DuPont Commercial Wall² System

DuPont™ Tyvek® Fluid Applied WB+™ UNDER DuPont Exterior Continuous Insulation

Installation Bulletin

• Optimizes Thermal Efficiency and Durability Using DuPont™ Styrofoam™ Brand Extruded Polystyrene (XPS) or DuPont™ Thermax™ Brand Polyisocyanurate Board Insulation.

• Maximizes Air and Water Protection Using DuPont™ Tyvek® Fluid Applied WB+™.

• Meets Fire Performance Requirements of NFPA 285.

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Introduction

The DuPont Commercial Wall\textsuperscript{2} System in this document is based on in-depth, rigorous testing of enhanced wall assemblies that reflect the "Power of Two" when DuPont\textsuperscript{™} Tyvek\textsuperscript{®} Fluid Applied WB+\textsuperscript{™} and DuPont\textsuperscript{™} Styrofoam\textsuperscript{™} Brand Extruded Polystyrene (XPS)\textsuperscript{*} or DuPont\textsuperscript{™} Thermax\textsuperscript{™} Brand Polyisocyanurate Insulation\textsuperscript{*} are used together to protect the building above and beyond building code minimums. This bulletin is intended for commercial buildings comprised of steel framing. 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 Wall\textsuperscript{2} 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. It does not override or change requirements in the DuPont Performance Building Solutions Installation Guidelines or product-specific Warranties, with the exception of using Rodenhouse Grip-Deck\textsuperscript{®} TubeSeal\textsuperscript{™} Fasteners to secure the Styrofoam\textsuperscript{™} or Thermax\textsuperscript{™} Exterior Continuous Insulation (CI) products to qualify for the enhanced Commercial Wall\textsuperscript{2} System Warranty. The DuPont Commercial Wall\textsuperscript{2} 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\textsuperscript{™} Tyvek\textsuperscript{®} Fluid Applied Products, DuPont Self-Adhered Flashing Products, or DuPont Exterior Continuous Insulation (CI) products. Product specific information is available at building.dupont.com/commercial.

DuPont Commercial Wall\textsuperscript{2} System DuPont Exterior Continuous Insulation Fastener Considerations

When the Tyvek\textsuperscript{®} Fluid Applied WB+\textsuperscript{™} is installed under the DuPont Exterior CI, Rodenhouse Grip-Deck\textsuperscript{®} TubeSeal\textsuperscript{™} Fasteners are required to secure the insulation to the metal framing structure as part of the Commercial Wall\textsuperscript{2} System. The Rodenhouse Grip-Deck\textsuperscript{®} TubeSeal\textsuperscript{™} Fasteners are preassembled with a plastic tube to provide a gasketed seal at each blind fastener penetration through the Tyvek\textsuperscript{®} Fluid Applied WB+\textsuperscript{™}. This eliminates the need for additional fastener treatment to prevent air and water leakage at fastener locations. The Grip-Deck\textsuperscript{®} TubeSeal\textsuperscript{™} Fasteners come in lengths to accommodate insulation that is 1-4” in thickness, by increments of 1/2”. The plastic tube is sized 1/8” longer than the thickness of the insulation to ensure proper sealing when compressed during installation.

*A former product of The Dow Chemical Company.
DuPont Commercial Wall² System Exterior Sheathing and/or Exterior Cladding Fastener Considerations

It is important to consider minimizing the total number of fasteners used to attach the exterior sheathing, DuPont Exterior Continuous Insulation (CI), and the exterior facade system. All fasteners used for the DuPont Exterior CI and/or exterior facade (cladding) systems should be securely fastened back to the metal framing structure per manufacturer recommendations. When cladding attachment systems are used, Project Construction Management may determine if conditions allow the fastening pattern of the exterior sheathing to be reduced with the subsequent required fasteners used to secure the designated wall system.

DuPont Commercial Wall² System Applicable Products

DuPont Exterior Continuous Insulation
• Styrofoam™ Brand Extruded Polystyrene (XPS)
  (Up to 3” depending on NFPA 285 approval and IBC)
• Thermax™ Brand Polyisocyanurate Insulation
  (Up to 4” 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™

Installation Accessories
• Rodenhouse Grip-Deck® TubeSeal™ Fasteners for attachment of DuPont Exterior CI

DuPont™ Tyvek® Fluid Applied WB+” UNDER DuPont Exterior Continuous Insulation

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 Installation Guidelines. 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 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+™ UNDER Exterior Insulation 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.
DuPont™ Tyvek® Fluid Applied WB+™ UNDER DuPont Exterior Continuous Insulation

**Example 1**
Windows installed onto wood bump out frame and aligned with exterior finished wall

**Example 2**
Windows installed at same plane as Tyvek® Fluid Applied WB+™

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**STEP 1**
Install Exterior Gypsum Sheathing and Prepare Window Rough Opening with DuPont™ Tyvek® Fluid Applied Products

A. Secure exterior gypsum sheathing to metal studs according to manufacturer instructions.
B. Install through wall flashing at bottom of wall according to manufacturer instructions.
C. Install bump out framing per plans and specifications if installing according to Example 1.
D. 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.

E. 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 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 wall transitioning.
**Example 1**
Windows installed onto wood bump out frame and aligned with exterior finished wall

**Example 2**
Windows installed at same plane as Tyvek® Fluid Applied WB+™

**STEP 2**

Prepare Exterior Gypsum Sheathing with DuPont™ Tyvek® Fluid Applied Products

A. Treat exterior gypsum seams, edges of through wall flashing, 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/flashin the corners, remember to start from the bottom up.
Example 1
Windows installed onto wood bump out frame and aligned with exterior finished wall

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

STEP 3
Install Tyvek® Fluid Applied WB+™

Tyvek® Fluid Applied WB+™ may be applied over and integrated with 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 (0.635 mm) 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.
DuPont™ Tyvek® Fluid Applied WB+™ UNDER DuPont Exterior Continuous Insulation

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

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

STEP 4
Install Window

A. After the Tyvek® Fluid Applied WB+™ has cured, Install window per the applicable Method in DuPont™ Tyvek® Fluid Applied Flashing Installation Guidelines.
**DuPont™ Tyvek® Fluid Applied WB+™ UNDER DuPont Exterior Continuous Insulation**

**Example 1**
Windows installed onto wood bump out frame and aligned with exterior finished wall

**Example 2**
Windows installed at same plane as Tyvek® Fluid Applied WB+™

**STEP 5**
Install DuPont™ Styrofoam™ Brand Extruded Polystyrene (XPS) Insulation or DuPont™ Thermax™ Brand Polyisocyanurate Board Insulation

A. Secure the DuPont Exterior Continuous Insulation (CI) boards to metal studs with printed side facing to the exterior using Rodenhouse Grip-Deck® TubeSeal™ Fasteners.

B. Abut DuPont Exterior CI boards tightly together. Common practice is to stagger boards but, it is not required.

C. Fasten DuPont Exterior CI boards @ max. 12” o.c. at wall perimeters.

D. Fasten DuPont Exterior CI boards @ max. 16” o.c. around openings and in field of wall.

E. Set back perimeter fasteners 3/8” from DuPont Exterior CI board edges and ends.

F. One fastener can be used at intersection of 2 boards but, use at least 2 fasteners at intersection of 3 or more boards.

G. **Example 1:** If windows are installed onto a wood bump out frame and aligned with the exterior finished wall, cut the DuPont Exterior CI so it will fit flush around bump-out frame.

H. **Example 2:** If windows were installed in the plane of the Tyvek® Fluid Applied WB+™, cut the DuPont Exterior CI so it is flush with rough opening.

**Notes:**
- Refer to the applicable installation guidelines for the specified DuPont Exterior CI product.
- If the windows are recessed from the exterior wall per Example 2, ensure any exposed edges of the DuPont Exterior CI 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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