inside of the sill for concrete surfaces.

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

Option 1: Windows installed onto wood bump out frame and aligned with exterior finished wall



STEP 3

Prepare the sill flashing by cutting a piece of **DuPont™ StraightFlash™** the width of the sill.

- To install the sill flashing, remove release paper and position **StraightFlash™** so that 2" will extend onto the face of the wall below the sill. Wrap flashing into the rough opening at sill and onto the face of the wall. Apply pressure along entire surface of flashing for a good bond using firm hand pressure, J-roller, or alternate tool without sharp edges (such as a plastic carpet tuck tool) to assist with application of uniform pressure during installation of **DuPont Self-Adhered Flashing Products**.

NOTE: **StraightFlash™** is not required in cases where no fasteners are being installed through the window sill.

STEP 4

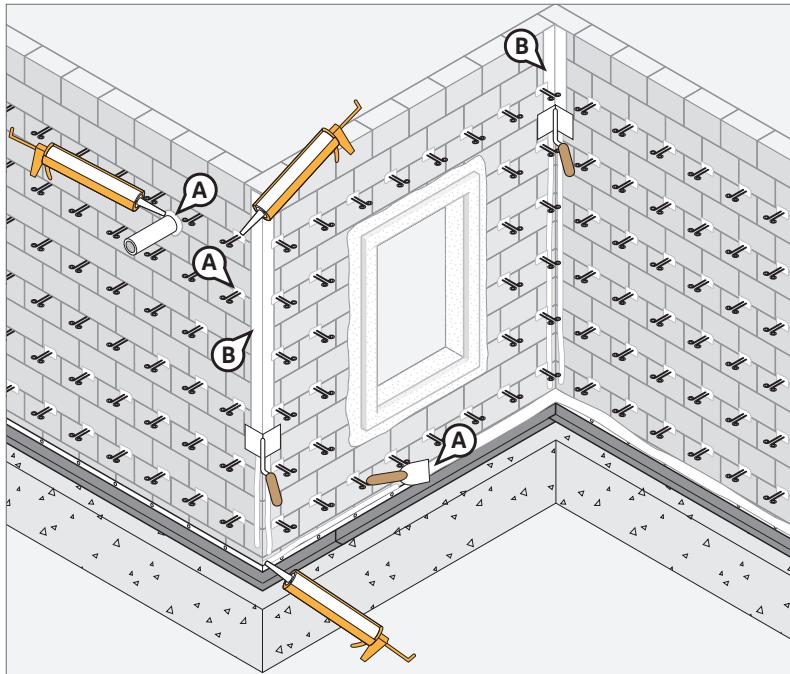
Preparing Window Rough Opening with **DuPont™ Tyvek® Fluid Applied Products**

- Remove any dirt, dust, frost, oil, grease, mold, or other substance that may affect the adhesion of **Tyvek® Fluid Applied Products** and/or **DuPont Self-Adhered Flashing Products**.
- Install **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** and/or **DuPont Self-Adhered Flashing Products** to protect the rough openings for windows and doors per the [DuPont™ Tyvek® Fluid Applied Flashing Installations Guidelines for Buildings Greater than 4 Stories and High-Performance Installations of Any Height](#).

NOTE: See [DuPont™ Tyvek® Fluid Applied Flashing Installations Guidelines for Buildings Greater than 4 Stories and High-Performance Installations of Any Height](#) and [DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines](#) for substrate priming requirements when **DuPont Self-Adhered Flashing Products** are used to protect the rough opening, pipe penetrations, wall substrates corners, and/or bottom of wall transitioning.

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

Option 1: Windows installed onto wood bump out frame and aligned with exterior finished wall



STEP 5

Prepare CMU with Embedded Brick Ties with **DuPont™ Tyvek® Fluid Applied Products**

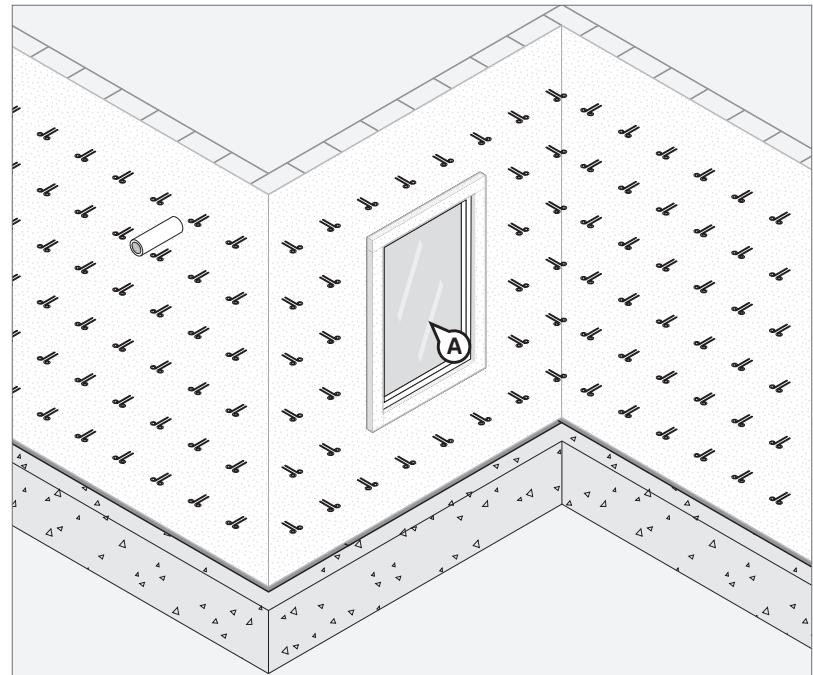
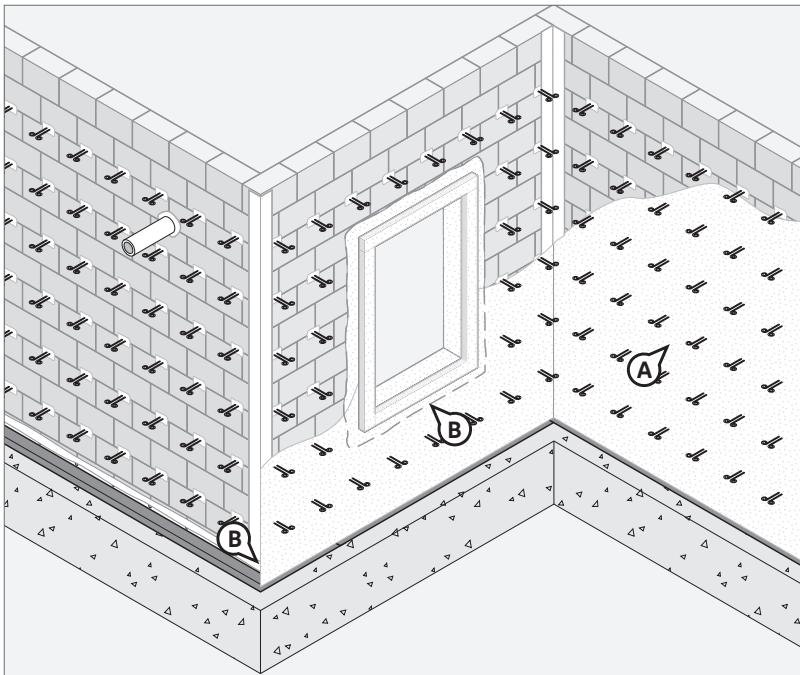
- A. Treat edges of the through wall flashing, embedded brick ties, and seal around penetrations as necessary using **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** or **DuPont™ Sealant for Tyvek® Fluid Applied System** according to the **DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines**.
- B. 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 **DuPont™ StraightFlash™**. Installation can be done in part with a single piece of **StraightFlash™** or cut into more manageable lengths to be properly shingled and installed with 2" min overlap. Be sure the **StraightFlash™** is pressed tightly into the inside corners and is fully adhered to substrate.
- C. Upon completion, inspect surface, including all corners to ensure that **Tyvek® Fluid Applied Flashing and Joint Compound+** is continuous and free of any voids or pinholes.

Notes:

- For spray applications of **Tyvek® Fluid Applied WB+™**, 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.
- When using **StraightFlash™** as a transitional membrane along the corners and/or bottom of wall, ensure the wall substrate is clean, dry, and primed with DuPont recommended primer prior to the installation of **StraightFlash™**. When treating/flashing the corners, remember to start from the bottom up. DuPont recommends self adhered flashing be installed prior to the **Tyvek® Fluid Applied Products**.

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

Option 1: Windows installed onto wood bump out frame and aligned with exterior finished wall



STEP 6

Install Tyvek® Fluid Applied WB+™

Tyvek® Fluid Applied WB+™ may be applied over and integrated with DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound once a tack-free skin has formed. Skin time is 1-2 hrs at 70°F (20°C), 50% RH.

- A. Apply Tyvek® Fluid Applied WB+™ by spraying or rolling a 25-mil wet coat onto exterior gypsum sheathing. See [DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines](#) for coverage rates and cure times. Thickness should be controlled by applying the appropriate volume over a marked area and by spot checking with a wet mil gauge.
- B. 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".
- C. Upon completion, inspect the membrane to ensure that it is continuous and free of any voids or pinholes.

STEP 7

Install Window

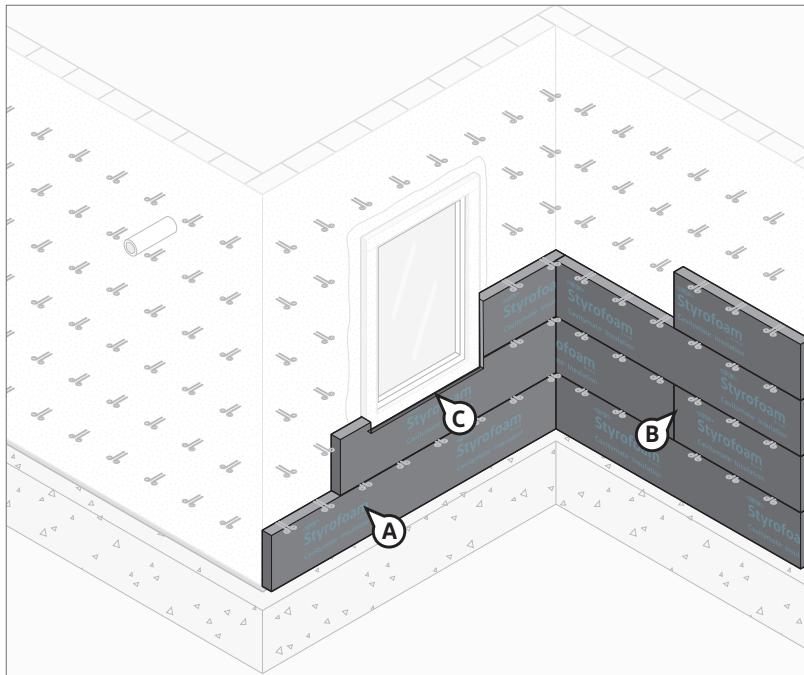
- A. After the Tyvek® Fluid Applied WB+™ has cured, install window per manufacturer's installation instructions. Apply an exterior perimeter seal using backer rod and sealant along the jambs and head of the window opening.

NOTE: Ensure window and sealant installation allows for drainage at the sill. If sealant is applied at the sill, as a best practice, ensure that there are at least two (2) 2" gaps in the sealant bead for every 4" of window to allow for drainage.

For additional information refer to the applicable method in [DuPont™ Tyvek® Fluid Applied Flashing Installations Guidelines for Buildings Greater than 4 Stories and High-Performance Installations of Any Height](#).

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

Option 1: Windows installed onto wood bump out frame and aligned with exterior finished wall



STEP 8

Install **Styrofoam™ Brand XPS Product**

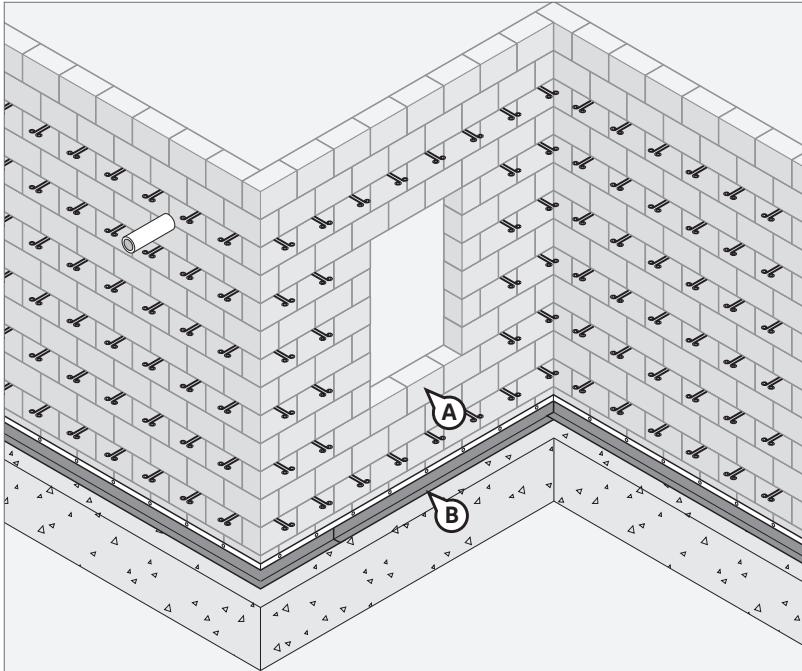
- A. Install **Styrofoam™ Brand XPS Product** boards between the embedded brick ties, which will create a snug fit.
- B. Abut **Styrofoam™ Brand XPS Product** boards tightly together. Common practice is to stagger boards, but it is not required.
- C. Cut the **Styrofoam™ Brand XPS Product** so it will fit flush around bump-out frame.

NOTES:

- Refer to the applicable installation guidelines for the specified **Styrofoam™ Brand XPS Product** used.
- Ensure any exposed edges of the **Styrofoam™ Brand XPS Product** are protected during exterior wall finishing.

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

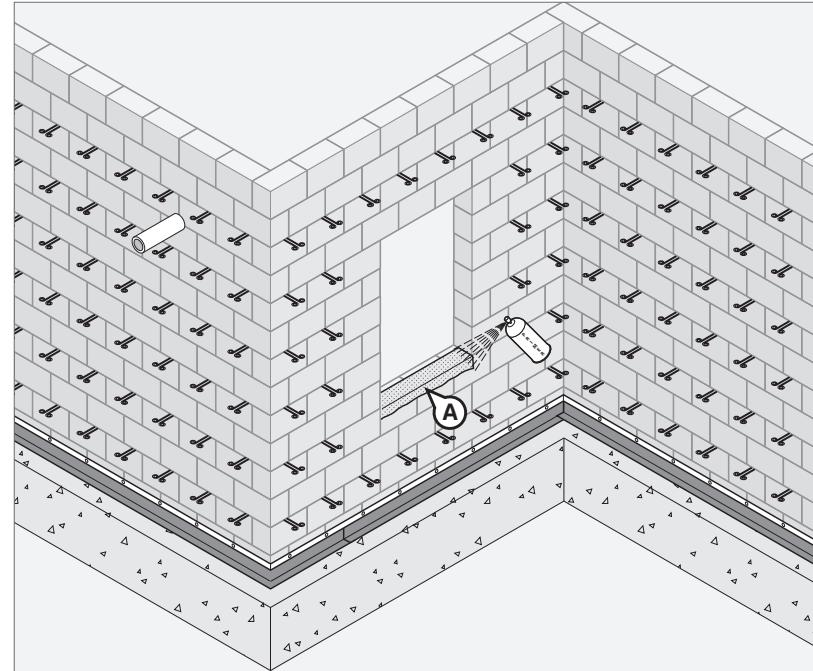
Option 2: Windows installed at same plane as Tyvek® Fluid Applied WB+™



STEP 1

Wall Surface Preparation

- Clean substrate by removing any material 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 and 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.
- Install through wall flashing at bottom of wall according to manufacturer specifications.



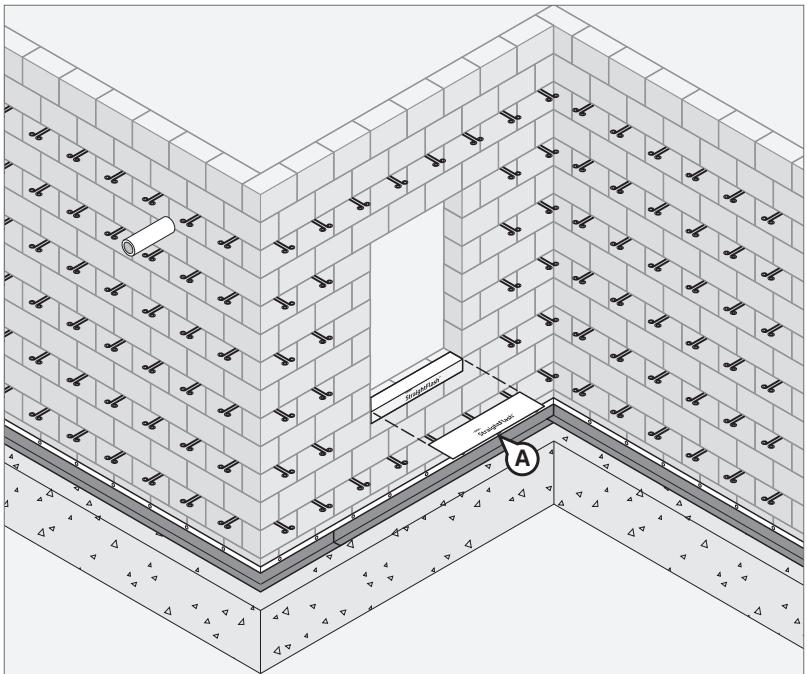
STEP 2

Clean substrate of any material that could negatively affect adhesion as well as any sharp protrusions.

- When using **DuPont™ StraightFlash™** at the sill of the window, apply **DuPont™ Adhesive/Primer** or recommended primer approximately 3" onto the exterior face of the wall, and onto the inside of the sill for concrete surfaces.

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

Option 2: Windows installed at same plane as Tyvek® Fluid Applied WB+™

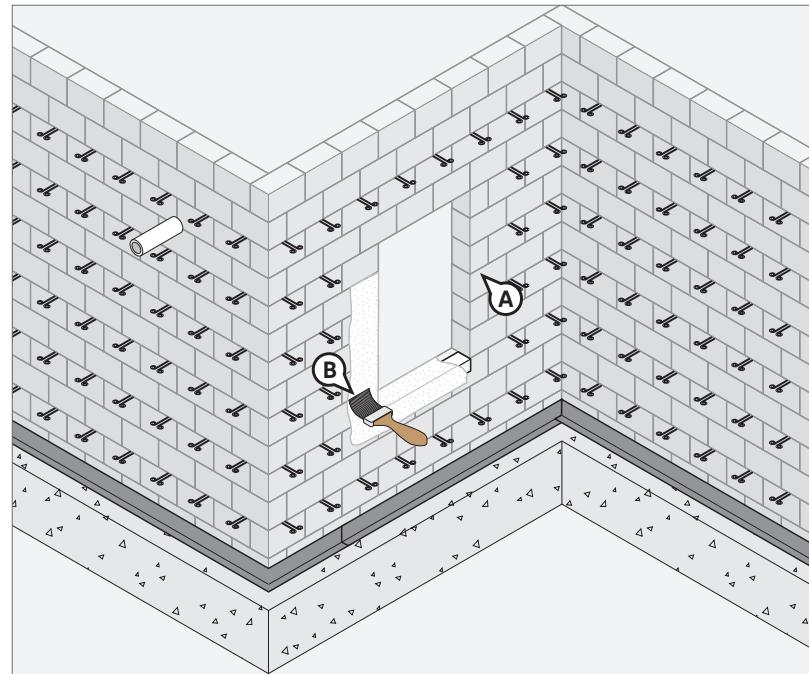


STEP 3

Prepare the sill flashing by cutting a piece of **DuPont™ StraightFlash™** the width of the sill.

- To install the sill flashing, remove release paper and position **StraightFlash™** so that 2" will extend onto the face of the wall below the sill. Wrap flashing into the rough opening at sill and onto the face of the wall. Apply pressure along entire surface of flashing for a good bond using firm hand pressure, J-roller, or alternate tool without sharp edges (such as a plastic carpet tuck tool) to assist with application of uniform pressure during installation of **DuPont Self-Adhered Flashing Products**.

NOTE: **StraightFlash™** is not required in cases where no fasteners are being installed through the window sill.



STEP 4

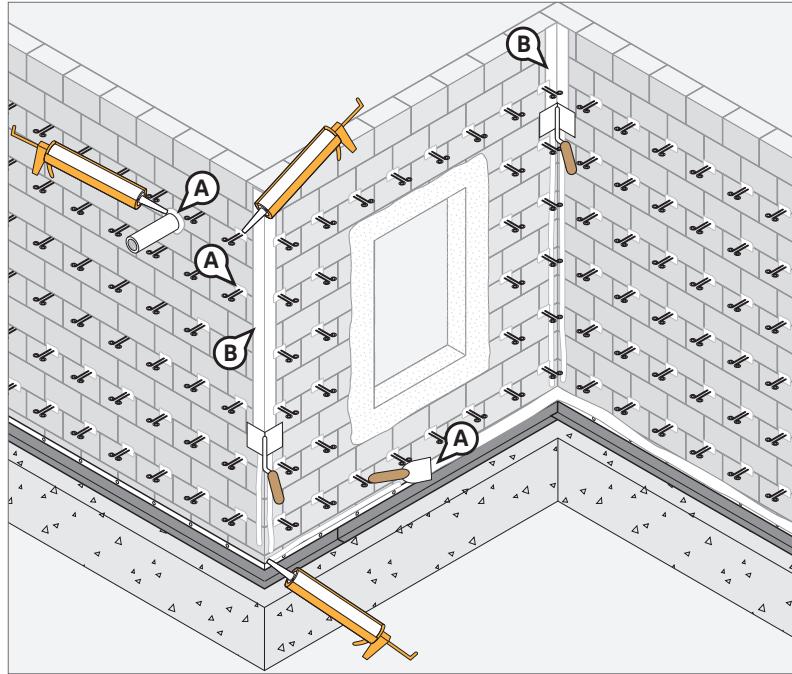
Preparing Window Rough Opening with **DuPont™ Tyvek® Fluid Applied Products**

- Remove any dirt, dust, frost, oil, grease, mold, or other substance that may affect the adhesion of **Tyvek® Fluid Applied Products** and/or **DuPont Self-Adhered Flashing Products**.
- Install **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** and/or **DuPont Self-Adhered Flashing Products** to protect the rough openings for windows and doors per the [DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines](#).

NOTE: See [DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines](#) priming requirements when **DuPont Self-Adhered Flashing Products** are used to protect the rough opening, pipe penetrations, wall substrates corners, and/or bottom of wall wall transitioning.

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

Option 2: Windows installed at same plane as Tyvek® Fluid Applied WB+™



STEP 5

Prepare CMU with Embedded Brick Ties with DuPont™ Tyvek® Fluid Applied Products

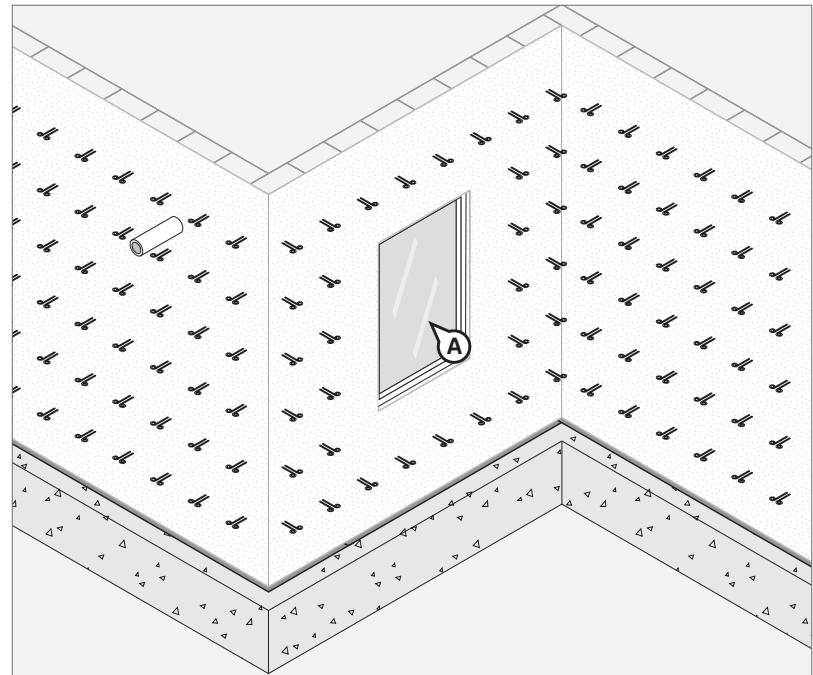
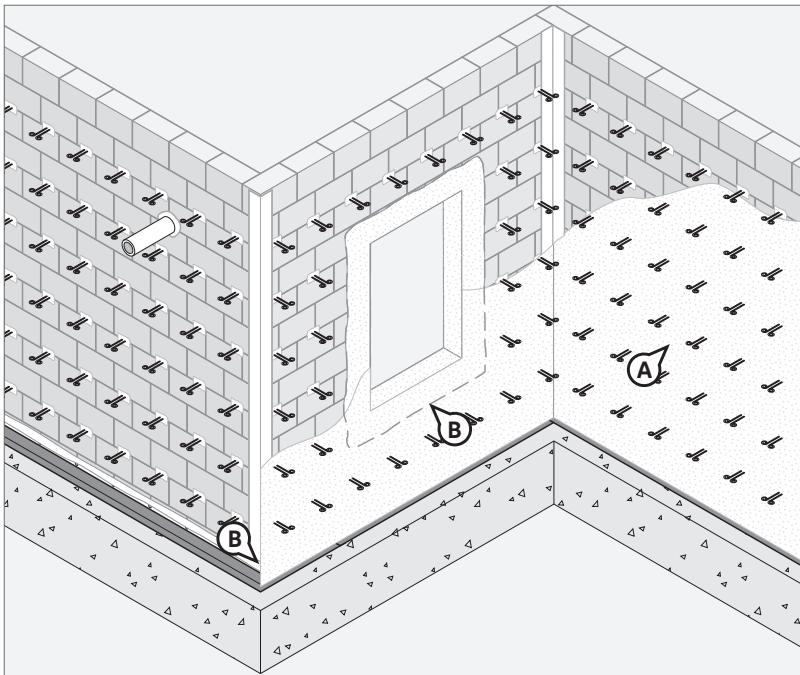
- A. Treat edges of the through wall flashing, embedded brick ties, and seal around penetrations, as necessary, using **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** or **DuPont™ Sealant for Tyvek® Fluid Applied System** according to the [DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines](#).
- B. 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 **DuPont™ StraightFlash™**. Installation can be done in part with a single piece of **StraightFlash™** or cut into more manageable lengths to be properly shingled and installed with 2" min overlap. Be sure the **StraightFlash™** is pressed tightly into the inside corners and is fully adhered to substrate.
- C. Upon completion, inspect surface, including all corners to ensure that **Tyvek® Fluid Applied Flashing and Joint Compound+** is continuous and free of any voids or pinholes.

NOTES:

- For spray applications of **Tyvek® Fluid Applied WB+™**, 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.
- When using **StraightFlash™** as a transitional membrane along the corners and/or bottom of wall, ensure the wall substrate is clean, dry, and primed with DuPont recommended primer prior to the installation of **StraightFlash™**. When treating/flashing the corners, remember to start from the bottom up. DuPont recommends self adhered flashing be installed prior to the **DuPont™ Tyvek® Fluid Applied Products**.

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

Option 2: Windows installed at same plane as Tyvek® Fluid Applied WB+™



STEP 6

Install Tyvek® Fluid Applied WB+™

Tyvek® Fluid Applied WB+™ may be applied over and integrated with DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound once a tack-free skin has formed. Skin time is 1-2 hrs at 70°F (20°C), 50% RH.

- A. Apply Tyvek® Fluid Applied WB+™ by spraying or rolling a 25-mil wet coat onto exterior gypsum sheathing. See [DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines](#) for coverage rates and cure times. Thickness should be controlled by applying the appropriate volume over a marked area and by spot checking with a wet mil gauge.
- B. 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".
- C. Upon completion, inspect the membrane to ensure that it is continuous and free of any voids or pinholes.

STEP 7

Install Window

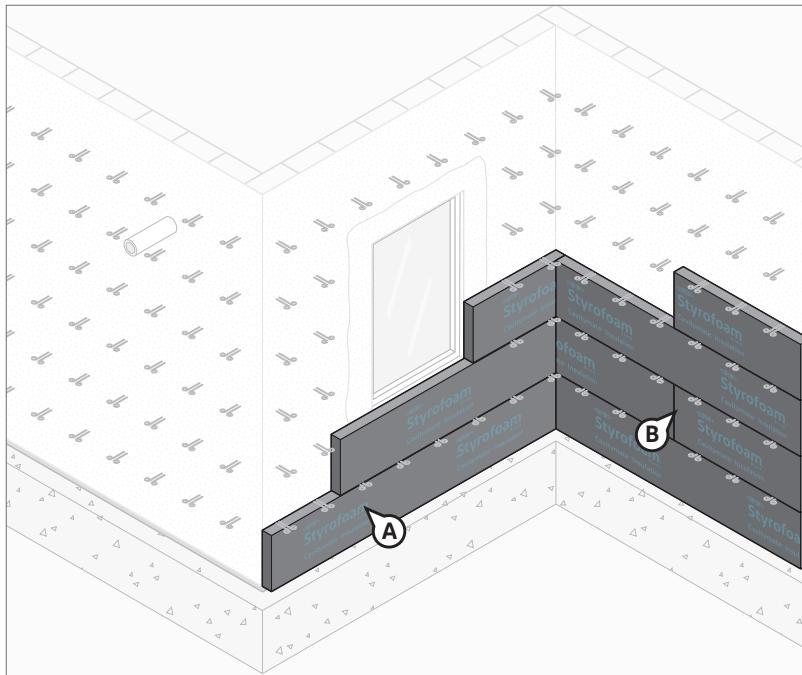
- A. After the Tyvek® Fluid Applied WB+™ has cured, install window per manufacturer's installation instructions. Apply an exterior perimeter seal using backer rod and sealant along the jambs and head of the window opening.

NOTE: Ensure window and sealant installation allows for drainage at the sill. If sealant is applied at the sill, as a best practice, ensure that there are at least two (2) 2" gaps in the sealant bead for every 4" of window to allow for drainage.

For additional information refer to the applicable method in [DuPont™ Tyvek® Fluid Applied Flashing Installations Guidelines for Buildings Greater than 4 Stories and High-Performance Installations of Any Height](#).

DuPont™ Tyvek® Fluid Applied WB+™ OVER CMU with Embedded Brick Ties and UNDER DuPont™ Styrofoam™ Brand XPS Products

Option 2: Windows installed at same plane as Tyvek® Fluid Applied WB+™



STEP 8

Install **Styrofoam™ Brand XPS Product**

- A. Install **Styrofoam™ Brand XPS Product** boards between the embedded brick ties, which will create a snug fit.
- B. Abut **Styrofoam™ Brand XPS Product** boards tightly together. Common practice is to stagger boards, but it is not required.
- C. Cut the **Styrofoam™ Brand XPS Product** so it is flush with rough opening.

NOTES:

- Refer to the applicable installation guidelines for the specified **Styrofoam™ Brand XPS Product** used.
- Ensure any exposed edges of the **Styrofoam™ Brand XPS Product** are protected during exterior wall finishing.

This bulletin is limited to the installation details for construction of the DuPont Commercial Wall² System outlined herein. Please refer to the applicable DuPont Performance Building Solutions Installation Guidelines available at building.dupont.com for details not included in this bulletin. 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.

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