DuPont Performance Building Solutions

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DuPont[™] Tyvek[®] Water-Resistive and Air Barriers (WRB) and DuPont Self-Adhered Flashing Products Installation Guidelines

Windows and Doors Installed **AFTER** the Tyvek[®] WRB



For Type III and Type V Wood-Framed Structures Including Multi-Family and Light Commercial Buildings



April 2023

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Introduction

This Installation Guideline pertains to wood-framed buildings of any height, of Type III and Type V construction, including multi-family buildings and light commercial buildings. See Applicable Structures and Performance Criteria for more information regarding building types and building envelope performance.

This Installation Guideline outlines recommended installation techniques and details for DuPont Self-Adhered Flashing Products installed AFTER DuPont[™] Tyvek[®] Water **Resistive and Air Barriers**, referred to in this document as **DuPont[™] Tyvek[®] WRBs**. This includes DuPont[™] Tyvek[®] HomeWrap[®], Tyvek[®] StuccoWrap[®], Tyvek[®] DrainWrap[™], Tyvek[®] ThermaWrap[®] LE, Tyvek[®] CommercialWrap[®] and/or Tyvek[®] CommercialWrap[®] D. Where applicable, **DuPont[™] Tyvek[®] Fluid Applied Products** are shown installed in conjunction with Tyvek® WRBs in hybrid conditions. Both Tyvek® WRBs and Tyvek® Fluid Applied Products meet or exceed the requirements of a water-resistive barrier as defined in the 2021 International Building Code (IBC).

Always check building.dupont.com for the latest versions of DuPont Installation Guidelines and other product literature.

Applicable Products

Water-Resistive and Air Barriers (Tyvek[®] WRBs)

Product	Dimensions	Агеа
DuPont [™] Tyvek [®] HomeWrap [®]	3 ft x 100 ft 3 ft x 165 ft 5 ft x 200 ft 9 ft x 100 ft 9 ft x 150 ft 10 ft x 150 ft 10 ft x 150 ft	300 ft ² 495 ft ² 1,000 ft ² 900 ft ² 1,350 ft ² 1,000 ft ² 1,500 ft ²
DuPont [™] Tyvek [®] StuccoWrap [®]	5 ft x 200 ft	1,000 ft ²
DuPont [™] Tyvek [®] DrainWrap [™]	9 ft x 125 ft 10 ft x 125 ft	1,125 ft ² 1,250 ft ²
DuPont [™] Tyvek [®] ThermaWrap [®] LE	5 ft x 150 ft 9 ft x 100 ft	750 ft ² 900 ft ²
DuPont [™] Tyvek [®] CommercialWrap [®]	5 ft x 200 ft 10 ft x 125 ft	1,000 ft ² 1,250 ft ²
DuPont [™] Tyvek [®] CommercialWrap [®] D	5 ft x 200 ft 10 ft x 125 ft	1,000 ft ² 1,250 ft ²

Fluid Applied Products

Product	Quantity
DuPont [™] Tyvek [®] Fluid Applied WB+ [™]	5 gal, 50 gal
DuPont [™] Tyvek [®] Fluid Applied Flashing and Joint Compound+	28 oz, 3.5 gal
DuPont [™] Sealant for Tyvek [®] Fluid Applied System*	28 oz

*DuPont[™] Sealant for Tyvek[®] Fluid Applied System should only be used as directed in the applicable DuPont[™] Tyvek[®] Fluid Applied Products Installation Guidelines.

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Self-Adhered Flashing Products

Product	Width
DuPont [™] FlexWrap [™] EZ	2.75 in
DuPont[™] FlexWrap[™] (Formerly DuPont [™] FlexWrap [™] NF)	6 in 9 in
DuPont [™] StraightFlash [™]	4 in 9 in
DuPont[™] VersaFlange[™] (Formerly DuPont [™] StraightFlash [™] VF)	6 in
DuPont [™] Flashing Tape	4 in 6 in 9 in 12 in

Installation Accessories

Product	Туре	Quantity
DuPont [™] Tyvek [®] Tape	2 in Bulk Pack 3 in Bulk Pack	6 rolls/bulk pack
DuPont [™] Tyvek [®] Metallized Tape	2 in x 100 ft Rolls	12 rolls/case
DuPont [™] Tyvek [®] Wrap Cap Staples or other cap staples for Stinger [®] Cap Stapler	7/8 in, 1-1/4 in, and 1-1/2 in lengths 3/8 in and 5/8 in lengths	2,000/box 2,016/box
DuPont [™] Tyvek [®] Wrap Cap Nails	1 in electro-galvanized ring shank nail	2,000/box
DuPont [™] Tyvek [®] Wrap Cap Screws	2 in dia. plastic cap, 1-3/4 in screw length	1,000/box
Great Stuff Pro [™] Window & Door Polyurethane Foam Sealant	Can (reusable dispensing gun sold separately)	20 oz
Great Stuff Pro [™] Gaps & Cracks Polyurethane Foam Sealant	Can (reusable dispensing gun sold separately)	20 oz
DuPont [™] RainVent [™] Battens	5/8 in x 3/8 in x 8 ft	40/pack
DuPont [™] Tyvek [®] DrainVent [™] Rainscreen	4 ft x 50 ft roll	
Tower [®] Posidoptial Spalant		

Tower[®] Residential Sealant (formerly DuPont[™] Residential Sealant)

TRUFAST[®] Walls Grip-Deck[®] screws with Thermal-Grip FastCap[™] washers (TRUFAST[®] Walls formerly Rodenhouse)¹

¹For information regarding installation of TRUFAST® Walls fasteners, refer to the Key Installation Requirements for DuPont[™] Tyvek[®] WRBs section of this document.

Additional Materials Based on Project Requirements, Details, and Specifications¹

- Backer Rod
- Sealant²
- Adhesive/Primer²
- Brushes for Surface Preparation
- J-Roller
- Trowels

¹Apply per manufacturers' guidelines. **For non DuPont products, DuPont assumes no liability in use of recommended products** — installers need to evaluate suitability of recommended products in their end-use applications.

²For information regarding chemically compatibility of sealants, see technical bulletin <u>Chemical Compatibility of</u> <u>Representative Building Sealants and Adhesives/Primers</u>.

Warranty

Please refer to the <u>DuPont Building Envelope Solutions Products 10-Year Limited Warranty</u> for Single-Family, Wood-Framed Multi-Family, and Light Commercial Buildings. For steelframed, masonry, or high-performance buildings of any type, please refer to the <u>DuPont</u> <u>Building Envelope Solutions Products 10-Year Limited Warranty for Commercial and High-</u> <u>Performance Buildings of Any Height.</u>

NOTE: In order to make a claim under the DuPont Performance Building Solutions 10-Year Limited Product and Labor Warranty, you must have met all of the terms and conditions of the warranty, including use of the applicable DuPont Installation Guidelines available at the date of original installation. In the event that a specific detail or installation technique is not covered in the DuPont Installation Guidelines at the time of construction, then the Key Installation Requirements outlined in this document must have been followed in order to make a claim under the warranty. It is in the sole discretion of DuPont to determine if full compliance with the Key Installation Requirements exists. Please contact DuPont or a DuPont Representative if you have any questions regarding any DuPont Installation Guideline.

Applicable Structures

These Installation Guidelines pertain solely to Wood-Framed Multi-Family and Light Commercial Buildings as defined below.

DuPont categorizes structures into three primary groups:

- i.) "Single-Family Residential Buildings" are defined as fully-detached one or two family structures, as well as townhouse structures not more than three stories above grade plane as defined in the 2021 International Residential Code (IRC) Section R101.2, both to the extent they are exclusively Residential Use building structures.
- ii.) **"Wood-Framed Multi-Family and Light Commercial Buildings**" are defined by DuPont as the following (must meet **ALL** criteria):
 - a. Constructed of wood-based structural exterior framing of Type III or Type V Construction* (IBC Chapter 6); and
 - b. Does not exceed 2021 IBC max height (Table 504.3) for Type V construction (70 ft.) or Type III construction (85 ft.), including allowances for Automatic Sprinkler height increase (IBC 504.1 and Table 504.4) and 'podium' structures outlined in the Special Provisions* (IBC Section 510); and
 - c. Design requirements for the building envelope do not exceed air barrier performance of ASTM E1677 (10.8 psf structural load, 65 mph equivalent wind load), and water infiltration resistance criteria of 6.24 psf (50 mph equivalent wind-driven rain) when tested in accordance with ASTM E331, ASTM E1105, or equivalent.

*Special Provisions (IBC Section 510) allows for a "horizontal building separation", or 'podium', to be built under the wood-framed Type III or Type V building. The podium is typically constructed of steel framing or concrete. Podium-style buildings are included under "Wood-Framed Multi-Family and Light Commercial Buildings", as long as all other definition criteria (a. through c. above) are met.

- iii.) "Commercial and High-Performance Buildings of Any Height" are defined by DuPont as any of the following:
 - a. Structures constructed of steel-based structural exterior framing and any exterior sheathing, or
 - b. Structures with exterior above grade walls constructed of concrete or concrete masonry units (CMU), or
 - c. Structures of any height and construction type (including any framing type) that are designated as high-performance. "High-performance" is defined as air barrier performance exceeding ASTM E1677 and/or water infiltration resistance criteria exceeding 6.24 psf when tested in accordance with ASTM E331, ASTM E1105, or equivalent.

NOTE: "Podium" style structures with wood-framed floors built above steelframed or concrete/CMU floors are covered under "Wood-Framed Multi-Family and Light Commercial Buildings" unless they are "high-performance".

Water-Resistive Barrier Performance Requirements

These Installation Guidelines pertain to Wood-Framed Multi-Family and Light Commercial Buildings with air barrier performance not exceeding ASTM E1677 (10.8 psf structural load, 65 mph equivalent wind load), and water infiltration resistance criteria not exceeding 6.24 psf (50 mph equivalent wind-driven rain) when tested in accordance with ASTM E331, ASTM E1105, or equivalent.

Buildings with high-performance air barrier designs are defined by DuPont as those with air barrier performance equivalent to ASTM E2357 (or other exceeding ASTM E1677), and/or water infiltration resistance criteria greater than 6.24 psf when tested in accordance with ASTM E331, ASTM E1105, or equivalent. Installation of DuPont Building Envelope Solutions Products on high-performance buildings requires the use of the <u>DuPont™ Tyvek® Mechanically-Fastened Water-Resistive and Air Barrier (WRB) and</u> <u>DuPont Self-Adhered Flashing Products Installation Guidelines for Commercial and High Performance Buildings of Any Height</u>.

Allowable Building Height and Number of Stories

Chapter 5 of the 2021 International Building Code (IBC) contains information regarding the maximum height and number of stories for buildings of Group R Occupancy Classification (IBC Section 310). Including increased allowances for automatic sprinklers and a "podium" horizontal building separation (Section 510), Group R buildings of Type III or Type V construction can have the following **maximum heights above grade plane**:

Buildings with Group R (Residential) Occupancy Classification

Type of Construction	Maximum Building Height in Feet Per 2021 IBC Table 504.3
VA	70
VB	60
IIIA	85
IIIB	75

For Wood-Framed Multi-Family and Light Commercial Buildings up to 70 feet in height, any DuPont[™] Tyvek[®] WRB can be used. For buildings between 70 and 85 feet in height, DuPont[™] Tyvek[®] CommercialWrap[®] or DuPont[™] Tyvek[®] CommercialWrap[®] D must be used on all above grade wood-framed exterior walls, and 3" Tyvek[®] Tape must be used.

NOTE: In general, **Tyvek**[®] **CommercialWrap**[®] or **Tyvek**[®] **CommercialWrap**[®] **D** are recommended for Wood-Framed Multi-Family and Light Commercial Buildings due to their increased durability and UV exposure limit which can help accommodate longer construction times. See <u>Product Composition and UV Stability</u> section for more information.

Applicable Structures and Performance Criteria

DuPont Building Envelope Solutions Products Installation Considerations for Wood-Framed Multi-Family and Light Commercial Buildings

These Installation Guidelines should be used for buildings which meet the applicable structures definitions and performance criteria on the previous page. The following table provides a summary of typical installation information. For more information, please see the respective section in this document.

Installation Considerations	Total Building Height Above Grade Plane ¹	
	70 Feet and Under	70 – 85 Feet
Performance Criteria	Building air barrier performance not exceeding ASTM E1677, AND WRB and self-adhered flashing water infiltration resistance criteria not exceeding 6.24 psf when tested in accordance with ASTM E331, ASTM E1105, or equivalent.	
Tyvek [®] WRB ²	DuPont [™] Tyvek® HomeWrap®, Tyvek® DrainWrap [™] , Tyvek® StuccoWrap®, Tyvek® CommercialWrap®, Tyvek® CommercialWrap® D	Tyvek[®] CommercialWrap[®] , Tyvek[®] CommercialWrap[®] D (required on all above grade wood-framed exterior walls)
DuPont [™] Tyvek [®] Fluid Applied Products	Can be used on any above grade exterior wall where specified in hybrid details in this guide. Recommended for use on above grade exterior CMU and/or concrete walls. Refer to the <u>DuPont[™] Tyvek® Fluid Applied WB+[™] and DuPont</u> <u>Flashing Products Installation Guidelines</u> for additional information.	
DuPont [™] Tyvek [®] Tape	2" (3" required when using Tyvek[®] DrainWrap[™], Tyvek[®] StuccoWrap[®] , or Tyvek[®] CommercialWrap[®] D)	3"
Typical Recommended Fasteners and Spacing ³	1" DuPont™ Tyvek® Wrap Cap Staples or Nails (or equivalent) fastened along stud lines spaced at 6" – 18" vertically	2" DuPont™ Tyvek® Wrap Cap Screws or approved TRUFAST® Walls Fasteners (formerly Rodenhouse) 1" plastic cap fasteners are considered temporary fasteners
Air Barrier Details	Required when the designated building envelope performance requirements are equivalent to ASTM E1677	
Tyvek [®] WRB Terminations to Sheathing	DuPont Self-Adhered Flashing Products	
Recommended Window/Door Head Flap Treatment	DuPont [™] Tyvek [®] Tape or DuPont Self-Adhered Flashing Products	DuPont Self-Adhered Flashing Products Install mechanical fasteners through flashing as needed for increased holding power
Self-Adhered Flashing Patches behind Cladding Fasteners	Required when water infiltration resistance criteria for the building envelope exceeds 0.56 psf (15 mph equivalent wind-driven rain), nominal test pressure per ASTM E1677. See <u>Alternate Fastening</u> section for more information.	

¹Height above grade plane based on the approved calculation method as defined in architectural plans/construction documents.

²Buildings requiring NFPA 285 compliance must use **Tyvek**[®] **CommercialWrap**[®] or **Tyvek**[®] **CommercialWrap**[®] **D** in accordance with <u>DuPont NFPA 285 documentation</u>.

³For increased holding power and for higher air and water holdout performance, DuPont recommends fasteners of sufficient length to penetrate securely into the stud. Temporary Fastening methods can be used. See *Temporary Fastening* section for more information.

Water-Resistive Barrier (WRB) Code Requirements

The 2021 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. Section 1403.2 (Water-resistive barrier) states that "not fewer than one layer of No. 15 asphalt felt, complying with ASTM D226 for Type 1 felt or other approved materials, shall be attached to the studs or sheathing, with flashing as described in Section 1404.4 in such a manner as to provide a continuous water-resistive barrier behind the exterior sheat in the exterior veneer."

The **DuPont[™] Tyvek[®] WRBs** listed below qualify as approved water-resistive barriers based on ICC-ES AC38 Acceptance Criteria according to the associated Evaluation Reports:

- ICC-ES Evaluation Report ESR 2375
 - DuPont[™] Tyvek[®] HomeWrap[®]
 - DuPont[™] Tyvek[®] StuccoWrap[®]
 - DuPont[™] Tyvek[®] DrainWrap[™]
 - DuPont[™] Tyvek[®] CommercialWrap[®]
 - DuPont[™] Tyvek[®] CommercialWrap[®] D
- ICC-ESR-1993: DuPont[™] Tyvek[®] ThermaWrap[®] LE

DuPont[™] Tyvek[®] Fluid Applied WB+[™] meets ICC-ES AC212, Acceptance Criteria for Water-Resistive Coatings Used as Water-Resistive Barriers Over Exterior Sheathing, per the following:

Intertek Code Report: CCRR-0307 for Tyvek[®] Fluid Applied WB+[™]

Air leakage control and air barriers are required in the IECC-2021 Sections R402.4 and C402.5. Specifically, Section C402.5 identifies three compliance options for air barriers. **Tyvek**[®] **WRBs** comply with the option detailed in Section C402.5.1.2.1 Materials:

"Materials with an air permeability no greater than 0.004 cfm/ft₂ (0.02 L/s x m²) under a pressure differential of 0.3 inches water gauge (75 Pa) when tested in accordance with ASTM E2178 shall comply with this section." **Tyvek**[®] **WRBs** have been tested in accordance with ASTM E2178 and have air permeability less than 0.004 cfm/ft² (0.02 L/s x m²).

All Tyvek[®] WRBs have been tested to the following standards:

- ASTM E2556 Type II Standard Specification for Vapor Permeable Flexible Sheet
 Water-Resistive Barriers Intended for Mechanical Attachment
- ASTM E1677 Standard Specification for an Air Retarder (AR) 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
- AATCC 127 Test Method for Water Resistance: Hydrostatic Pressure
- ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E2273 Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies (excludes Tyvek[®] ThermaWrap[®] LE and Tyvek[®] Fluid Applied WB+[™])

The application of **Tyvek**[®] **WRBs** is governed by the code adopted and enforced by the local jurisdiction. Consult your jurisdiction to assure compliance with the local building code.

Flashing Products Code Requirements

The 2021 International Building Code (Section 1404.4 Flashing) requires that "flashing shall be installed in such a manner so as to prevent moisture from entering the wall or to redirect that moisture to the exterior. Flashing shall be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, chimneys, porches, decks, balconies and similar projections and at built-in gutters and similar locations where moisture could enter the wall. Flashing with projecting flanges shall be installed on both sides and the ends of copings, under sills and continuously above projecting trim. Where self-adhered membranes are used as flashings of fenestration in wall assemblies, those self-adhered flashings shall comply with **AAMA 711**. Where fluid applied membranes are used as flashing for exterior wall openings, those fluid applied membrane flashings shall comply with **AAMA 714**."

- **DuPont Self-Adhered Flashing Products** comply with **AAMA 711** (an FGIA Specification) Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products.
- DuPont[™] Tyvek[®] Fluid Applied Flashing and Joint Compound+ complies with AAMA 714, Voluntary Specification for Liquid Applied Flashing Used to Create a Water-Resistive Seal around Exterior Wall.

Additional Codes and Standards Information for DuPont[™] Tyvek[®] Commercial Air and Water Barrier Systems

DuPont[™] Tyvek[®] CommercialWrap[®], Tyvek[®] CommercialWrap[®] D, DuPont[™] StraightFlash[™], DuPont[™] FlexWrap[™], and DuPont[™] Tyvek[®] Fluid Applied Products were

designed for the rigors of heavy commercial construction. These commercial products have been tested to the following standards:

- ABAA Evaluated
- ASTM E2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
- ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Pressure
- ASTM E1105 Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Door, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference
- 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
- AAMA 501.5 Test Method for Thermal Cycling of Exterior Walls
- NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components

Energy Conservation Codes for commercial buildings are being adopted in many regions across the U.S. **DuPont[™] Tyvek[®] Water-Resistive and Air Barriers (WRBs)** currently meet the following codes and guidelines.

- ASHRAE 90.1 Model Energy Code air barrier requirements
- 2021 International Energy Conservation Code[®] (IECC)
- 2021 International Green Construction Code[™] (IgCC)

General Instructions

The best time to install **Tyvek[®] WRBs** is:

- AFTER the roof sheathing is installed
- AFTER the step, kick-out, or through wall flashings have been installed
- BEFORE the windows and doors are installed.

DuPont Self-Adhered Flashing Products are not intended for through-wall flashing applications.

Special Considerations

- These Installation Guidelines, including the allowable use of DuPont Products, are based on building air barrier performance not exceeding ASTM E1677, and Tyvek[®]
 WRBs and self-adhered flashing water infiltration resistance criteria not exceeding 6.24 psf when tested in accordance with ASTM E331, ASTM E1105, or equivalent. For buildings with design requirements exceeding these criteria, the use of the *Commercial and High Performance Installation Guidelines* is required.
- Buildings requiring NFPA 285 compliance must use Tyvek[®] CommercialWrap[®] or Tyvek[®] CommercialWrap[®] D in accordance with DuPont NFPA 285 documentation. See <u>NFPA 285 Compliant Wall Assemblies with DuPont[™] Tyvek[®] Commercial Air and Water Barrier Systems and building.dupont.com for more information.
 </u>
- DuPont Self-Adhered Flashing Products should be installed on clean, dry surfaces that are free of frost and/or obstructions that could compromise flashing install. Wipe surfaces to remove moisture, dirt, grease and other debris that could interfere with adhesion.
- 4. **DuPont Self-Adhered Flashing Products** perform best when installed at temperatures above 25°F (-4°C).
- 5. Adverse weather conditions or cold temperatures may require use of an adhesive/ primer to promote adhesion of DuPont Self-Adhered Flashing Products to most common building materials. Concrete, masonry, and fiber-faced exterior gypsum board require the use of a recommended adhesive/primer. Do not apply adhesive/ primer to exterior continuous insulation due to potential sheathing degradation.
- 6. Remove all wrinkles and bubbles that may allow for water intrusion by smoothing surface and repositioning as necessary during installation of **DuPont Self-Adhered Flashing Products**. 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.
- 7. Building envelope design requirements exceeding 0.56 psf (15 mph equivalent wind-driven rain) water infiltration resistance per ASTM E1677 require StraightFlash[™], DuPont[™] Flashing Tape or recommended alternate patches behind fastening plates (brick tie base plates, metal fastening clips, metal channels, etc.). When used behind the cladding fasteners and/or fastening plates, the flashing patch must be adhered to the Tyvek[®] WRB.

Special Considerations

- 8. **DuPont Self-Adhered Flashing Products** are not intended for through-wall flashing applications.
- 9. When using mechanically fastened through-wall flashing, DuPont recommends sealing top edge with **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]**.
- 10. When flashing the sill area for windows and doors, DuPont recommends the use of 6" wide DuPont[™] FlexWrap[™] for 2"x 4" framing and 9" wide FlexWrap[™] for 2" x 6" framing. When rigid back dams are required or desired, an option would be to use a 3/4" corner guard (back dam) cut to the length of the sill and nail into place on the interior edge of the sill prior to installation of 9" wide FlexWrap[™]. Then install 9" wide FlexWrap[™] over sill and corner guard back dam.
- 11. **Do Not Stretch FlexWrap**[™] when installing along sills or jambs. **FlexWrap**[™] is only intended to be stretched when covering corners or curved sections.
- 12. Use DuPont Self-Adhered Flashing Products with roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the back of the window or door frame will be located to allow for the creation of the interior perimeter seal.
- When installing DuPont[™] FlexWrap[™] EZ and FlexWrap[™] on penetrations or other wall conditions, ensure the flashing will not be exposed after completion of cladding.
- 14. **DuPont Self-Adhered Flashing Products** can be used to bridge non-movement gaps up to 1" unsupported. Flashing must maintain a 2" adhesive lap on the wall substrate.
- 15. Do Not Apply DuPont[™] Tyvek[®] Tape or DuPont Self-Adhered Flashing Products over DuPont[™] Tyvek[®] Wrap Cap Fasteners, or recommended fasteners however, fasteners can be installed over the flashing.
- 16. When installing the **DuPont[™] Tyvek[®] WRB**, **do not install** fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.
- 17. Great Stuff Pro[™] Window and Door Polyurethane Foam Sealant can be used in lieu of sealant to create a continuous seal around the interior perimeter of the window openings. When using Great Stuff Pro[™] Window and Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff[™] Dispenser Gun during installation.
- For extreme/coastal exposures, installation of a high-pressure skirt is recommended to help prevent water intrusion at the sill or threshold.
- For additional wind load resistance, the use of DuPont[™] Flashing Tape or StraightFlash[™] with Tyvek[®] Wrap Cap Fasteners, or recommended fasteners can be installed to secure the head flap of the windows.
- 20. DuPont[™] Flashing Tape or StraightFlash[™] are the recommended method for terminating the Tyvek[®] WRB at top and bottom of wall, at head flaps, and at other horizontal and vertical locations. Tyvek[®] Tape can be used as indicated in this Installation Guideline to seal the Tyvek[®] WRB to most plastic top sheets of self-adhered products and to thin metal flashings (e.g. drip caps or through wall kick-out flashings). Tyvek[®] Tape should NOT be used to seal Tyvek[®] WRBs to wood framing/sheathing, exterior gypsum sheathing, or masonry.

- Tyvek[®] Tape is a seam tape primarily designed to seal Tyvek[®] WRB seams. Tyvek[®] Tape is NOT a flashing product, and should not be used in applications where a flashing product is required.
- 22. Before applying **Tyvek**[®] **Tape**, surfaces should be dry and clean. During installation apply firm, even pressure with hand or "J" roller.
- 23. In lieu of temporarily taping, **Tyvek[®] WRB** flaps at window head and jambs can be tucked under the installed **Tyvek[®] WRB**.
- 24. Door and window rough sill framing must be level or slightly sloped to the exterior to ensure proper drainage to the exterior. This best practice ensures continuous support with positive slope to the exterior.
- 25. For window or door openings greater than 6 feet wide, DuPont[™] Flashing Tape or StraightFlash[™] can be used with FlexWrap[™] in 3-piece sill/head applications. DuPont[™] Flashing Tape or StraightFlash[™] should be applied the length of the sill prior to placing the FlexWrap[™] corners. The FlexWrap[™] corners should be at least 12" long allowing for 6" up the jamb and 6" of overlap on the FlexWrap[™] sill flashing. When applying the 3-piece flashing detail to the head of the opening, the DuPont[™] Flashing Tape or StraightFlash[™] head piece should be applied prior to installing the FlexWrap[™] corner flashing. Minimum overlapping of the FlexWrap[™] head flashing and jamb flashing should be a minimum of 6". Registered DuPont Certified Installers may use the 3-piece sill/head flashing method on window and door openings of any size. Please contact your local Building Envelope Specialist for additional information.
- 26. **DuPont[™] Tyvek[®] DrainWrap[™]**, **Tyvek[®] StuccoWrap[®]**, and **Tyvek[®] CommercialWrap[®] D** must be installed with the grooves going up and down.
- 27. DuPont[™] Tyvek[®] HomeWrap[®] and Tyvek[®] CommercialWrap[®] provide >90% drainage efficiency, and Tyvek[®] DrainWrap[™], Tyvek[®] StuccoWrap[®], and Tyvek[®] CommercialWrap[®] D provide >98% drainage efficiency when tested in accordance with ASTM E2273.
- 28. No surface preparation is needed for the installation of Tyvek® WRBs.
- 29. Suitable substrates for DuPont[™] Tyvek[®] Fluid Applied Products include concrete masonry unit (CMU), concrete (48 hrs. cure for green concrete), exterior gypsum, OSB, plywood, wood, and metal. Contact your local DuPont Representative for use with pressure treated or fire retardant treated wood (FRT).
- 30. DuPont recommends the use of the DuPont[™] Tyvek[®] Fluid Applied Air Barrier System for CMU walls with embedded brick ties. Please refer to the <u>DuPont[™]</u> <u>Tyvek[®] Fluid Applied WB+[™] and DuPont Flashing Products Installation Guidelines</u> for specific installation instructions.
- 31. 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.

Special Considerations

- 32. When DuPont[™] Tyvek[®] Fluid Applied Products are used as the air and water barrier, DuPont[™] Tyvek[®] WRBs may be installed as an "intervening layer" over Tyvek[®] Fluid Applied Products after 48 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 <u>Facade</u> <u>Considerations</u>.
- 33. Uncured **Tyvek[®] Fluid Applied Products** must not come in contact with building wraps due to potential impact on performance properties.
- 34. DuPont[™] Tyvek[®] CommercialWrap[®] and Tyvek[®] CommercialWrap[®] D may be installed over Tyvek[®] Fluid Applied Products after 48 hours of curing at 70°F (20°C) and 50% RH.
- 35. **DuPont[™] Tyvek[®] HomeWrap[®]**, **Tyvek[®] StuccoWrap[®]**, and/or **Tyvek[®] DrainWrap[™]** should not come in direct contact with cured or uncured **Tyvek[®] Fluid Applied Products**.
- 36. **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.
- 37. DuPont[™] Tyvek[®] Fluid Applied Flashing and Joint Compound+ can be troweled or brushed to the required thickness in any application outlined in the guide.
- 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).
- 39. 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. Please refer to Drying/Curing information in the <u>DuPont[™] Tyvek[®] Fluid Applied WB+[™] and DuPont Flashing</u> <u>Products Installation Guidelines</u>.
- 40. 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).
- 41. Tyvek[®] WRBs must not come in direct contact with other manufacturers' cured or uncured fluid-applied and/or deck coating waterproofing products due to potential impact on performance properties. DuPont[™] StraightFlash[™] can be used as transitional membrane.
- 42. DuPont requires Tyvek[®] HomeWrap[®], Tyvek[®] StuccoWrap[®], and Tyvek[®] DrainWrap[™] be covered within 4 months (120 days) of installation. DuPont requires Tyvek[®] CommercialWrap[®] and Tyvek[®] CommercialWrap[®] D and Tyvek[®] Fluid Applied Products be covered within 9 months (270 days) of installation.
- 43. DuPont requires that DuPont[™] FlexWrap[™], FlexWrap[™] EZ, StraightFlash[™], and DuPont[™] VersaFlange[™] be covered within 9 months (270 days) of installation. DuPont requires that DuPont[™] Flashing Tape be covered within four months (120 days) of installation.

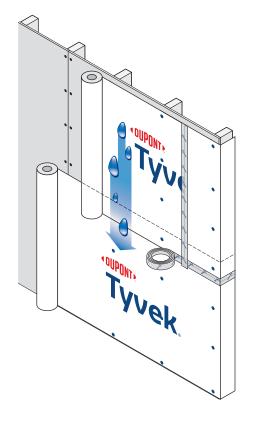
- 44. The maximum in-service temperature for **Tyvek**[®] **WRBs**, **DuPont Self-Adhered Flashing Products**, and **Tyvek**[®] **Fluid Applied Products** is 180°F.
- 45. Tower[®] Residential Sealant (formerly DuPont[™] Residential Sealant) is designed for use with DuPont products and can be used where outlined in this guide. This change represents a branding change only—chemical composition and performance characteristics of the sealant are unchanged.
- 46. For details regarding flashing garage door openings, refer to <u>Installation</u> <u>Instructions for Garage Doors Installed AFTER the DuPont™ Tyvek® Water-Resistive</u> <u>and Air Barrier (WRB) is Installed</u>.
- 47. When applying Tower[®] Residential Sealant, or recommended sealant, during window installation, DuPont recommends minimizing or removing excess sealant that may interfere with adhesion of **DuPont Self-Adhered Flashing Products**.

For additional guidance, please call 1-833-338-7668, visit our website at <u>building.dupont.com</u>, or consult your local DuPont Representative.

DuPont[™] Tyvek[®] WRB Installation Instructions (Windows/Doors Installed **AFTER** the Tyvek[®] WRB) Key Installation Requirements for DuPont[™] Tyvek[®] WRBs

Continuity

It is important to maintain the continuity of the **Tyvek**[®] **WRB** throughout the building envelope. The entire wall surface shall be wrapped, including unconditioned spaces. Special attention should be given to ensure a proper 6" overlap at all terminations, seams, penetrations, and transitions to maintain a continuous downward drainage plane and WRB. Installing the **Tyvek[®] WRB** as an air barrier is the preferred installation method. However, skip-taping terminations and untaped horizontal seams is allowed when the **Tyvek[®] WRB** is being installed as a water-resistive barrier only. Buildings between 70-85 ft. in height require an air barrier installation (see *Applicable Structures and Performance Criteria* section). All vertical seams must be taped for both air barrier and water-resistive barrier installations.



Penetrations

Seal **Tyvek**[®] **WRBs** around all penetrations (electrical, HVAC and plumbing, etc.) with the appropriate **DuPont[™] Flashing Systems product**. Products that have flanges should be integrated into the **Tyvek[®] WRB**. The penetration rough opening can be sealed from the interior side using Tower[®] Residential Sealant, recommended sealant (and backer rod as necessary), or **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant**, **Great Stuff Pro[™] Gaps & Cracks Polyurethane Foam Sealant**, or recommended foam.

Overlap

Ensure proper shingling with a 6" minimum overlap of weather-resistive barrier components from the bottom to the top of the wall to help facilitate proper drainage.

Sealants and Adhesives/Primers

Review the manufacturers' literature or label to confirm that the product(s) used have the chemical and adhesive properties necessary for use with **Tyvek**[®] **WRBs, DuPont Self-Adhered Flashing Products**, and **DuPont**[™] **Tyvek**[®] **Fluid Applied Products**. Refer to <u>Chemical Compatibility</u> <u>of Representative Building Sealants and Adhesives/Primers</u> for more information about chemical compatibility.

Fasteners

Use **DuPont[™] Tyvek[®] Wrap Cap Fasteners**, TRUFAST[®] Walls¹ Grip-Deck[®] screws with Thermal-Grip FastCap[™] washers, or recommended alternates, per the fastening schedule included in this installation guideline. Temporary fasteners should not be relied upon to permanently attach **Tyvek[®] WRBs**, due to the limited holding power of these fastening methods. If temporary fasteners are used, permanent fastening (cladding fasteners) must be applied as soon as practically possible in order to maintain the integrity and performance of the **Tyvek[®] WRB** and to be in compliance with DuPont Installation Guidelines if making a claim under the DuPont Product and Labor component of the DuPont Building Envelope Solutions Products 10-Year Limited Warranty.

Recommended Fasteners

For increased holding power and for higher air and water holdout performance. DuPont recommends fasteners of sufficient length to penetrate securely into the stud. Taller buildings are subjected to increased wind loads. and this should be taken into account when selecting fasteners for the **Tyvek[®] WRB**. Plastic cap screws provide the highest level of holding power. **The recommended** fasteners for buildings between 70-85 ft. in height are 2" cap screws as listed below. Secure Tyvek[®] WRB to the stud or other nail-base material, i.e., wood sheathing. Cap nail and/or cap staple fasteners should be placed no closer than 6" and no farther than 18" on vertical stud lines. Securing along stud lines will assist in maintaining fastening pattern. Penetrating bandboard or other horizontal members may be necessary to maintain fastening pattern. Do not install fasteners within 6" of the sills and jambs and within 9" of the head of the window rough openings. Use one or more of the recommended fasteners below for use with **Tvvek**[®] **WRBs**:

- DuPont[™] Tyvek[®] Wrap Cap Nails
- DuPont[™] Tyvek[®] Wrap Cap Staples or other cap staples for Stinger[®] Cap Stapler²
- 2" **DuPont[™] Tyvek[®] Wrap Cap Screws** (for steel frame construction, may also be used for wood frame)
- TRUFAST[®] Walls Grip-Deck[®] screws with Thermal-Grip FastCap[™] washers installed at 16" vertical spacing along stud lines for 16" o.c. framing (approved for use with **Tyvek[®] WRBs**). Install fasteners with standard hand drill or Grip-Lok[®] Autofeed Fastening System³ with modified nose adaptor.

Wood frame construction:

- 1-5/8" 6" TRUFAST[®] Walls Grip-Deck[®] HiLo Thread Screws with 2" Thermal-Grip FastCap[™] washer
- 1-5/8", 2", 2-1/2", and 3" screws can be installed with standard hand drill or Grip-Lok[®] Autofeed Fastening System with modified nose adapter
- 3-1/2" to 6" screws should be installed with standard hand drill.
- Other manufacturers' equivalent fasteners.

¹TRUFAST[®] Walls formerly Rodenhouse

²Except when installing Tyvek[®] WRB over foam and other non-nail-base sheathings. ³For more information about the Grip-Lok[®] Autofeed Fastening System, refer to manufacturer's instructions and contact your local DuPont[™] Tyvek[®] Specialist.

DuPont[™] Tyvek[®] WRB Installation Instructions (Windows/Doors Installed **AFTER** the Tyvek[®] WRB) Temporary Fastening Alternate Fastening

Selection and use of temporary fastening methods is an option dependent on building schedule, cladding options, and local building practices. Temporary fasteners should not be relied upon to permanently attach **Tyvek**[®] **WRBs** due to the limited holding power of these fastening methods. If temporary fasteners are used, permanent fastening should be applied as soon as practically possible in order to maintain the integrity and performance of the **Tyvek**[®] **WRB**. Permanent fasteners include cladding fasteners such as brick ties, lath fasteners for traditional stucco, exterior foam board fasteners, or siding installed with nails. Cladding shall be installed according to applicable building codes and industry standards.

Temporary fastening methods:

- DuPont fasteners or equivalent alternate fasteners at a reduced schedule of 24" to 48".
- A recommended adhesive applied in vertical strips at 24" to 36" spacing or along every other stud line. Vertical strips may be applied to the outer face of the sheathing or directly to the studs for open stud construction. When using adhesives, care must be taken to avoid excessive surface coverage as this may impact the vapor permeability of the Tyvek[®] WRB in that area. Refer to <u>Chemical</u> <u>Compatibility of Representative Building Sealants and Adhesives/Primers</u> for more information about recommended adhesives.
- If staples without caps are used to temporarily fasten Tyvek[®] WRBs to OSB, plywood, or exterior gypsum sheathing, the fastening schedule must not exceed 24" to 36" vertically, with fasteners at every other stud for 16" o.c. framing. 24" o.c. framing will require horizontal fastening on every stud, with 24" to 36" fastener spacing vertically. Staples should not be used with fiberboard or foam sheathing. If installing as an air barrier, each staple must be covered with DuPont[™] Tyvek[®] Tape. Covering the staples underneath a taped air and water barrier seam is also acceptable if installing the Tyvek[®] WRB as an air barrier.

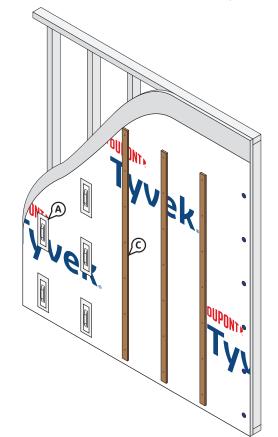
NOTE: For buildings between 70-85 ft. in height, temporary fasteners include 4d nails with 1" plastic cap or 1" plastic cap staple with leg length sufficient to achieve 5/8" penetration into wood stud.

NOTE: These Temporary Fastening Methods are subject to change based on new technology or testing information and may be superseded at any time. It is always important to follow the latest guidelines which may be found on <u>building.dupont.com</u>. For additional guidance, please consult your local DuPont[™] Tyvek[®] Specialist.

- A. Standard brick tie base plates and metal plates with DuPont[™] Flashing Tape,
 DuPont[™] StraightFlash[™] or DuPont recommended alternate patches behind. The selected alternate flashing should satisfy ASTM D1970, AAMA 711, or equivalent.
- B. Metal channels, z-girts, etc. with **DuPont[™] Flashing Tape**, **StraightFlash[™]** or DuPont recommended alternate patches behind.
- C. Wood furring strips mounted vertically. **DuPont[™] Flashing Tape**, **StraightFlash[™]**, or DuPont recommended alternate not required unless the furring strips are shimmed.

Notes:

- Additional fasteners may be needed between brick ties, and other alternate fasteners to maintain recommended fastener spacing.
- **DuPont[™] Flashing Tape**, **StraightFlash[™]**, or DuPont recommended alternate patches are required behind fastening plates (brick tie base plates, metal fastening clips, metal channels, etc.) when building envelope design requirements exceed 15 mph equivalent wind-driven rain water infiltration resistance per ASTM E1677.



DuPont[™] Tyvek[®] WRB Installation Instructions (Windows/Doors Installed **AFTER** the Tyvek[®] WRB) Installation Method for New Construction

Start at bottom corner of structure to ensure proper shingling throughout the installation. Proper shingling is required to shed water and to prevent water from entering the wall system. Printed stud marks are available on some **Tyvek**[®] **WRBs** to aid in aligning with the studs (e.g. studmarks are 8" apart for **DuPont[™] Tyvek**[®] **HomeWrap**[®] and an 8" x 8" grid is printed on **DuPont[™] Tyvek**[®] **CommercialWrap**[®]).

STEP 1

Align roll at bottom corner of structure. Roll should be plumb.

Bottom edge of roll must:

- extend over sill plate interface onto foundation by at least 1" (2" or greater is recommended)
- extend to bottom of sill plate for slab on grade foundations, or,
- be properly integrated with water drainage components such as kick out flashing or weep screed (for stucco exteriors).

When bottom edge of roll is less than 2" over the sill plate interface, it is recommended to seal or skip-seal the **Tyvek**[®] **WRB** at the bottom of the wall. See bottom of wall termination options on the next page.

STEP 2

Unwrap roll starting at corner. Unroll directly over windows and doors. Overlap all vertical seams by 6''-12''.

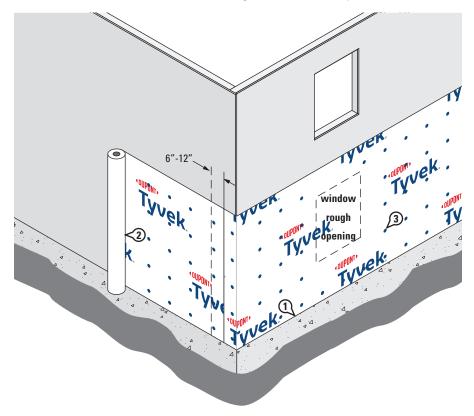
STEP 3

Secure **Tyvek® WRB** to the stud or other nail-base material, i.e., wood sheathing in accordance with the Recommended Fasteners section of <u>Key Installation Requirements</u>. for <u>DuPont™ Tyvek® WRBs</u>. Fasteners should be placed no closer than 6" and no farther than 18" on vertical stud lines. Securing along stud lines will assist in maintaining fastening pattern. When installing with fasteners that are longer than the thickness of the sheathing, the fasteners must be installed into the studs. Penetrating pattern. **Do** not install fasteners within 6" of the sills and jambs and within 9" of the head of the window rough openings.

Use one or more of the recommended fasteners below for use with Tyvek® WRBs:

- DuPont[™] Tyvek[®] Wrap Cap Nails
- DuPont[™] Tyvek[®] Wrap Cap Screws
- DuPont[™] Tyvek[®] Wrap Cap Staples or other cap staples for Stinger[®] Cap Stapler*
- TRUFAST[®] Walls Grip-Deck[®] screws with Thermal-Grip FastCap[™] washers (TRUFAST[®] Walls formerly Rodenhouse)
- Other manufacturers' equivalent cap fasteners

The recommended fasteners for buildings between 70-85 ft. in height are 2" cap screws as listed above. Please see <u>Key Installation Requirements for DuPont™ Tyvek®</u> <u>WRBs</u> section for equivalent fastener requirements and <u>Temporary Fastening</u> section for more information on alternative fastening schedules and requirements.



*Except when installing Tyvek® WRB over foam and other non-nail-base sheathings.

DuPont[™] Tyvek[®] WRB Installation Instructions (Windows/Doors Installed **AFTER** the Tyvek[®] WRB) Installation Method for New Construction

STEP 4

Upper layer of **Tyvek**[®] **WRB** should overlap bottom layer by a minimum of 6". **NOTE**: The **Tyvek**[®] **WRB** must be integrated with window flashing using proper shingling. If non-self-adhering sill flashing is used, install the **Tyvek**[®] **WRB** under the bottom of the sill flashing to maintain proper shingling. In either case, to tie the **Tyvek**[®] **WRB** into the flashing, follow the steps included in the <u>Installation Methods for DuPont Self-Adhered</u> <u>Flashing Products Installed AFTER the DuPont™ Tyvek</u>[®] section in this guide.

STEP 5

Tape all vertical seams with **DuPont[™] Tyvek® Tape**. If the **Tyvek® WRB** is not being installed as an air barrier, **Tyvek® Tape** is not required on horizontal seams but is considered a recommended best practice. Use 3" **Tyvek® Tape** for the vertical seams of **DuPont[™] Tyvek® CommercialWrap® D**, **Tyvek® StuccoWrap®** and **Tyvek® DrainWrap[™]**. Use **DuPont[™] Tyvek® Metalized Tape** when taping **DuPont[™] Tyvek® ThermaWrap® LE**.

STEP 6 (FOR AIR BARRIER INSTALLATIONS)

When installing as an air barrier, the horizontal seams must be taped. The use of 3" **Tyvek® Tape** is required for both vertical and horizontal seams of **Tyvek® StuccoWrap®**, **Tyvek® DrainWrap™**, and **Tyvek® CommercialWrap® D** for air barrier installations.

STEP 7 (FOR AIR BARRIER INSTALLATIONS)

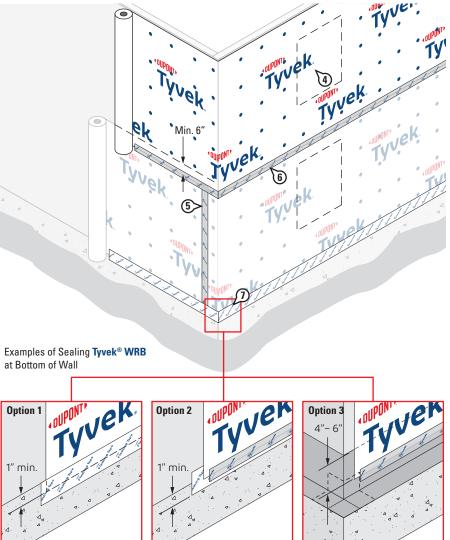
Taping or sealing all terminations of **Tyvek[®] WRBs** (including, but not limited to, topof-wall and bottom-of-wall interfaces) using **Tyvek[®] Tape**, **DuPont[™] Flashing Tape**, or **DuPont[™] StraightFlash[™]** is required when installing as an air barrier.*

NOTE: DuPont Self-Adhered Flashing Products are the recommended method for terminating Tyvek[®] WRB at top and bottom of wall, and at other horizontal and vertical locations. Tyvek[®] Tape can be used as indicated in this Installation Guideline to seal the Tyvek[®] WRB to most plastic top sheets of self-adhered products and to thin metal flashings (e.g. drip caps or through wall kick out flashings). Tyvek[®] Tape should NOT be used to seal Tyvek[®] WRBs to wood framing/sheathing, exterior gypsum sheathing, or masonry.

NOTE: See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements.

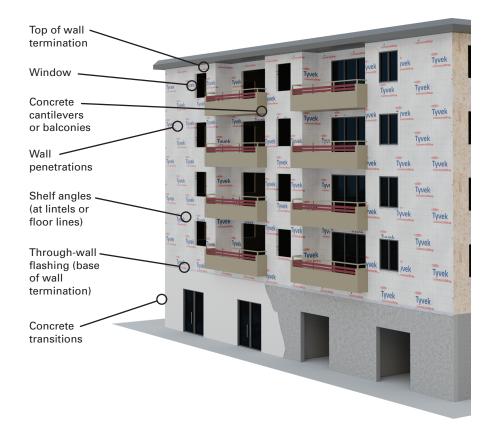
For additional Installation Guidelines and more information about DuPont Performance Building Solutions, please visit <u>building.dupont.com</u> or call 1-833-338-7668.

*Use **DuPont Self-Adhered Flashing Products** with a recommended adhesive/primer as applicable to seal the **Tyvek**[®] **WRB** directly to gypsum sheathing, concrete, wood, or other rough surfaces.



Overlap Tyvek[®] WRB onto foundation by a minimum of 1" and seal with DuPont Self-Adhered Flashing Product.* Seal interface of sheathing and foundation using **DuPont Self-Adhered Flashing Product**, overlap **Tyvek® WRB** onto **DuPont Self-Adhered Flashing Product** by a minimum of 1" and terminate using **Tyvek® Tape.*** If bottom of wall detail includes a through wall flashing, lap the **Tyvek**[®] **WRB** over the through wall flashing and seal the **Tyvek[®] WRB** to the through wall flashing using **Tyvek[®] Tape** or **DuPont Self-Adhered Flashing Product**. See detail in the <u>Continuity</u> section for more information.

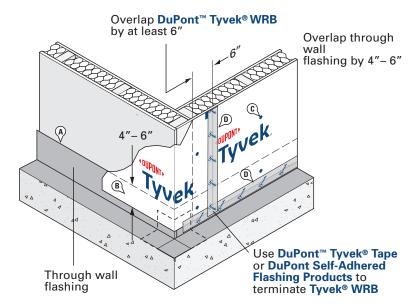
Terminations



It is important to maintain the continuity of the **Tyvek[®] WRB** from top to bottom with proper shingling. The entire wall surface shall be wrapped, including unconditioned spaces.

Special attention should be given to all terminations and transitions to ensure a proper drainage plane and a continuous air and water barrier is maintained.

Base of Wall



- A. Install through wall flashing per manufacturer's instructions. The through wall flashing may be terminated by using a reglet, counterflashing, termination bar or by embedding in a mortar joint.
- B. Overlap through wall flashing with **Tyvek[®] WRB** by 4"-6".
- C. Mechanically fasten bottom of the **Tyvek**[®] **WRB** through top of through wall flashing.
- D. Seal vertical and horizontal seams using **Tyvek[®] Tape** or a **DuPont Self-Adhered Flashing Product**.

Installation of Metal Flashing at Façade Transitions

The following options for terminating metal flashing can be used for various exterior facade transitions. The cladding materials shown to the right are for general reference.

Option 1: Metal Flashing Terminated onto Tyvek[®] WRB

STEP 1

Install the "Z" or "L" metal flashing over the lower façade and onto the **Tyvek**[®] **WRB** with mechanical fasteners.

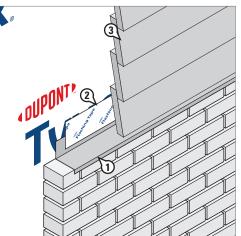
NOTE: Do not install Tyvek[®] WRB fasteners where the metal flashing or DuPont Self-Adhered Flashing Product will be installed.

STEP 2

Terminate the vertical leg of the metal flashing to **Tyvek**[®] **WRB** with **DuPont Self-Adhered Flashing Product** so there is a minimum of 2" adhesion onto the **Tyvek**[®] **WRB**.

STEP 3

Install the upper façade according to the manufacturer's instructions.



Option 2: Metal Flashing Terminated onto Sheathing

STEP 1

Install the first course of **Tyvek[®] WRB** so it extends a minimum of 2" **BEYOND** where the top edge of the lower façade will be located.

NOTE: Do not install **Tyvek® WRB** fasteners where the metal flashing or **DuPont Self-Adhered Flashing Product** will be installed.

STEP 2

Install the "Z" or "L" metal flashing along the top edge of the lower façade with the vertical leg overlapping the **Tyvek**[®] **WRB**.

STEP 3

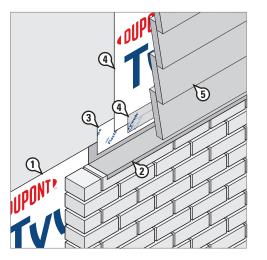
Terminate the vertical leg of the metal flashing directly to the sheathing with **DuPont Self-Adhered Flashing Product** with minimum of 2" adhesion onto the sheathing. **NOTE**: A recommended adhesive/primer is required for gypsum sheathing.

STEP 4

Install the next course of **Tyvek® WRB** to overlap the **DuPont Self-Adhered Flashing Product**s by a minimum of 2" and seal with **DuPont™ Tyvek® Tape** or Tower® Residential Sealant, or recommend sealant.

STEP 5

Install upper façade according to the manufacturer's instructions.



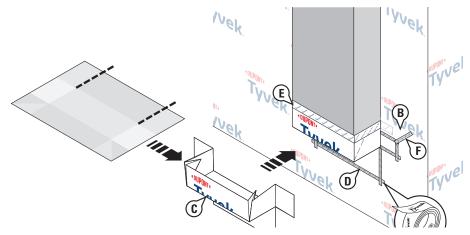
Wall Protrusions with Horizontal Plane

For wall protrusions such as conditioned cantilevered spaces, build-outs, eye brows, etc. to ensure **Tyvek**[®] **WRB** continuity along the bottom horizontal plane. This detail can be used in conjunction with the general *Horizontal Plane Transition* detail to the right.

NOTE: If top of wall protrusion includes a horizontal plane, the condition should be treated as a roofing interface. **Tyvek® WRBs** and **DuPont Self-Adhered Flashing Products** should not be used on roofs.

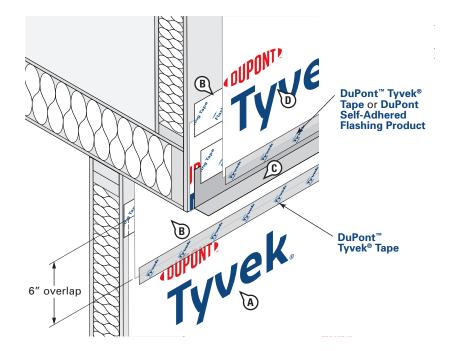
- A. Below horizontal plane, terminate the Tyvek[®] WRB to the sheathing using a DuPont Self-Adhered Flashing Product. Terminating the Tyvek[®] WRB is optional if the horizontal plane is 12" or less.
- B. At outside edges of horizontal plane, cut a flap minimum 6" above bottom edge of cantilever. Fold up and temporarily secure in place to expose sheathing.
- C. Wrap the **Tyvek**[®] **WRB** along the horizontal plane and fold the **Tyvek**[®] **WRB** up the sides of the wall protrusion a minimum of 6". The **Tyvek**[®] **WRB** should also overlap the layer below by minimum 6".
- D. Tape all **Tyvek[®] WRB** seams with **DuPont[™] Tyvek[®] Tape**.
- E. Seal the top edge of the **Tyvek**[®] **WRB** to the sheathing using **DuPont Self-Adhered Flashing Product**. **NOTE**: A recommended adhesive/primer is required for gypsum sheathing.
- F. Fold down flap at outside edges of horizontal plane and seal with Tyvek[®] Tape.
- G. Install upper course of Tyvek[®] WRB, overlapping bottom layer minimum 6".

NOTE: Make the inside corner as tight as possible using a 1" x 4" or similar.



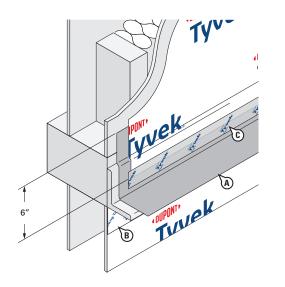
Horizontal Plane Transition

Detail isolates horizontal plane from vertical walls for water management



- A. Install Tyvek[®] WRB on wall below horizontal plane and terminate with a DuPont Self-Adhered Flashing Product. Terminating the Tyvek[®] WRB is optional if the horizontal plane is 12" or less. NOTE: A recommended adhesive/primer is required for gypsum sheathing.
- B. Install Tyvek[®] WRB on horizontal plane, overlapping the Tyvek[®] WRB below by 6", and extend a minimum of 6" onto the vertical wall above. Install Tyvek[®] Tape to seal horizontal seam below and terminate onto upper wall with a DuPont Self-Adhered Flashing Product. NOTE: A recommended adhesive/primer is required for gypsum sheathing.
- C. **OPTIONAL**: Install a kick-out flashing at outside corner as recommended best practice per plans and specifications. Terminate vertical leg of kick-out flashing with a **DuPont Self-Adhered Flashing Product**.
- D. Install Tyvek[®] WRB on wall above horizontal plane and terminate onto kick-out flashing with a DuPont Self-Adhered Flashing Product or Tyvek[®] Tape. NOTE: If kickout flashing is not used, ensure a 6" overlap and seal the horizontal Tyvek[®] WRB seam with Tyvek[®] Tape.

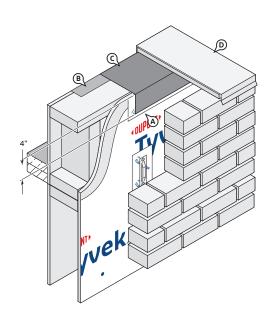
Shelf Angles



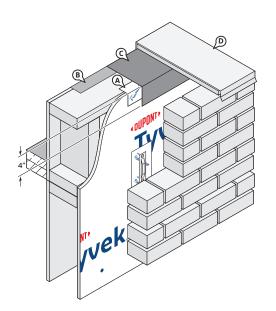
- A. Self-adhered through wall flashing should be applied to the top of the shelf angle and the **Tyvek**[®] **WRB** should be properly shingled over by at least 6".
- B. Seal the **Tyvek[®] WRB** to the bottom of the shelf angle using **DuPont[™] Flashing Tape**.
- C. Seal bottom of the **Tyvek[®] WRB** to through wall flashing using **DuPont[™] Tyvek[®] Tape** or a **DuPont Self-Adhered Flashing Product**.

Parapet Wall with Brick and Top of Wall Termination

Method 1



- A. Install DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] to terminate the Tyvek[®] WRB. NOTE: A recommended adhesive/primer is required for gypsum sheathing.
- B. Install roofing membrane (by others).
- C. Install through wall flashing over parapet wall, overlapping the Tyvek[®] WRB and the roofing membrane by a minimum of 4" in the proper shingling manner.
 NOTE: The roofing membrane and through wall flashing (by others) may be one/ the same product.
- D. Install coping cap.



- A. Cut the Tyvek[®] WRB flush with the top of wall and terminate with DuPont[™] Flashing Tape or StraightFlash[™] a minimum of 2" onto the Tyvek[®] WRB and a minimum of 2" (maximum of 4") adhesion onto the top of the parapet. NOTE: A recommended adhesive/primer is required for gypsum sheathing.
- B. Install roofing membrane (by others).
- C. Install through wall flashing over parapet wall, overlapping the Tyvek[®] WRB and the roofing membrane by a minimum of 4" in the proper shingling manner.
 NOTE: The roofing membrane and through wall flashing (by others) may be one/ the same product.
- D. Install coping cap.

Method 2

NOTE: Proper water management is required at top of wall through proper shingling, overlaps, etc. Terminating the **Tyvek**[®] **WRB** with a **DuPont Self-Adhered Flashing Product** is recommended for a more robust termination and is **required for air barrier installations**. If top of wall condition includes a chemically-compatible self-adhered membrane, the self-adhered membrane can seal directly over the **Tyvek**[®] **WRB** with a 2" minimum overlap.

NOTE: For non-air barrier installations, if a roofing membrane such as TPO or EPDM overlaps the **Tyvek**[®] **WRB** on the vertical wall, a minimum 4"– 6" overlap is required if a **DuPont Self-Adhered Flashing Product** is not used.*

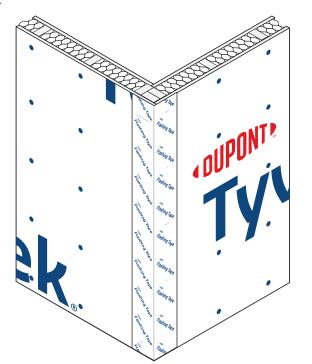
*DuPont assumes no liability for alternate self-adhered membranes or other roofing products.

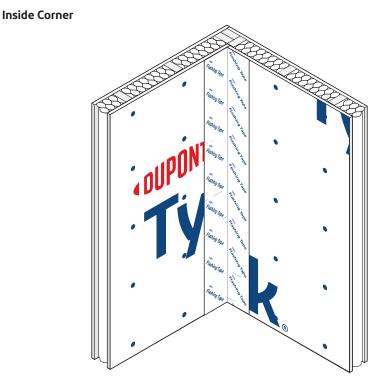
Table of Contents

Inside and Outside Corners – OPTIONAL Use of 12" DuPont[™] Flashing Tape

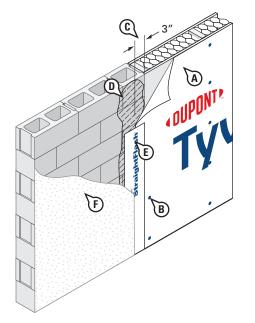
12" wide **DuPont[™] Flashing Tape** can be used for additional protection during the construction process at inside and outside corners. The diagrams below show 12" **DuPont[™] Flashing Tape** installed over the **Tyvek[®] WRB**; however, the flashing could alternatively be installed directly to the sheathing prior to the **Tyvek[®] WRB** installation. Ensure the **Tyvek[®] WRB** and 12" **DuPont[™] Flashing Tape** are installed tightly into or around the inside or outside corners, respectively. If using multiple pieces of **DuPont[™] Flashing Tape**, ensure a minimum of 2" overlap of each piece. For more information regarding the installation of 12" **DuPont[™] Flashing Tape** at building corners, refer to the Installation Bulletin: *DuPont[™] Flashing Tape for Inside and Outside Wall Corners*.

Outside Corner





Hybrid Wall – Transition to DuPont[™] Tyvek[®] Fluid Applied Products



- A. Install **Tyvek[®] WRB** prior to application of **DuPont[™] Tyvek[®] Fluid Applied WB+[™]**.
- B. Fasten the **Tyvek[®] WRB** to the stud adjoining the transition substrate.
- C. Cut the Tyvek[®] WRB so that approximately 3" will overlap the adjoining substrate.
- D. Fold back the 3" flap of **Tyvek**[®] **WRB** and prime adjoining substrate with a recommended adhesive/primer.
- E. Fold the **Tyvek**[®] **WRB** back down over the interface and seal it to the primed substrate using **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 **Tyvek[®] Fluid Applied WB+[™]** onto wall surface, overlapping the **StraightFlash[™]** by a minimum of 2". Refer to the <u>DuPont[™] Tyvek[®] Fluid Applied WB+[™] and DuPont</u> <u>Flashing Products Installation Guidelines</u> for additional information.

Uncured Tyvek[®] Fluid Applied Products must not come in contact with Tyvek[®] WRBs due to potential impact on performance properties. Therefore, use of a spray guard or other physical barrier to avoid overspray onto the Tyvek[®] WRB is recommended.

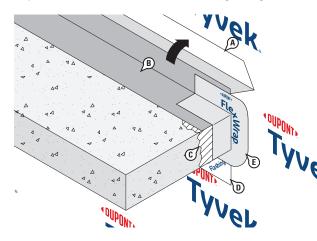
G. Upon completion, inspect surface to ensure that **Tyvek[®] Fluid Applied WB+**[™] is continuous and free of any voids or pinholes.

NOTE: When spraying, the outer edge of **DuPont Self-Adhered Flashing Product** at the interface with the **Tyvek[®] Fluid Applied WB+[™]** can 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.

Concrete Cantilevers or Balconies

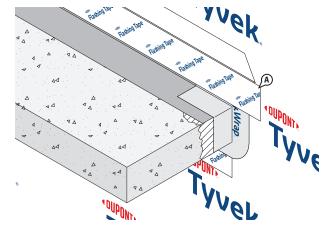
Seal to concrete cantilevers or balconies using DuPont Self-Adhered Flashing Products and a recommended adhesive/primer.

NOTE: Cantilever and balcony conditions vary. The detail below captures one typical cantilever condition with a termination of the Tyvek[®] WRB along the bottom and side surfaces of the cantilever prior to sealing the Tyvek[®] WRB flap. Ensure proper shingling of DuPont Self-Adhered Flashing Products and terminations of the Tyvek[®] WRB. Refer to the DuPont[™] Tyvek[®] WRB Integration with Balcony and Deck Waterproofing Membranes Installation Guidelines for wood-frame balcony conditions. Contact your local DuPont Representative for more information regarding additional cantilever or balcony conditions.



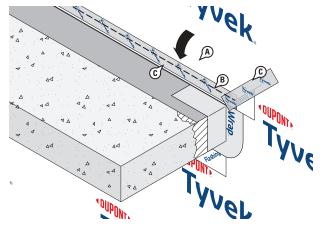
STEP 1

- A. Cut and flip up **Tyvek[®] WRB** flap.
- B. Install waterproofing sheet membrane or metal flashing per plans and specifications and/or manufacturer's requirements. Metal flashing recommended to be embedded in sealant.
- C. Apply a recommended adhesive/primer to concrete surfaces where **DuPont Self-Adhered Flashing Products** will be installed. **NOTE**: On wall surface, an adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.
- D. Seal the Tyvek[®] WRB to bottom of cantilever or balcony with DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™].
- E. Wrap DuPont[™] FlexWrap[™] around cantilever or balcony edge. NOTE: Ensure FlexWrap[™] will not be exposed after completion of cladding.





A. Apply 4" DuPont[™] Flashing Tape or StraightFlash[™] over FlexWrap[™] and top edge of the metal flashing, when used. NOTE: A recommended adhesive/primer is required for gypsum sheathing.



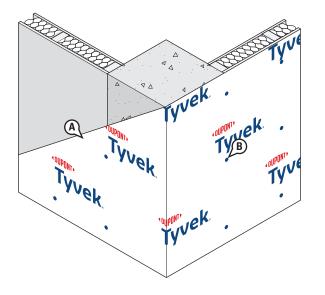
STEP 3

- A. Flip down Tyvek[®] WRB flap.
- B. Trim ~1" strip along horizontal edge of Tyvek[®] WRB flap
- C. Tape seams using DuPont[™] Tyvek[®] Tape or a DuPont Self-Adhered Flashing Product.

Concrete Column

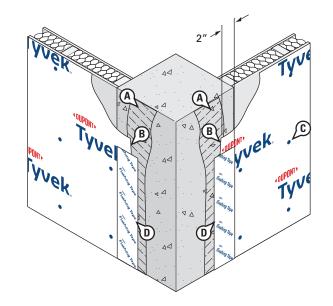
Method 1

Method 2



- A. Wrap **Tyvek[®] WRB** around concrete column.
- B. Mechanically fasten **Tyvek[®] WRB** at recommended spacing. (See <u>Key Installation</u> <u>Requirements for DuPont[™] Tyvek[®] WRBs</u> section of this document)

NOTE: Mechanically fasten **Tyvek**[®] **WRB** to concrete column if necessary to maintain recommended fastener spacing.



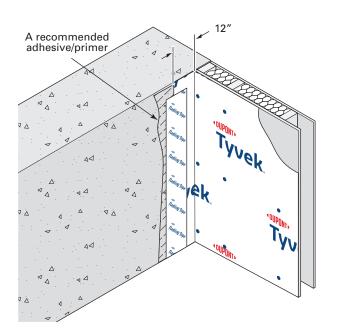
- A. Prime concrete column with a recommended adhesive/primer.
- B. Cut **Tyvek[®] WRB** at concrete column, leaving approximately 2" overlapping column.
- C. Mechanically fasten Tyvek[®] WRB into studs.
- D. Seal Tyvek[®] WRB to concrete using DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™]. Ensure air barrier continuity at the concrete interfaces. If condition includes a transition from a Tyvek[®] WRB to a fluid applied membrane, StraightFlash[™] is required to terminate the Tyvek[®] WRB.

NOTE: To increase holding power at the transition, additional fasteners may be necessary to secure **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Use appropriate fastener for each substrate.

Inside Corner Termination at Concrete Transition

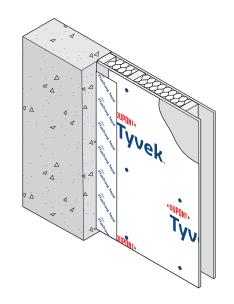
NOTE: Ensure air barrier continuity at the concrete interfaces. If condition includes a transition from a **Tyvek[®] WRB** to a fluid applied membrane, **DuPont[™] StraightFlash[™]** is required to terminate the **Tyvek[®] WRB**.

Method 1



- A. Cut **Tyvek**[®] **WRB** so there is approximately 12" overlapping concrete.
- B. Mechanically fasten **Tyvek[®] WRB** to studs.
- C. Prime concrete with a recommended adhesive/primer.
- D. Seal Tyvek[®] WRB to concrete using DuPont[™] Flashing Tape or StraightFlash[™].

Method 2



- A. Cut **Tyvek[®] WRB** to expose approximately 2" of the wall.
- B. Mechanically fasten **Tyvek**[®] **WRB** to studs.
- C. Seal **Tyvek[®] WRB** to the wall along the inside corner using **DuPont[™] Flashing Tape** or **StraightFlash[™]**. **NOTE**: A recommended adhesive/primer is required for gypsum sheathing.

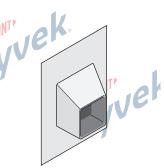
NOTE: Additional CAD details are available in the Technical Information section of building.dupont.com.

Seal around plumbing pipes, HVAC components, electrical outlets, exterior lights, flashing panels, and other objects that penetrate the **Tyvek**[®] **WRB**. Always use positive shingling by installing **Tyvek**[®] **WRBs** and **DuPont Self-Adhered Flashing Products** from bottom to top, with upper layer installed over lower layer. **NOTE**: A backing support for flashing made of solid OSB or wood sheathing must be installed around the penetration before the **Tyvek**[®] **WRB** and flashing for open stud applications.

Flashing Integral Flanged Products Installed AFTER DuPont[™] Tyvek[®] WRB

Method 1





STEP 1

Install **Tyvek[®] WRB** and cut as necessary to accommodate integral flanged product.

STEP 2

Install integral flanged product per manufacturer's instructions.

Method 2



STEP 1

Install **Tyvek[®] WRB** and make horizontal cut a minimum of 1" wider than flange.

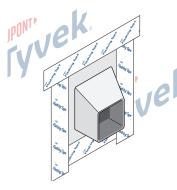
PONT, vek. fy, 2" vek

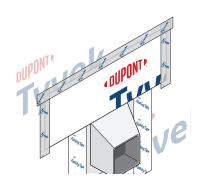
STEP 2

Slide top flange into slit with minimum 2" overlap of **Tyvek® WRB**, and install per manufacturer's instructions.

OPTIONAL LAST STEP FOR ALL INSTALLATIONS: Install a piece of Tyvek® WRB and seal with DuPont™ Tyvek® Tape to overlap the top edge of the DuPont Self-Adhered Flashing Product (shown in Method 1 below).

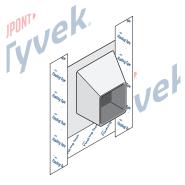
OPTIONAL INTERIOR SEAL: The penetration rough opening can be sealed from the interior side using Tower[®] Residential Sealant, recommended sealant (and backer rod as necessary), or **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant**, **Great Stuff Pro[™] Gaps & Cracks Polyurethane Foam Sealant**, or recommended foam.





STEP 3

Install **DuPont Self-Adhered Flashing Product** (recommended best practice) or **Tyvek® Tape** onto bottom, sides, and top flanges, extending onto **Tyvek® WRB** by a minimum of 2". **NOTE**: Bottom piece is optional, but is recommended as a best practice and is required for air barrier installations.

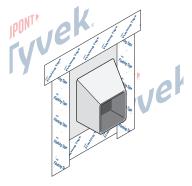


STEP 3

Adhere **DuPont Self-Adhered Flashing Product** (recommended best practice) or **Tyvek® Tape** bottom and side flanges, extending onto **Tyvek® WRB** by 2". **NOTE**: Bottom piece is optional, but is recommended as a best practice and is required for air barrier installations.

STEP 4 (OPTIONAL)

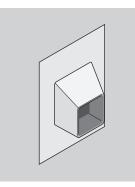
Install a piece of **Tyvek[®] WRB** to overlap the top edge of the **DuPont Self-Adhered Flashing Product**. Seal sides and top with **Tyvek[®] Tape**.

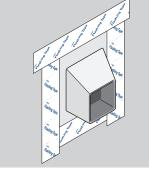


STEP 4

Install **DuPont Self-Adhered Flashing Product** (recommended best practice) or **Tyvek® Tape** to top flange, extending **BEYOND** the **DuPont Self-Adhered Flashing Product**, or **Tyvek® Tape**, on side flanges.

Flashing Integral Flanged Products – Installed **BEFORE** the Tyvek[™] WRB Method 1



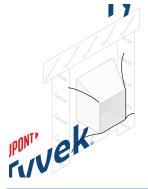


STEP 1

Install integral flanged product onto sheathing per manufacturer's instructions.

STEP 2 Install DuPont Self-Adhered Flashing Product onto flanges, extending onto

Product onto flanges, extending onto sheathing by a minimum of 2". NOTE: A recommended adhesive/ primer is required for gypsum sheathing.



STEP 3 Install **Tyvek[®] WRB**.



Make cut in Tyvek[®] WRB, ensuring a

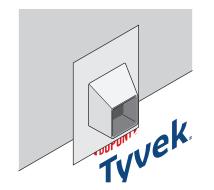
minimum of 1" gap for adhesion of

DuPont[™] Tyvek[®] Tape.

PONT, CARL

STEP 5 Seal edges of **Tyvek® WRB** with **Tyvek® Tape**.

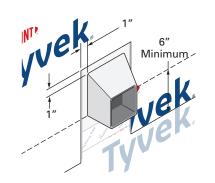
Method 2



STEP 1 Install **Tyvek[®] WRB** under bottom flange.

STEP 2

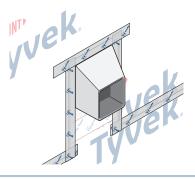
Adhere **DuPont Self-Adhered Flashing Product** onto sides and top flange. **NOTE**: Also install at bottom flange as a recommended best practice and for air barrier installations. **NOTE**: A recommended adhesive/primer is required for gypsum sheathing.



STEP 4

STEP 3

Install next course of **Tyvek® WRB** with a minimum of 6" overlap. Cut back 1" to expose flanges.



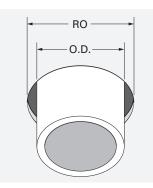
STEP 4 Seal seams using **Tyvek[®] Tape**.

Flashing Non-Flanged Products – Installed AFTER the Tyvek[™] WRB

Method 1: Flashing Non-Flanged Products Using DuPont[™] FlexWrap[™] EZ

NOTE: Ensure FlexWrap[™] EZ will not be exposed to UV after the installation of the facade.

For non-flanged products with O.D. GREATER than 2"



Use **FlexWrap[™] EZ** only when penetration

rough opening (RO) is not more than 1/2" larger than the outside diameter/dimension

NOTE: For more information regarding the installation of **FlexWrap[™] EZ**, refer

to the Installation Information Bulletin for

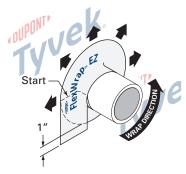
(O.D.) of non-flanged product.

FlexWrap™ EZ.

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STEP 1

Install **Tyvek[®] WRB** over non-flanged product and cut around penetration.



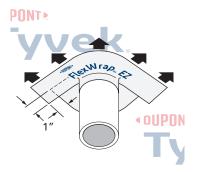
STEP 2

Cut a piece of **FlexWrap[™] EZ LONGER** than the circumference of non-flanged product to ensure a minimum 1" overlap onto the **Tyvek**[®] **WRB**. Starting at the horizontal position on either side, adhere around penetration and onto **Tyvek[®] WRB**.

For non-flanged products with O.D. LESS than 2"







STEP 1

Install **Tyvek[®] WRB** over non-flanged product and cut around penetration.

STEP 2

Cut a piece of **FlexWrap**[™] **EZ** the length of ½ the circumference of the non-flanged product. Adhere onto bottom section and fan out onto **Tyvek[®] WRB**.

STEP 3

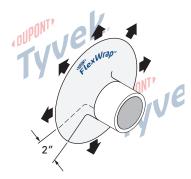
Cut a second piece of **FlexWrap[™] EZ** the length of the pipe circumference. Adhere onto top section and fan out onto face of wall with a minimum of 1" overlap of the edges of **FlexWrap[™] EZ** below.

Method 2: Flashing Non-Flanged Products Using DuPont[™] FlexWrap[™]

NOTE: Ensure **FlexWrap**[™] will not be exposed to UV after the installation of the facade.

FlexWrap[™] installed onto Tyvek[®] WRB around penetration





STEP 1

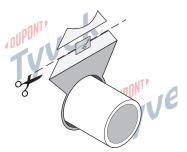
Install **Tyvek[®] WRB** over non-flanged product and cut around penetration.

STEP 2

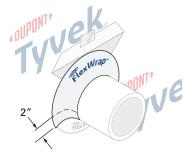


FlexWrap[™] adhered to sheathing above penetration*











STEP 1

Install **Tyvek[®] WRB** over non-flanged product and cut around penetration.

STEP 2

Cut diagonal flap in **Tyvek® WRB**, trim back ~1" to make straight edge, and temporarily secure. STEP 3

Install **FlexWrap**[™] around bottom of penetration.

STEP 4

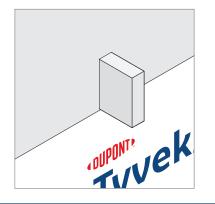
Install **FlexWrap[™]** around top of penetration, overlapping bottom layer of **FlexWrap[™]** by 2″ on either side.

STEP 5

Flip down and secure head flap using **DuPont Self-Adhered Flashing Product**.

*Allows positive shingling of Tyvek® WRB

NOTE: A backing support for flashing made of solid OSB or wood sheathing must be installed around the beam before the **Tyvek[®] WRB** and flashing for open stud applications. OPTIONAL: **DuPont[™] FlexWrap[™] EZ** may be used in place of **DuPont[™] FlexWrap[™]** (STEP 3) when the beam penetration rough opening (RO) is not more than 1/2" larger than the outside diameter/dimension (O.D.) of the beam. Refer to the detail <u>Method 1 – Flashing Non-Flanged Products Using DuPont[™] FlexWrap[™] EZ</u> in this guide.



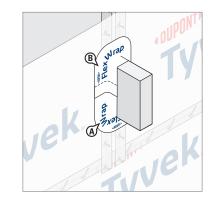
STEP 1

Install the first course of **Tyvek[®] WRB** so the top edge is flush with the bottom of the beam.



STEP 2

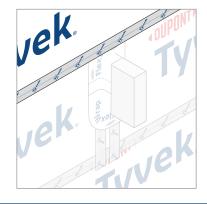
Cut pieces of **Tyvek**[®] **WRB** to fit between beams. The pieces should extend a minimum of 7" above the beams and overlap the course below by a minimum of 6". Seal the vertical seams with **DuPont[™] Tyvek[®] Tape**. **NOTE**: For air barrier installations, seal all vertical and horizontal seams.



STEP 3

Seal around the beam using two pieces of 6" wide **FlexWrap™** (or **FlexWrap™ EZ** as captured in the note above).

- A. Cut the first piece of FlexWrap[™] long enough wrap around the bottom half of the beam. Break the perforation in the release paper by folding the FlexWrap[™] top sheet to the inside of the fold. With the FlexWrap[™] still folded, remove the narrow piece of release paper and adhere the exposed butyl to the bottom and up each side of the beam. Remove the remaining release paper and fan the FlexWrap[™] out onto the Tyvek[®] WRB on the face of the wall.
- B. Cut the second piece of FlexWrap[™] long enough to wrap around the top half of the beam, overlapping the first piece of FlexWrap[™] on each side by 2". Install along the top of the beam and down each side, overlapping the lower piece of FlexWrap[™] by 2" using the method above.

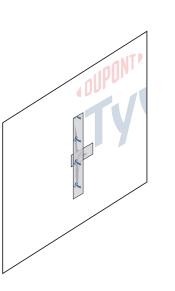


STEP 4

Install the top course of the **Tyvek**[®] **WRB**, overlapping the **Tyvek**[®] **WRB** below with 1" gap above the beam. Tape all vertical seams with **Tyvek**[®] **Tape**.

NOTE: For air barrier installations, seal all vertical and horizontal seams.





STEP 1

During the course of installing the **Tyvek**[®] **WRB**, minor tears may occur.

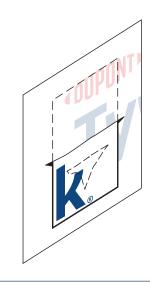
STEP 2

All tears should be sealed with **DuPont[™] Tyvek[®] Tape** (2" or 3") or **DuPont Self-Adhered Flashing Products**.

Holes

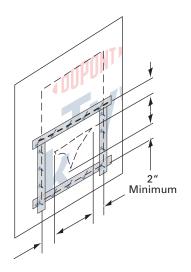
STEP 1

Larger holes (greater than 1") may require cutting a piece of **Tyvek® WRB** to cover the hole, maintaining proper shingling. Cut a slit 2" above the hole and extending a minimum of 2" on each side of the hole.



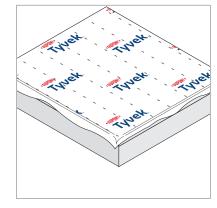
STEP 2

Measure and cut a piece of **Tyvek[®] WRB** to fit into the slit and cover the hole. Tuck the cut piece of **Tyvek[®] WRB** into the slit.



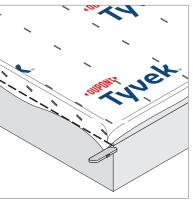
STEP 3

Seal seams with **Tyvek® Tape** along the perimeter by starting at the bottom of the patch, shingling upper tape over bottom tape.



STEP 1

Unroll and secure **Tyvek® WRB** over the wall panel. Leave enough excess at sides and bottom to ensure a minimum 6" overlap of the **Tyvek® WRB** onto adjacent wall panels and minimum 1" overlap of the foundation below. These flaps allow for a **Tyvek® WRB**-to-**Tyvek® WRB** seal with adjacent sides. Position/cut the **Tyvek® WRB** so that it is flush with the top of the wall. When taping, make sure the stud marks printed on the **Tyvek® WRB** line up with the first stud and that the roll is plumb.

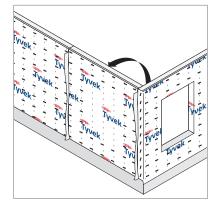


STEP 2

When starting a wall section, fold the beginning side flap over the vertical side of the stud and secure. Trim off excess. Only one side flap is needed (either left or right side of wall panel) to overlap adjacent panels; however, having the flap on the same side of each panel will ensure proper overlap from panel to panel and at building corners. Fold the flap that will overlap the adjacent panel onto the exterior face of the panel and temporarily secure with small pieces of **DuPont[™] Tyvek[®] Tape** as needed to assist with raising the panel upright. Ensure that the bottom flap overhangs enough so that, when the wall is tilted upright, it overlaps the sill plate.

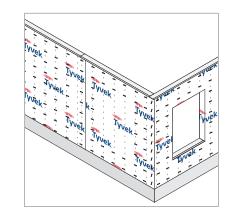
STEP 5

All vertical seams shall be taped with **Tyvek® Tape**. When installing as an air barrier, also tape all horizontal seams. Taping all vertical and horizontal seams, and taping or sealing all terminations (including, but not limited to, roof-wall interfaces and sill plates) is required when installing **Tyvek® WRBs** as air barriers. Use 3" **Tyvek® Tape** when taping horizontal laps of **DuPont™ Tyvek® StuccoWrap®** and **Tyvek® DrainWrap™**. Use **DuPont™ Tyvek® Metalized Tape** when taping **DuPont™ Tyvek® ThermaWrap® LE**.



STEP 3

As each wall section is raised, ensure that the bottom flaps overlap the sill plate and that the side flaps are on the exterior of the house.



STEP 4

Fasten the side flaps and terminate the bottom flap in accordance with <u>Option 1-3</u>, depending on bottom of wall condition, in the <u>DuPont[™] Tyvek[®] WRB Installation</u><u>Instructions</u> section.

STEP 6

After **Tyvek[®] WRB** is installed refer to the applicable window and door flashing conditions in this guide.

Installation Methods for DuPont Self-Adhered Flashing Products Installed **AFTER** the DuPont[™] Tyvek[®] WRB Key Installation Requirements for Drainable Window/Door Installation

When flashing windows or doors, the following principles must be followed:

- An integral flanged window/door is defined as a window/door unit with a nailing fin or flange that is continuous around the perimeter of the window and that is a direct extrusion of the window frame.
- A non-integral flanged window/door is defined as a window/door unit with a nailing fin or flange that is **not continuous** around the perimeter of the window/door or the fin/flange is **not a direct extrusion of the frame** (e.g. field-applied flanges).
- When installed properly, DuPont[™] StraightFlash[™], DuPont[™] VersaFlange[™], DuPont[™] FlexWrap[™], and DuPont[™] Flashing Tape provide nail sealability at window/door openings to help protect critical window-wall interfaces. Metal sill pan flashing may be used, but must not replace flexible sill flashing that provides nail sealability.
- Ensure that sill flashing does not slope to the interior. An exterior slope is recommended, but not required.
- Direct water onto an acceptable air and water barrier drainage plane with an unobstructed path to the exterior of the wall. Provide a drainage path for any water intrusion through the window/door attachment system that collects at the sill.
- Properly integrate flashing with acceptable **Tyvek**[®] **WRB**. **DuPont Self-Adhered Flashing Products** must be applied with a minimum 2" lap onto the WRB.
- When applying recommended sealant during window installation, DuPont recommends minimizing or removing excess sealant that may interfere with adhesion of **DuPont Self-Adhered Flashing Products**.
- DuPont requires that FlexWrap[™], FlexWrap[™] EZ, StraightFlash[™], and VersaFlange[™] be covered within 9 months (270 days) of installation. DuPont requires that DuPont[™] Flashing Tape be covered within 4 months (120 days) of installation.
- Properly prepare all surfaces (remove dirt, dust, or moisture, etc.) per manufacturer's recommendations.
- Barrier installations (full perimeter seal on exterior) are acceptable only in the following instances:
 - Slab on grade doors, store front windows, or other systems with built-in drainage mechanisms that have potential for exposure to standing water
 - Surface barrier wall systems with non-water sensitive framing material (i.e., CMU walls)
 - Very low wind/rain exposure regions (southwest/desert) that follow AAMA 2400 installation guideline.

- Ensure that window/door and flashing system design takes into account common factors that will impact performance, such as:
 - Climate considerations: Rainfall, Wind, Temperature (hot/cold cycles), Humidity
 - Building design: Window/Wall Design (overhangs, recessed openings, bumpouts), Wall Assembly (wood frame or masonry), Window System (wood or vinyl), New Construction or Replacement Window drainage path
 - UV exposure prior to the construction of the exterior facade
 - Compliance with fire resistance code requirements. For more information about NFPA 285 compliant wall assemblies utilizing Tyvek[®] WRBs visit <u>building.dupont.com</u>.
- Field testing the window/door and wall installation as a complete system is a recommended best practice.
- DuPont recommends DuPont Building Envelope Solutions Products be installed by a DuPont Certified Installer. Contact your local Building Envelope Specialist for more information about the DuPont Certified Installer program.

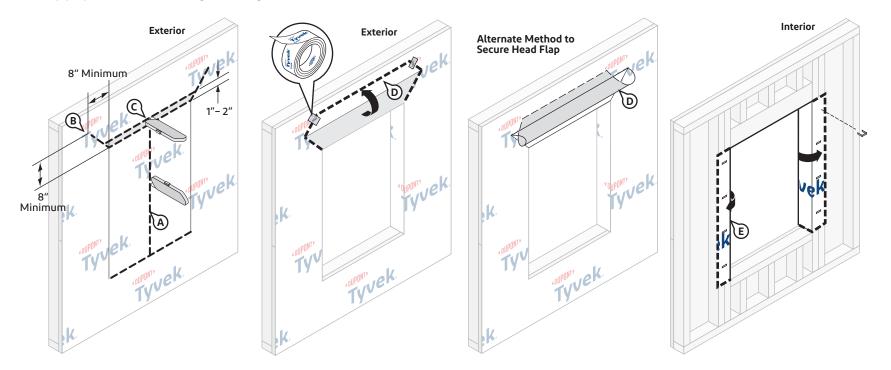
Sealants and Adhesives/Primers

Review the manufacturers' literature or label to confirm that the product(s) used have the chemical and adhesive properties necessary for use with **Tyvek® WRBs**, **DuPont Self-Adhered Flashing Products**, and **DuPont™ Tyvek® Fluid Applied Products**. Ensure the sealant materials meet the installation temperature requirements of the sealant manufacturer. Refer to <u>Chemical Compatibility of Representative Building Sealants and</u> <u>Adhesives/Primers</u> for more information about chemical compatibility.

Installation Methods for DuPont Self-Adhered Flashing Products Installed **AFTER** the DuPont[™] Tyvek[®] WRB Alternate Installation Considerations

Alternate Tyvek® WRB Head Flap Preparation Method

This optional method of creating the **Tyvek**[®] **WRB** head flap involves trimming the flap prior to the window or door installation. This installation method can be used in lieu of the standard head flap preparation shown throughout this guide.



Prepare the Tyvek® WRB for Window or Door Installation

- A. Make an "I-Cut" or "O-Cut"/flush cut in the **Tyvek**[®] **WRB** based on the type of window or door being installed. Follow the steps in the applicable section within this guide.
- NOTE: An "I-Cut" for an integral flanged window/door is shown.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window/ door head, up and away from the rough opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation.
- NOTE: Some flashing widths may require longer slits.

- C. Create another horizontal cut 1'' 2'' above the lower horizontal edge of the head flap.
- D. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

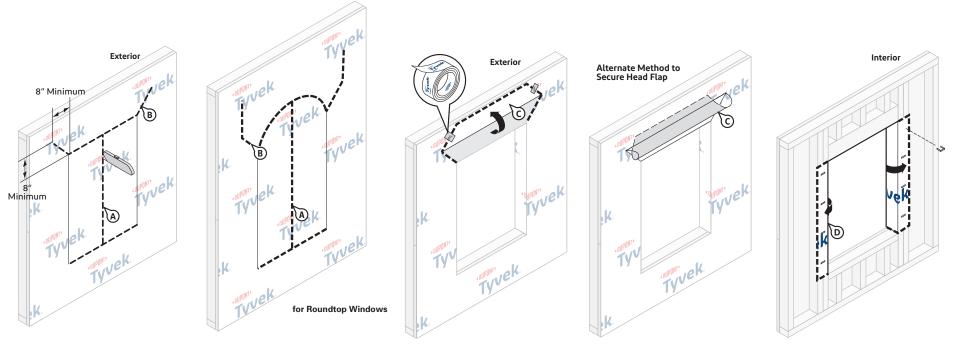
ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

E. Fold side flaps into rough opening (if an "I-Cut" was created previously) and secure to inside wall. Cut off excess flaps if desired.

Installation Methods for DuPont Self-Adhered Flashing Products Installed **AFTER** the DuPont[™] Tyvek[®] WRB Integral Flanged Window

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]

An integral flanged window is defined as a window unit with a nailing fin or flange that is continuous around the perimeter of the window and that is a direct extrusion of the window frame.



STEP 1

Prepare the Tyvek® WRB for Window Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the **Tyvek[®] WRB**. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening (for round top windows, the top cut should follow the curve of the opening). Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window head, up and away from the window opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation (see <u>STEP 4</u>).

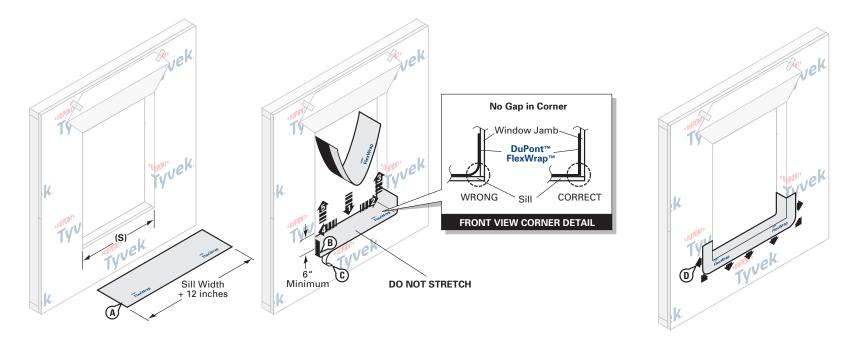
C. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek[®] WRB**.

NOTE: Some windows and flashing widths may require longer slits.

D. Fold side flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.

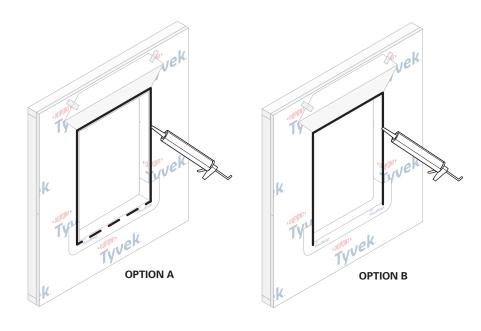
Installation Methods for DuPont Self-Adhered Flashing Products Installed **AFTER** the DuPont[™] Tyvek[®] WRB Integral Flanged Window



STEP 2

- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- C. Remove narrow release paper.
- D. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.

Installation Methods for DuPont Self-Adhered Flashing Products Installed **AFTER** the DuPont[™] Tyvek[®] WRB Integral Flanged Window

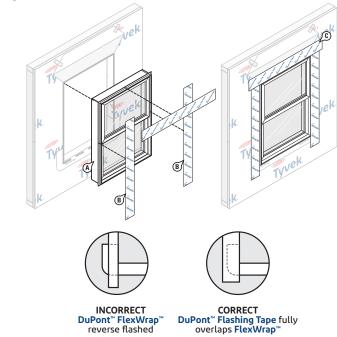


STEP 3

OPTION A: Apply continuous bead of Tower® Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.

OPTION B: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply sealant bead along sill**.

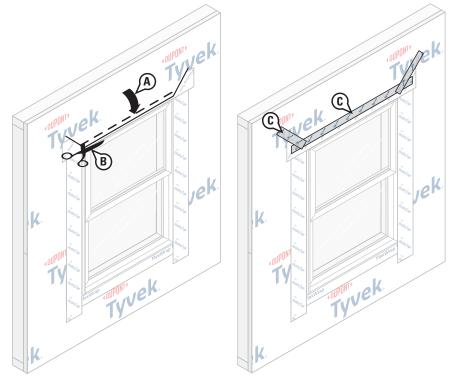
For Rectangular Windows



STEP 4

- A. Install window according to manufacturer's instructions.
- B. Cut two pieces of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** for jamb flashing extending 1" above window head flange and below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame. **OPTIONAL**: If installing a drip cap as part of the window installation before the **DuPont Self-Adhered Flashing** membrane at the window head flange, see <u>Drip Cap</u> <u>Installation</u> section and refer to <u>Option 1</u>. **NOTE**: The vertical leg of the drip cap must not be taller than the window head flange when installing drip cap according to <u>Option 1</u>.
- C. Cut a piece of **DuPont[™] Flashing Tape** or **StraightFlash[™]** for head flashing long enough to extend **BEYOND** the edges of jamb flashings. Remove release paper and install completely covering flange and adhering to exposed sheathing or framing members. **OPTIONAL**: If installing a drip cap as part of the window installation, but after the window head flashing, see <u>Drip Cap Installation</u> section and refer to <u>Option 2</u>.

NOTE: Ensure proper shingling. **DuPont[™] Flashing Tape** or **StraightFlash[™]** at jambs must overlap the **DuPont[™] FlexWrap[™]** at the sill and adhere to the **Tyvek[®] WRB** below the sill.

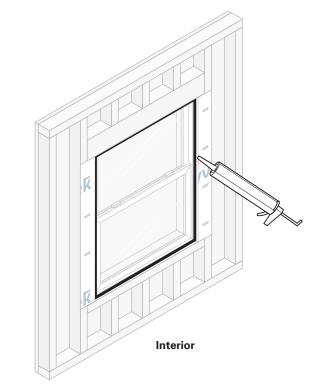


STEP 5

- A. Flip down upper flap of Tyvek[®] WRB so it lays flat across head flashing.
- B. Cut a 1"- 2" strip of the **Tyvek**[®] **WRB** at lower horizontal edge of the head flap. **NOTE**: Skip this step if the head flap was trimmed while preparing the **Tyvek**[®] **WRB** per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the *Applicable Structures and Performance Criteria* section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek[®] WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>. © 2023 DuPont. All Rights Reserved. 43-D100966-enUS-0423



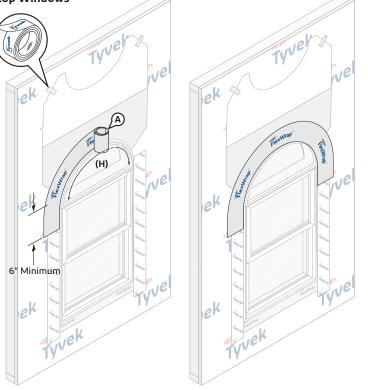
STEP 6

Final Step

Install Tower® Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower® Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont™ FlexWrap™** around the sill. When using **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro™ Dispensing Gun** during installation.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], DuPont[™] FlexWrap[™], and DuPont[™] FlexWrap[™] EZ

For Roundtop Windows

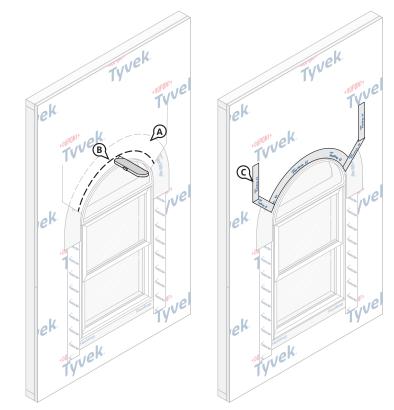


STEP 4

NOTE: Follow rectangular window instructions (Steps 1 through 4B) for proper installation of sill and jamb flashing prior to head flashing installation.

Install Head Flashing

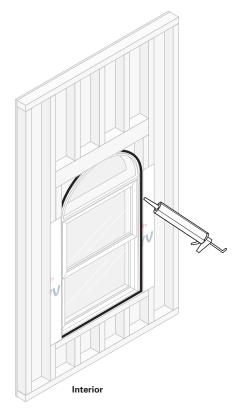
- A. Cut **FlexWrap**[™] head flashing at least 12" **LONGER** than the arc length (H) of round-top window.
- B. Remove both release papers and install to conform around top of window, covering entire mounting flange and adhering to exposed sheathing or framing members. Head flashing should overlap jamb flashings by at least 6".



STEP 5

- A. Flip down upper flap of **Tyvek[®] WRB** so it lays flat across head flashing.
- B. Cut a 1"- 2" strip of the **Tyvek**[®] **WRB** at lower edge of the head flap.
- C. Terminate head flap by continuously sealing the arc followed by the diagonal and then vertical seams with FlexWrap[™] EZ or FlexWrap[™]. Terminating the head flap with overlapping pieces of DuPont[™] Tyvek[®] Tape^{*}, DuPont[™] Flashing Tape or StraightFlash[™] is an alternative option. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

*For a more robust head flap termination, seal with **FlexWrap[™]**, **FlexWrap[™] EZ**, **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.



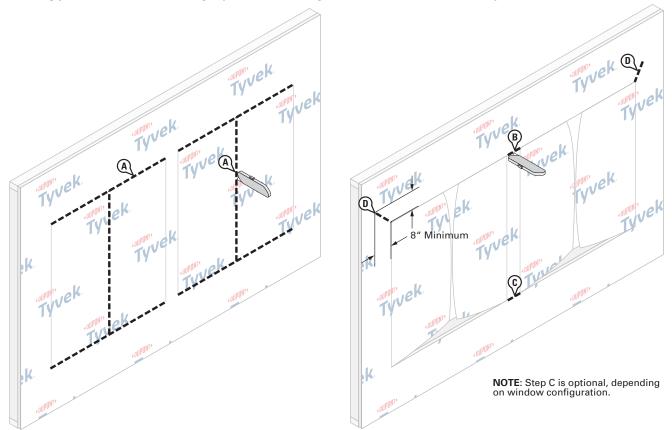
STEP 6

Final Step

Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **FlexWrap[™]** around the sill. When using **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro[™] Dispensing Gun** during installation.

Option 1 – When Using Tyvek[®] WRB at Sheathing/Framing Separating Adjacent Windows

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



STEP 1

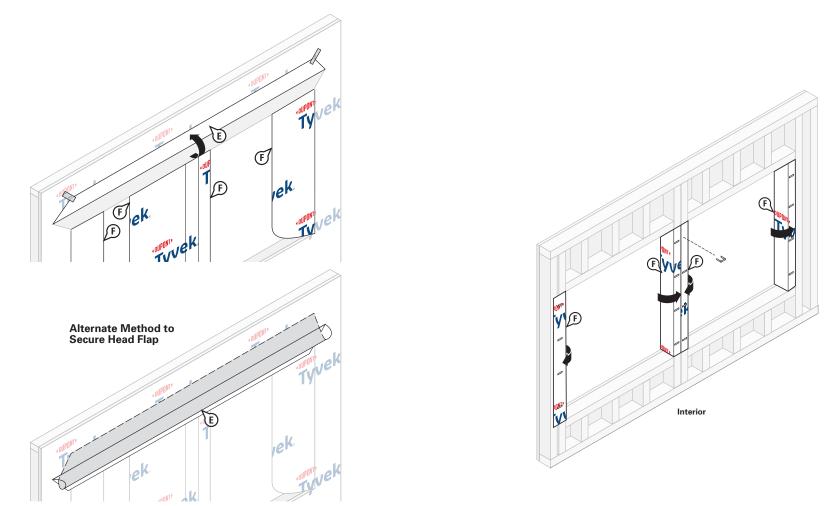
Prepare Tyvek® WRB for Window Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the Tyvek[®] WRB for each adjacent window rough opening. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut the **Tyvek[®] WRB** along the top of the shared window framing and/or sheathing to connect the "I-Cuts" as shown.
- C. OPTIONAL: For some applications, it may be practical to remove the Tyvek[®] WRB covering the shared sheathing/framing. Cut the Tyvek[®] WRB along the bottom of the shared window framing and/or sheathing to connect the "I-Cuts" and remove the Tyvek[®] WRB to expose the vertical sheathing/framing (see OPTIONAL Step 2).
- D. Cut two 45 degree slits a minimum of 8" extending from each outside corners of the window rough openings, up and away from the window opening. This will create a flap above the adjacent window rough openings to expose sheathing or framing members to allow head flashing installation (see <u>STEP 5</u>).

NOTE: Some windows and flashing widths may require longer slits.

Option 1 – When Using Tyvek[®] WRB at Sheathing/Framing Separating Adjacent Windows



STEP 1 – CONTINUED

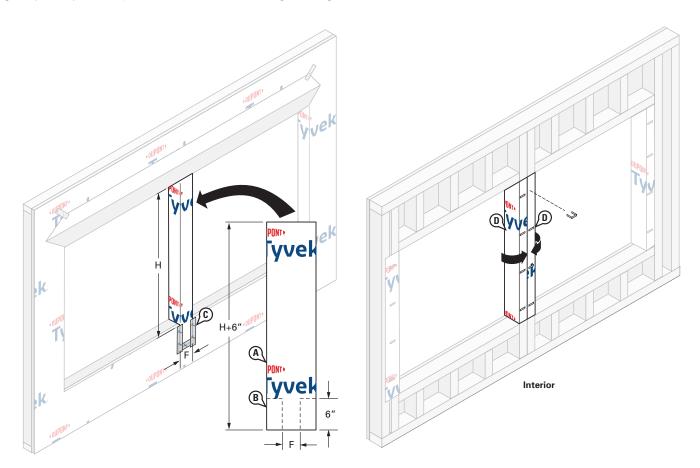
E. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

F. Fold the flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.

Option 1 – When Using Tyvek[®] WRB at Sheathing/Framing Separating Adjacent Windows

Follow STEP 2 when using a separate piece of **Tyvek**[®] **WRB** to cover sheathing/framing between the window.

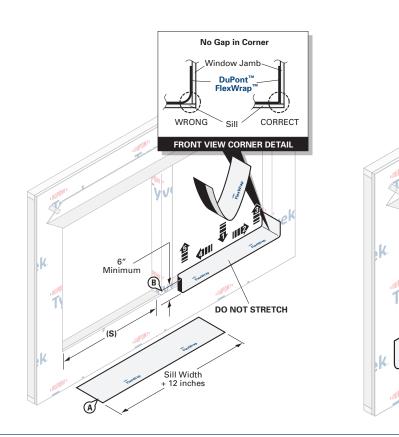


OPTIONAL STEP 2 - FOLLOW IF **TYVEK® WRB** WAS REMOVED FROM CENTER SHEATHING/FRAMING PER STEP 1C.

Preparation of Framing/Sheathing Separating Adjacent Windows Using Tyvek® WRB

- A. Cut a piece of **Tyvek[®] WRB** wide enough to cover the framing/sheathing between windows when wrapped into the window rough openings and 6" **LONGER** than the height of the rough opening.
- B. Cut corners to create side flaps that will fold into adjacent window rough openings with 6" of the **Tyvek**[®] **WRB** piece extending below the rough openings.
- C. Install Tyvek[®] WRB piece onto the framing/sheathing between windows. Do not install fasteners within 6" of the rough openings. DuPont[™] Tyvek[®] Tape may be used if necessary to hold Tyvek[®] WRB piece in place. Seal vertical seams below window with Tyvek[®] Tape.
- D. Fold the two side flaps into rough opening, and secure. Cut off excess flaps if necessary.

Option 1 – When Using Tyvek[®] WRB at Sheathing/Framing Separating Adjacent Windows



STEP 3

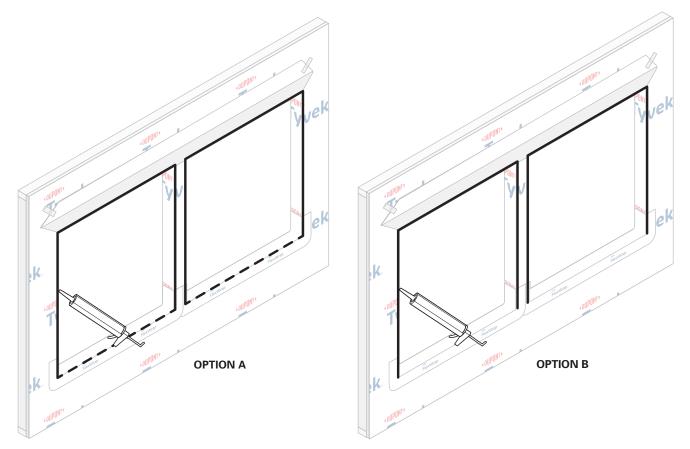
- A. Cut 2 pieces of **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Remove wide piece of release paper from the first piece of FlexWrap[™]. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- C. Remove narrow release paper from the **FlexWrap**[™].

D. Fan out the FlexWrap[™] at bottom corners onto face of wall and framing/sheathing between windows.

ve

E. Repeat Steps B-D for second window. NOTE: The FlexWrap[™] installed in the second window may overlap the FlexWrap[™] installed in the first window at the vertical exposed sheathing/framing separating the windows.

Option 1 – When Using Tyvek[®] WRB at Sheathing/Framing Separating Adjacent Windows

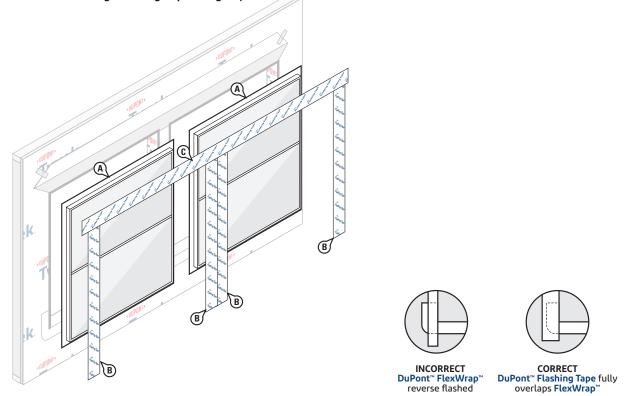


STEP 4

OPTION A: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.

OPTION B: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow** for drainage, do not apply sealant bead along sill.

Option 1 – When Using Tyvek[®] WRB at Sheathing/Framing Separating Adjacent Windows



STEP 5

- A. Install windows according to manufacturer's instructions.
- B. Cut four pieces of DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] for jamb flashing extending 1" above window head flanges and below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame. NOTE: The DuPont Self-Adhered Flashing Product for the inside jamb flashing of one window may overlap the DuPont[™] Flashing Tape or StraightFlash[™] on the inside jamb of the other window.

NOTE: If the inside jamb flanges of the two windows are sufficiently close, it is acceptable to use a single piece of **DuPont[™] Flashing Tape** or **StraightFlash[™]** to cover both inside jamb flanges. Select roll width wide enough to fully cover both jamb flanges.

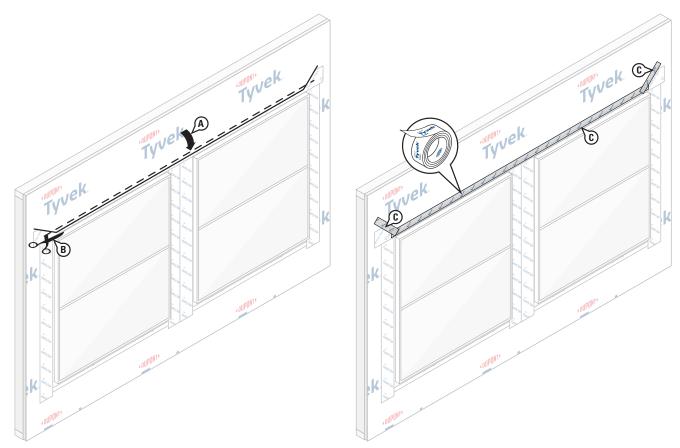
OPTIONAL: If installing a drip cap as part of the window installation before the **DuPont Self-Adhered Flashing** membrane at the window head flange, see <u>Drip Cap Installation</u> section and refer to <u>Option 1</u>. The vertical leg of the drip cap must not be taller than the window head flange when installing drip cap according to <u>Option 1</u>.

C. Cut a piece of **DuPont[™] Flashing Tape** or **StraightFlash[™]** for head flashing long enough to extend **BEYOND** the edges of flashing at outer jambs. Remove release paper and adhere to head flanges, extending onto sheathing. The **DuPont Self-Adhered Flashing** membrane over the window must extend **BEYOND** the top edge of the DuPont self-adhered flashing membrane previously installed between windows.

NOTE: Ensure proper shingling. **DuPont[™] Flashing Tape** or **StraightFlash[™]** at jambs must overlap the **DuPont[™] FlexWrap[™]** at the sill and adhere to the **Tyvek[®] WRB** below the sill.

OPTIONAL: If installing a drip cap as part of the window installation, but after the window head flashing, see *Drip Cap Installation* section and refer to <u>Option 2</u>.

Option 1 – When Using Tyvek[®] WRB at Sheathing/Framing Separating Adjacent Windows



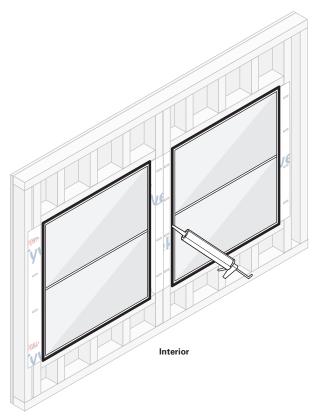
STEP 6

- A. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- B. Cut a 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.

Option 1 – When Using Tyvek[®] WRB at Sheathing/Framing Separating Adjacent Windows

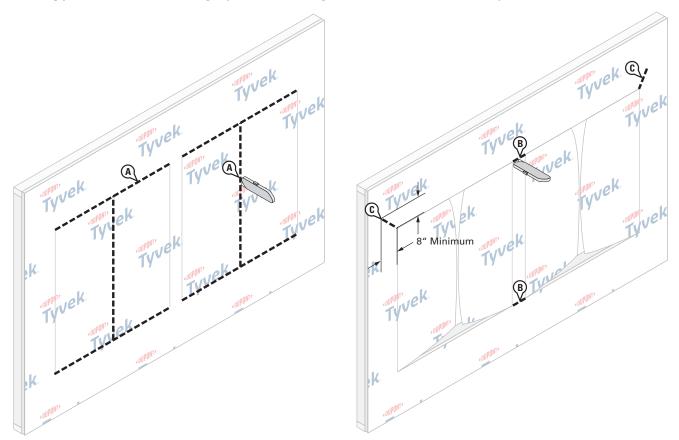


STEP 7

Final Step

Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont[™] FlexWrap[™]** around the sill. When using **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro[™] Dispensing Gun** during installation.

Option 2 – When using DuPont Self-Adhered Flashing Products at Sheathing/Framing Separating Adjacent Windows This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



STEP 1

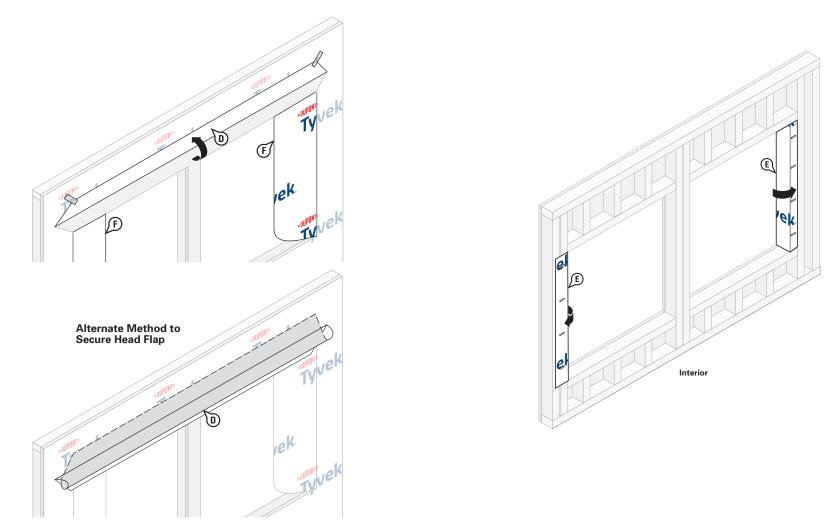
Prepare Tyvek[®] WRB for Window Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the **Tyvek**[®] **WRB** for each adjacent window rough opening. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut the **Tyvek[®] WRB** along the top and bottom of the shared window framing and/ or sheathing to connect the top and bottom of the "I-Cuts" as shown. Remove the **Tyvek[®] WRB** to expose the vertical sheathing/framing.
- C. Cut two 45 degree slits a minimum of 8" extending from each outside corners of the window rough openings, up and away from the window opening. This will create a flap above the adjacent window rough openings to expose sheathing or framing members to allow head flashing installation (see <u>STEP 5</u>).

NOTE: Some windows and flashing widths may require longer slits.

Option 2 – When using DuPont Self-Adhered Flashing Products at Sheathing/Framing Separating Adjacent Windows



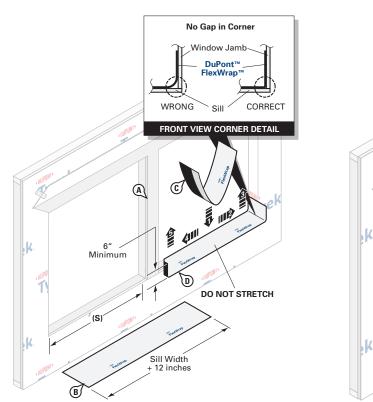
STEP 1 - CONTINUED

D. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

E. Fold side flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.

Option 2 - When using DuPont Self-Adhered Flashing Products at Sheathing/Framing Separating Adjacent Windows



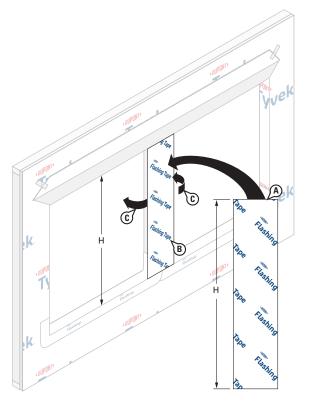
ve, JK.

STEP 2

- A. Follow Step 1B to remove **Tyvek**[®] **WRB** from shared sheathing/framing between windows.
- B. Cut 2 pieces of **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- C. Remove wide piece of release paper from the first piece of FlexWrap[™]. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.

- D. Remove narrow release paper from the **FlexWrap**[™].
- E. Fan out the **FlexWrap**[™] at bottom corners onto face of wall and framing/sheathing between windows.
- F. Repeat Steps B–D for second window. NOTE: The FlexWrap[™] installed in the second window may overlap the FlexWrap[™] installed in the first window at the vertical exposed sheathing/framing separating the windows.

Option 2 – When using DuPont Self-Adhered Flashing Products at Sheathing/Framing Separating Adjacent Windows

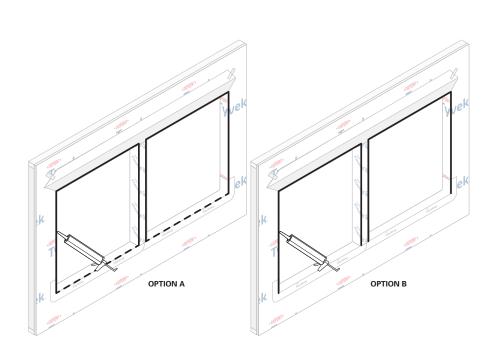


STEP 3

A. Cut a piece of 9" wide DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] 4"
 LONGER than the height of the rough opening.

NOTE: For adjacent windows separated by a wider shared sheathing/framing, two overlapping pieces of **DuPont[™] Flashing Tape** or **StraightFlash[™]** may be required. When the flashing is folded into the opening per Step C. below, it should extend minimum 1" **BEYOND** where the window frame will be located.

- B. Remove release paper and center the **DuPont[™] Flashing Tape** or **StraightFlash[™]** onto the face of the vertical exposed framing/sheathing with the bottom edge aligned with the sill rough opening. Adhere the exposed butyl onto the face of the vertical exposed framing sheathing.
- C. Fold the resulting **DuPont[™] Flashing Tape** or **StraightFlash[™]** flaps into the rough opening and adhere.

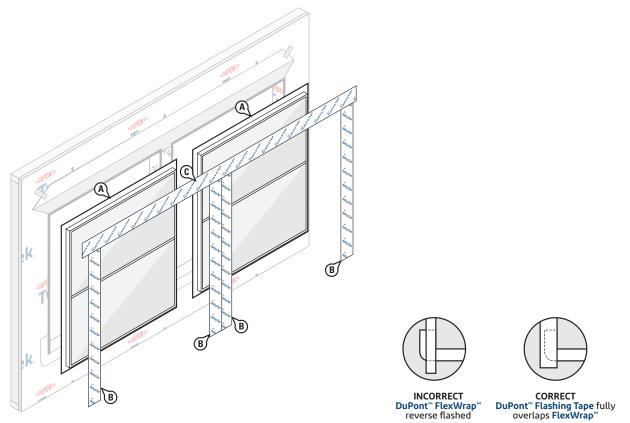


STEP 4

OPTION A: Apply continuous bead of Tower® Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.

OPTION B: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply sealant bead along sill**.

Option 2 – When using DuPont Self-Adhered Flashing Products at Sheathing/Framing Separating Adjacent Windows



STEP 5

- A. Install windows according to manufacturer's instructions.
- B. Cut four pieces of DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] for jamb flashing extending 1" above window head flanges and below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame. NOTE: The DuPont[™] Flashing Tape or StraightFlash[™] for the inside jamb flashing of one window may overlap the DuPont[™] Flashing Tape or StraightFlash[™] on the inside jamb of the other window.

NOTE: If the inside jamb flanges of the two windows are sufficiently close, it is acceptable to use a single piece of **DuPont[™] Flashing Tape** or **StraightFlash[™]** to cover both inside jamb flanges. Select roll width wide enough to fully cover both jamb flanges.

OPTIONAL: If installing a drip cap as part of the window installation before the DuPont self-adhered flashing membrane at the window head flange, see <u>Drip Cap Installation</u>

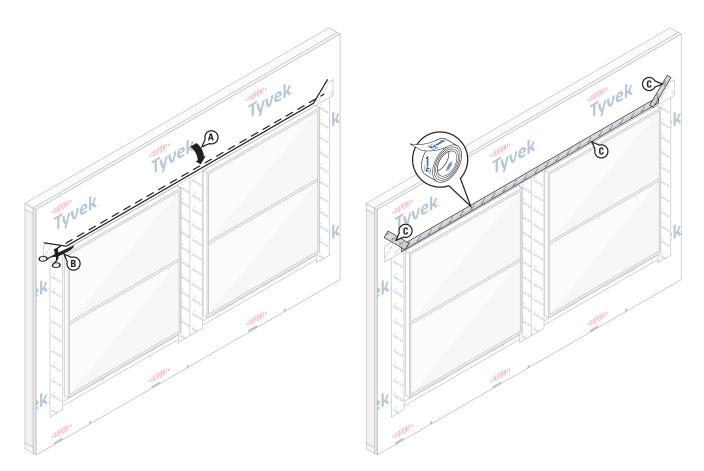
section and refer to <u>Option 1</u>. The vertical leg of the drip cap must not be taller than the window head flange when installing drip cap according to <u>Option 1</u>.

C. Cut a piece of **DuPont[™] Flashing Tape** or **StraightFlash[™]** for head flashing long enough to extend **BEYOND** the edges of flashing at outer jambs. Remove release paper and adhere to head flanges, extending onto sheathing. **DuPont Self-Adhered Flashing Product** over the window must extend **BEYOND** the top edge of the DuPont Self-Adhered Flashing Product membrane previously installed between windows.

NOTE: Ensure proper shingling. **DuPont[™] Flashing Tape** or **StraightFlash[™]** at jambs must overlap the **DuPont[™] FlexWrap[™]** at the sill and adhere to the **Tyvek[®] WRB** below the sill.

OPTIONAL: If installing a drip cap as part of the window installation, but after the window head flashing, see <u>Drip Cap Installation</u> section and refer to <u>Option 2</u>.

Option 2 – When using DuPont Self-Adhered Flashing Products at Sheathing/Framing Separating Adjacent Windows



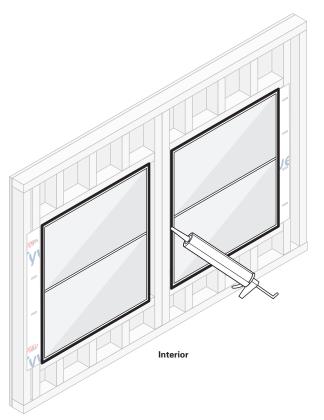
STEP 6

- A. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the *Applicable Structures and Performance Criteria* section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.

Option 2 – When using DuPont Self-Adhered Flashing Products at Sheathing/Framing Separating Adjacent Windows



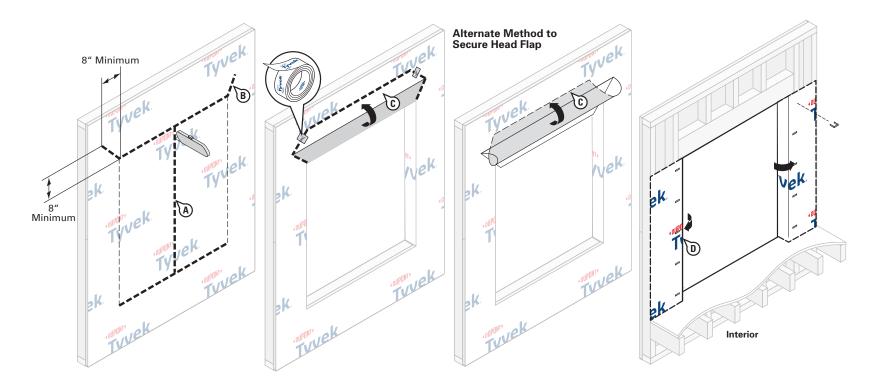
STEP 7

Final Step

Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont[™] FlexWrap[™]** around the sill. When using **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro[™] Dispensing Gun** during installation.

This method is intended for doors installed above grade and/or with wood floor construction.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



STEP 1

Prepare Tyvek® WRB for Door Installation

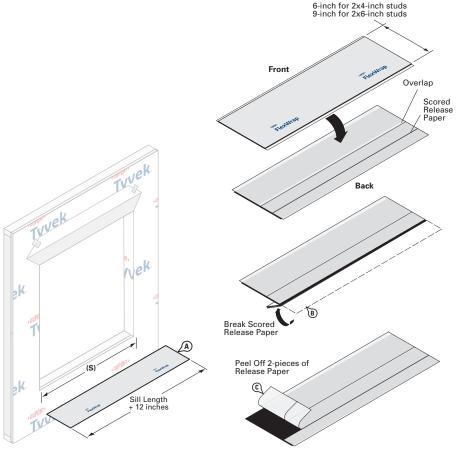
OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the WRB. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the door head up and away from door opening from the corner of the header, to create a flap above the rough opening to expose sheathing or framing members, to allow head flashing installation (see <u>STEP 8</u>). **NOTE**: Some doors and flashing widths may require longer slits.

C. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

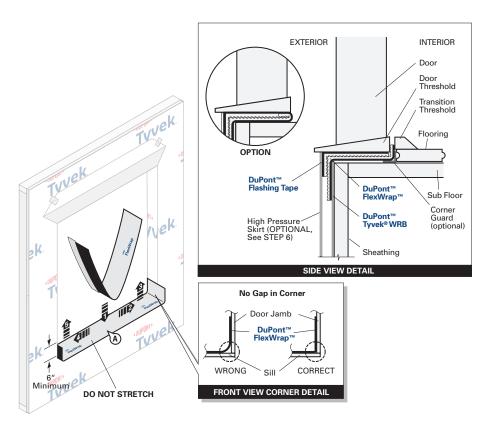
D. Fold side flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.



STEP 2

Preparation of Sill Flashing

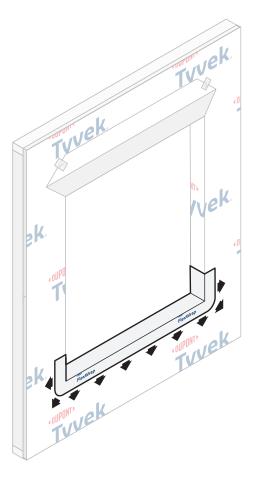
- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the door frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. 9" FlexWrap[™] has perforated release paper to help with the formation of the back dam (see <u>STEP 9</u>). To ensure that the perforation tears cleanly, fold the perforation 180° and crease the flashing.
- C. Remove the two widest pieces of release paper leaving the narrowest release paper on the flashing. When the finished floor is applied, the release paper can be removed and the back dam can be completed.

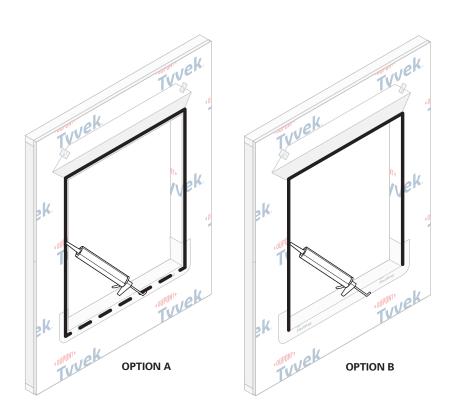


STEP 3

A. Position the sill flashing as indicated so the section with the release paper still attached extends past the door threshold on the inside. Ensure that 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening. When the 1" of release paper is removed, the remaining section of FlexWrap[™] can be used to form a back dam.

OPTIONAL: **Create back dam by folding back narrow section of FlexWrap**[™]: Some flooring cannot accomodate a back dam. In that case fold the back dam on top of **FlexWrap**[™] in the sill. The door will be installed on top of the fold to create a back dam (see Side View Detail above).





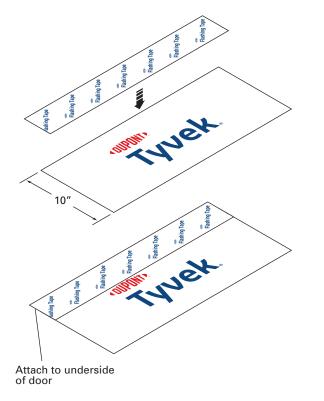
STEP 4

Fan out the **DuPont[™] FlexWrap[™]** at corners and adhere onto face of wall. Continue adhering onto face of wall along sill. Coverage of **FlexWrap[™]** should be 2"- 3" onto the face of the wall.

STEP 5

OPTION A: Apply continuous bead of Tower® Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.

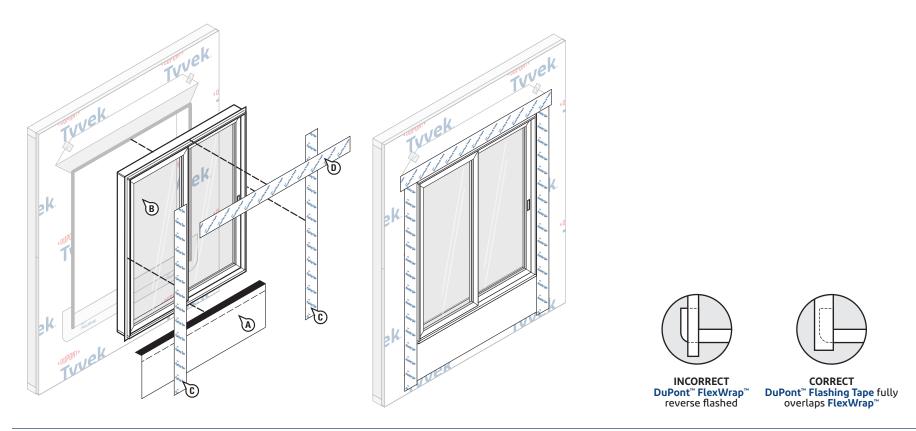
OPTION B: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply sealant bead along sill**.



STEP 6 (OPTIONAL)

For extreme/coastal exposures, installation of a high-pressure skirt is recommended to help prevent water intrusion at the sill or threshold.

- A. Create the high pressure skirt by cutting a piece of **Tyvek[®] WRB** 1" **WIDER** than the width of door opening and approximately 10" in depth.
- B. Cut a 4" piece of DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] to the same width as the skirt. Remove two pieces of release paper and adhere to the Tyvek[®] WRB.
- C. Remove the last piece of release paper and attach the skirt to the underside of the door. This skirt may be made with DuPont[™] Flashing Tape, StraightFlash[™], or DuPont[™] VersaFlange[™].

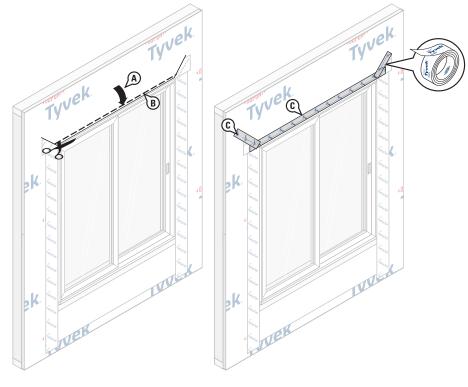


STEP 7

- A. **OPTIONAL**: Adhere high pressure skirt to the bottom threshold of the door.
- B. Install door according to manufacturer's instructions.
- C. Cut two pieces of DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] for jamb flashing extending 1" above door head flange and below bottom edge of sill flashing. Remove release paper and press tightly along sides of door frame.
 OPTIONAL: If installing a drip cap as part of the door installation before the DuPont self-adhered flashing membrane at the door head flange, see *Drip Cap Installation* section and refer to <u>Option 1</u>. The vertical leg of the drip cap must not be taller than the door head flange when installing drip cap according to <u>Option 1</u>.
- D. Cut a piece of DuPont[™] Flashing Tape or StraightFlash[™] for head flashing, which extends BEYOND the outer edges of jamb flashings. Remove release paper and install completely covering mounting flange and adhering to exposed sheathing or framing members (see D). OPTIONAL: If installing a drip cap as part of the door installation, but after the door head flashing, see <u>Drip Cap Installation</u> section and refer to <u>Option 2</u>.

NOTES:

- Ensure proper shingling. DuPont[™] Flashing Tape or StraightFlash[™] must overlap DuPont[™] FlexWrap[™] and adhere to the Tyvek[®] WRB.
- A recommended adhesive/primer is required when applying DuPont Self-Adhered Flashing Products to wood-based sheathing during adverse weather conditions, and over concrete, masonry or gypsum sheathing.

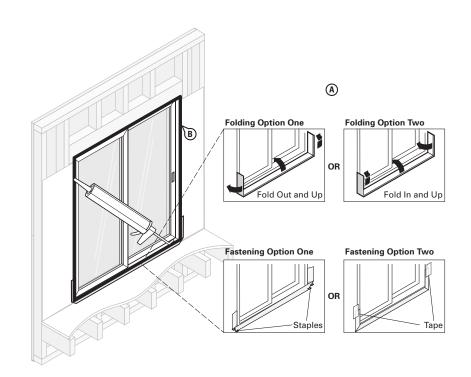


STEP 8

- A. Flip down upper flap of Tyvek[®] WRB so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of door is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek[®] WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.



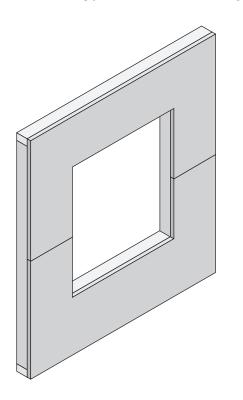
STEP 9

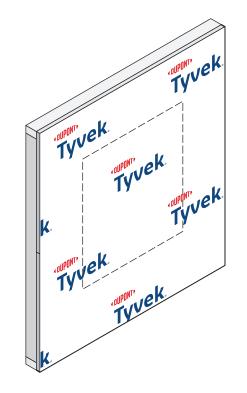
Final Step

- A. **OPTIONAL**: When the interior flooring is ready to install, remove release paper and use Folding Option One or Two (shown above) to form back dam.
- B. Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the door opening at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

This method may also be used for windows with horizontal mulls. For windows with vertical or combination mulls, refer to the Mulled Windows (Using "Wrap the Cavity" Method) Detail.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



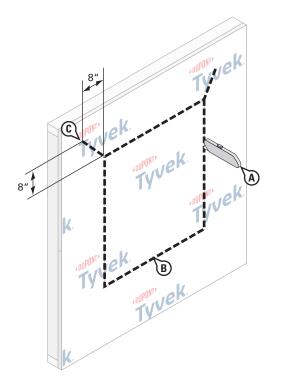


STEP 1

Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

STEP 2

Wrap wall as shown in the <u>DuPont[™] Tyvek[®] WRB Installation Instructions</u> section of this document. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

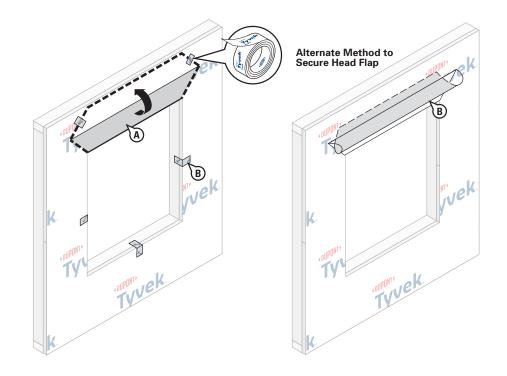


STEP 3

Prepare the DuPont[™] Tyvek[®] WRB for Window Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Cut an opening in the **Tyvek**[®] **WRB** using a flush cut ("O-Cut") around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the Tyvek[®]
 WRB is cut flush with the sheathing and is not wrapped into the rough opening.)
- C. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.

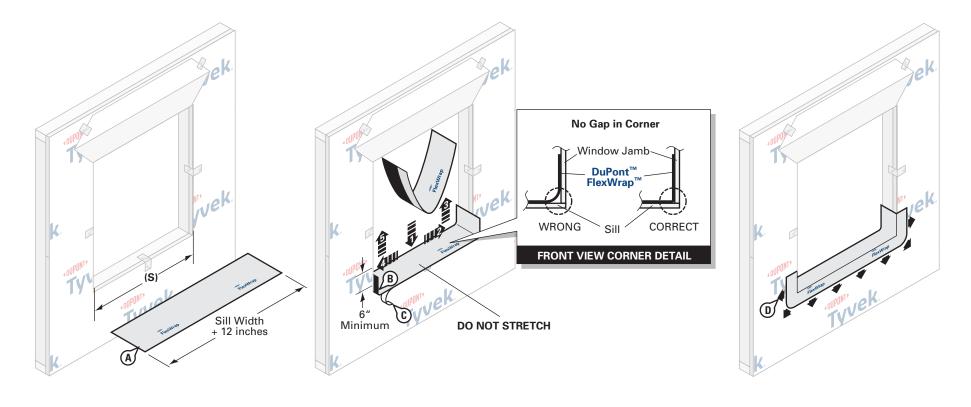


STEP 4

- A. Flip the head flap up to expose the sheathing and temporarily secure with tape.
- B. Temporarily secure the **Tyvek[®] WRB** with **Tyvek[®] Tape** around rough opening before flashing is installed to help facilitate flashing installation.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

NOTE: Some windows and flashing widths may require longer slits.

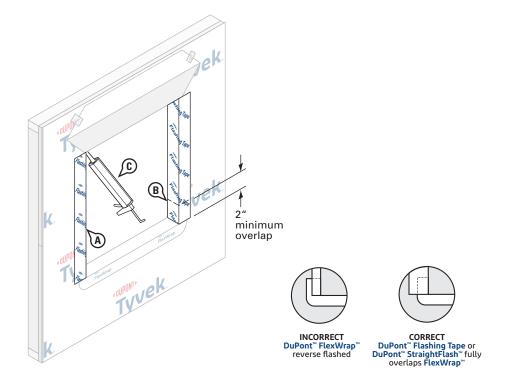


STEP 5

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

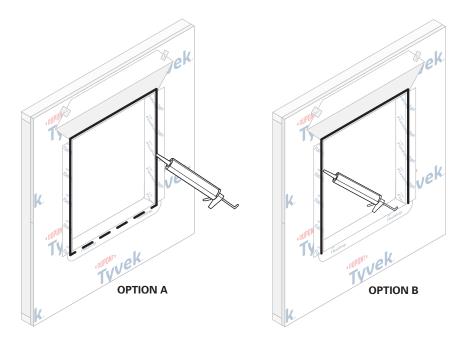
- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.

- C. Remove narrow release paper.
- D. Fan out FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.



STEP 6

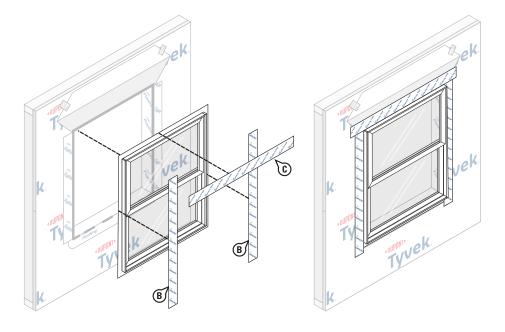
- A. Wrap DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] into the rough opening at each jamb and onto the wall. Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window will be located, ensuring minimum 2"- 3" adhesion onto the face of the wall.
- B. Jamb flashing should be long enough to overlap the sill flashing by at least 2".
- C. Apply Tower[®] Residential Sealant, or recommended sealant, to inside corners of rough opening at jamb/head.



STEP 7

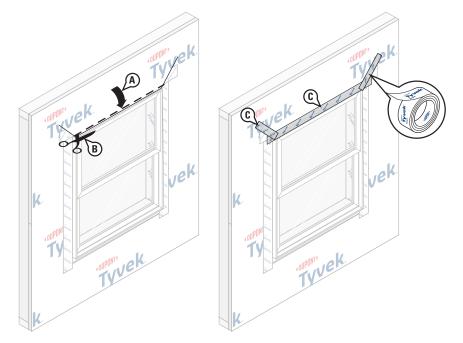
OPTION A: Apply continuous bead of Tower® Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.

OPTION B: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply sealant bead along sill**.



STEP 8

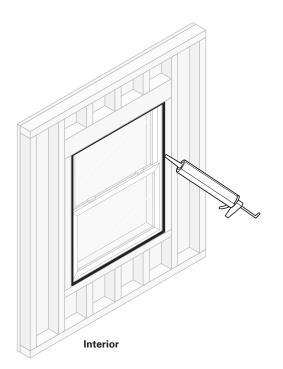
- A. Install window according to manufacturer's instructions.
- B. Cut two pieces of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** for jamb flashing extending 1" above window head flange and 4" to 6" below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame.
- C. Cut a piece of **DuPont[™] Flashing Tape** or **StraightFlash[™]** for head flashing, which extends **BEYOND** the outer edges of jamb flashings. Remove release paper and install completely covering mounting flange and adhering to exposed sheathing or framing members.



STEP 9

- A. Flip down upper flap of **DuPont[™] Tyvek[®] WRB** so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with **DuPont[™] Tyvek[®] Tape**, **DuPont[™] Flashing Tape**, or **StraightFlash[™]**. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable **if an air barrier is not required**.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

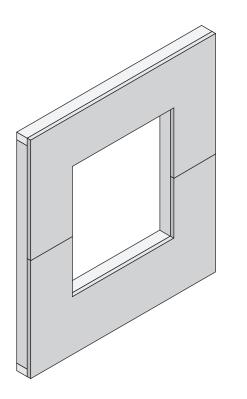


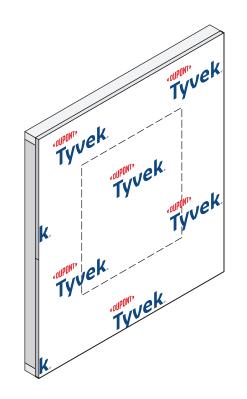
STEP 10

Final Step

Install Tower® Residential Sealant* or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower® Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont™ FlexWrap™** around the sill. When using **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro™ Dispensing Gun** during installation.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



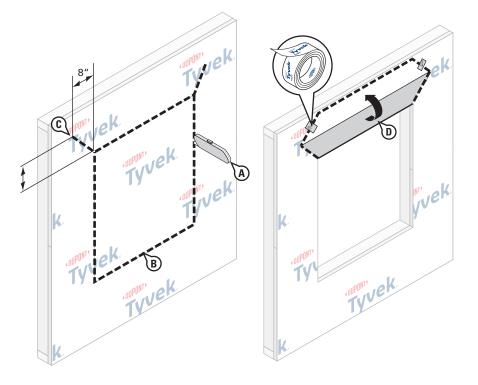


STEP 1

Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below, the sill framing to allow for positive drainage.

STEP 2

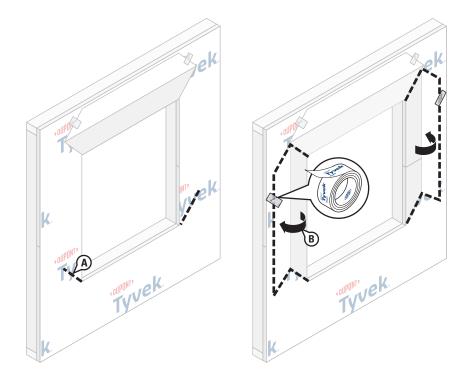
Wrap wall as shown in the <u>DuPont[™] Tyvek[®] WRB Installation Instructions</u> section of this document. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.



STEP 3

Prepare the DuPont[™] Tyvek[®] WRB for Window Installation

- A. Cut an opening in the **Tyvek[®] WRB** using a flush cut ("O-Cut") around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the Tyvek[®]
 WRB is cut flush with the sheathing and is not wrapped into the rough opening.)
- C. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.
- D. Flip the head flap up to expose the sheathing and temporarily secure with DuPont[™] Tyvek[®] Tape.

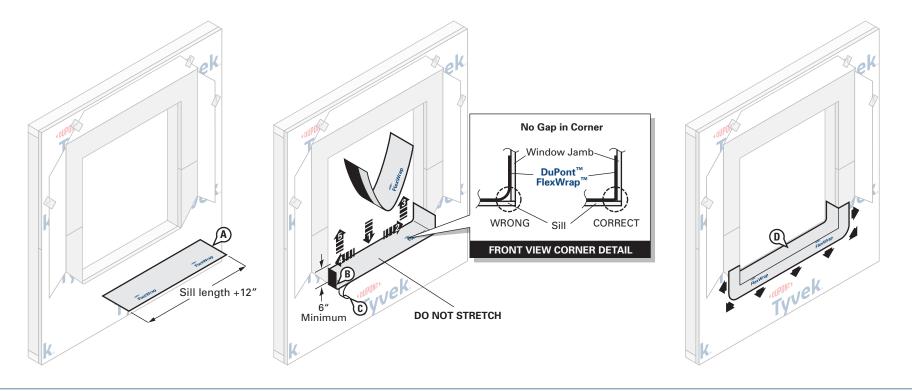


STEP 4

- A. Cut two 45° slits extending from the bottom corner up and away from the window opening to expose approximately 8" of sheathing. This will create a flap at each jamb to allow for jamb flashing installation.
- B. Flip the flaps to the side to expose the sheathing and temporarily secure with **Tyvek**[®] **Tape**.

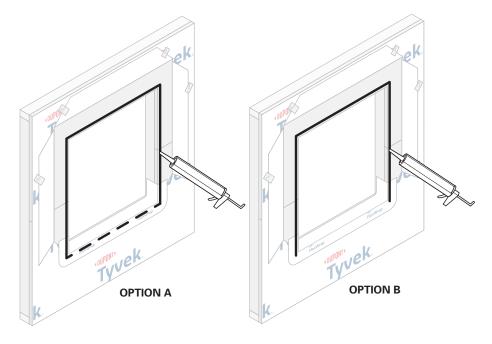
ALTERNATE METHOD TO SECURE FLAPS: In lieu of temporarily taping, the Tyvek[®] WRB flaps at the window head and jambs can be tucked under the Tyvek[®] WRB.

NOTE: Some windows and flashing widths may require longer slits.



STEP 5

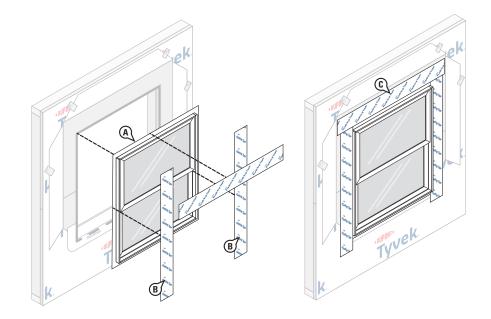
- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- C. Remove narrow release paper.
- D. Fan out **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.



STEP 6

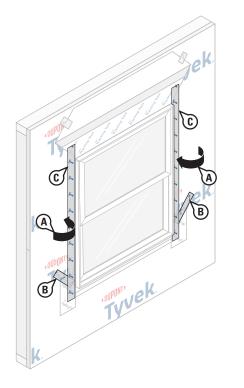
OPTION A: Apply continuous bead of Tower® Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.

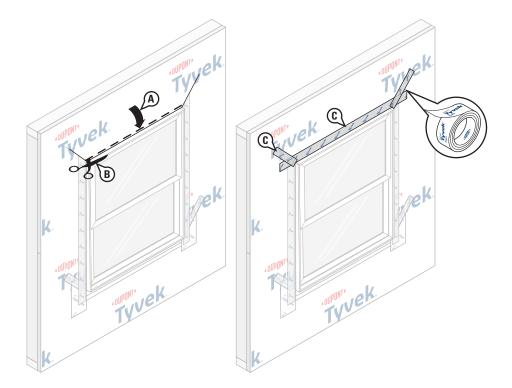
OPTION B: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply sealant bead along sill**.



STEP 7

- A. Install window according to manufacturer's instructions.
- B. Cut two pieces of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** for jamb flashing extending 1" above window head flange and 4" to 6" below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame.
- C. Cut a piece of **DuPont[™] Flashing Tape** or **StraightFlash[™]** for head flashing, which extends **BEYOND** the outer edges of jamb flashings. Remove release paper and install completely covering mounting flange and adhering to exposed sheathing or framing members.





STEP 8

- A. Flip over side flaps of DuPont[™] Tyvek[®] WRB so each lays flat across jamb flashing, then trim 1"- 2" from the window opening using shears so as not to damage the DuPont Self-Adhered Flashing Product below.
- B. Starting at the bottom of the window, install **DuPont[™] Tyvek[®] Tape** along the angled cut in in the **Tyvek[®] WRB**.
- C. Install **DuPont[™] Flashing Tape**, **DuPont[™] StraightFlash[™]** or **Tyvek[®] Tape** along the jamb flap.

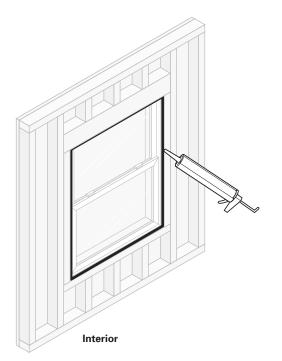
Repeat on other side of window.

NOTE: Additional mechanical fasteners may be installed through the flashing at head flap and perimeter of window for application in areas of extreme exposure.

STEP 9

- A. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the **Tyvek**[®] **WRB** at lower horizontal edge of the head flap.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with Tyvek[®] Tape, DuPont[™] Flashing Tape, or StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

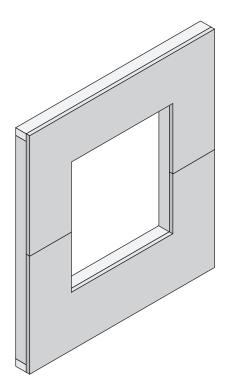


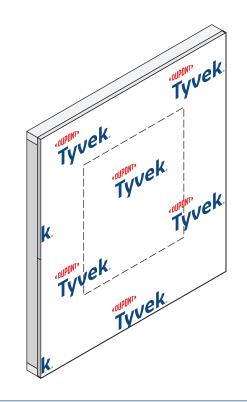
STEP 10

Final Step

Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont™ FlexWrap™** around the sill. When using **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro™ Dispensing Gun** during installation.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



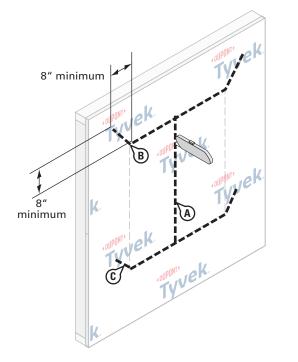


STEP 1

Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

STEP 2

Wrap wall as shown in the <u>DuPont^M Tyvek[®] WRB Installation Instructions</u> section in this document. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

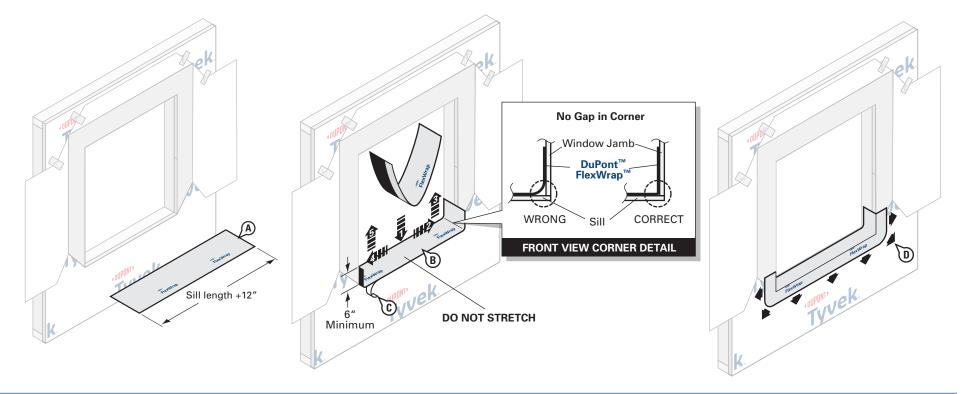


STEP 3

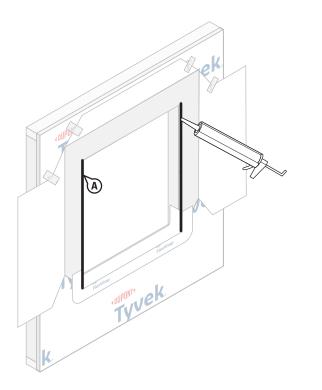
Prepare Tyvek[®] WRB for Window Installation

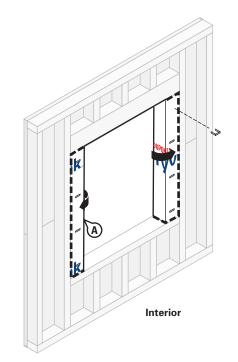
- A. Make an "I-Cut" in the **DuPont[™] Tyvek[®] WRB**. For an "I-Cut" begin with a horizontal cut across the bottom and the top of the rough opening (for round top windows, the top cut should follow the curve of the opening). Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.
- C. Cut two 45° slits extending from the bottom corner up and away from the window opening to expose 6"– 8" of sheathing. This will create a flap at each jamb to allow for jamb flashing installation.

- A. Flip the head flap up to expose the sheathing and temporarily secure with DuPont[™] Tyvek[®] Tape.
- B. Flip the flaps to the side to expose the sheathing and temporarily secure with **Tyvek**[®] **Tape**.



- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- C. Remove narrow release paper.
- D. Fan out **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.



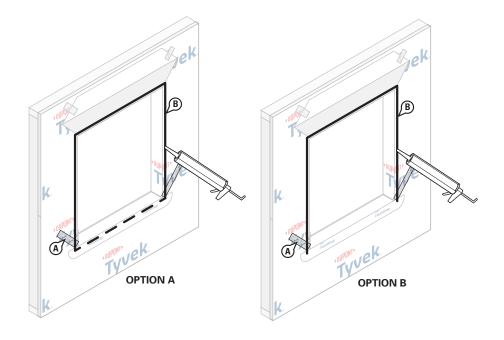


STEP 6

A. Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, to wall at the window jambs.

STEP 7

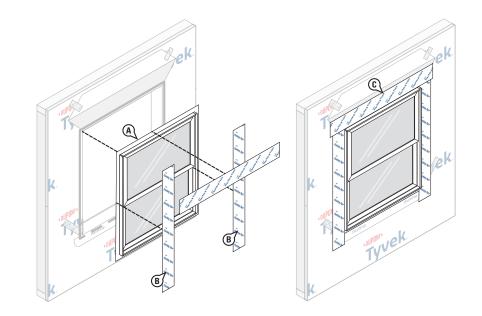
A. Fold flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.



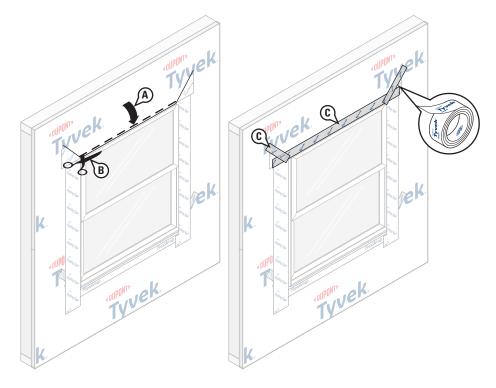
STEP 8

- A. Starting at the bottom of the window, install **DuPont[™] Tyvek[®] Tape** or **DuPont[™] Flashing Tape** along the angled cut in the **DuPont[™] Tyvek[®] WRB**.
- B. OPTION A: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. To allow for drainage, do not apply continuous sealant bead along sill. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from each corner of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"- 12" (on center) of sill width.

OPTION B: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. **To allow for drainage, do not apply sealant bead along sill**.



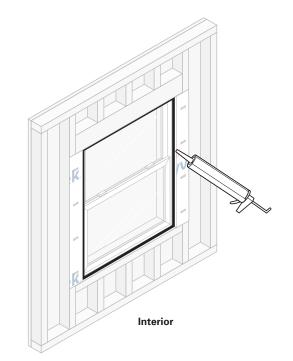
- A. Install window according to manufacturer's instructions.
- B. Cut two pieces of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** for jamb flashing extending 1" above window head flange and 4" to 6" below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame.
- C. Cut a piece of **DuPont[™] Flashing Tape** or **StraightFlash[™]** for head flashing, which extends **BEYOND** the outer edges of jamb flashings. Remove release paper and install completely covering mounting flange and adhering to exposed sheathing or framing members.



STEP 10

- A. Flip down upper flap of **DuPont[™] Tyvek[®] WRB** so it lays flat across head flashing.
- B. Cut a 1"- 2" strip of the **Tyvek**[®] **WRB** at lower horizontal edge of the head flap.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the *Applicable Structures and Performance Criteria* section for more information on air barrier requirements and head flap terminations.



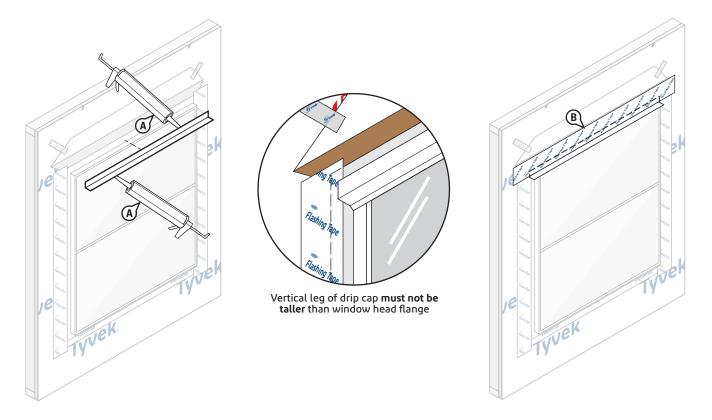
STEP 11

Final Step

Install Tower® Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower® Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont™ FlexWrap™** around the sill. When using **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro™ Dispensing Gun** during installation.

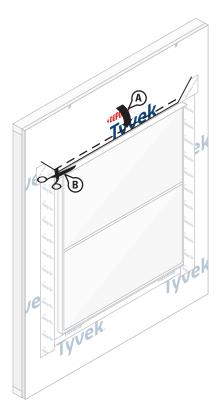
Option 1

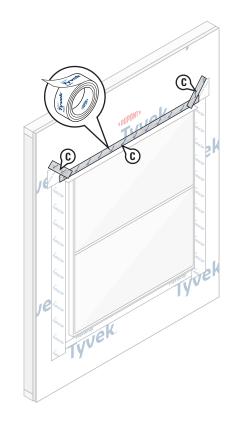
This option applies to integral flanged windows and doors only. A drip cap with a short vertical leg can be installed at the window head flange so it is integrated with the **DuPont Self-Adhered Flashing Product** installed at the head of the window **BEFORE** the **DuPont**[™] **Tyvek**[®] **WRB** head flap is flipped down and sealed. **NOTE**: When using this method, the vertical leg of the drip cap **must not be taller** than the window head flange when installed.



- A. After the window is installed and jamb flashing applied, cut a piece of metal or vinyl drip cap slightly LONGER than the width of the window. Place a bead of Tower[®] Residential Sealant, or recommended sealant, on the rear side of the vertical leg AND a bead on the rear side of the bottom horizontal leg. Install the drip cap tight against the window head flange.
- B. Cover the head flange and top edge of the drip cap with a piece of DuPont[™]
 Flashing Tape or DuPont[™] StraightFlash[™]. The DuPont Self- Adhered Flashing
 Product should be long enough to extend BEYOND the jamb flashing and adhere a minimum of 2" onto the wall.

Option 1 (continued)





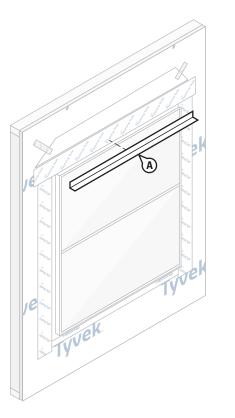
STEP 2

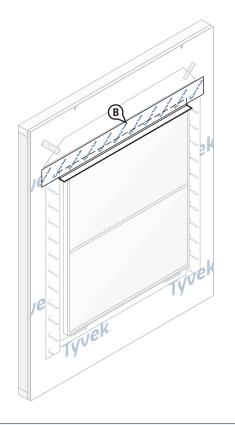
- A. Flip down DuPont[™] Tyvek[®] WRB head flap so it lays flat across the DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] covering the drip cap and window head flange.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with **DuPont[™] Tyvek[®] Tape**, **DuPont[™] Flashing Tape**, or **StraightFlash[™]**. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable **if an air barrier is not required**.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

Option 2

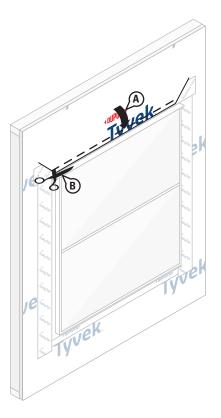
This option may be used for integral flanged, brick mold, field applied flanged, and non-flanged windows and doors. A drip cap can be installed over the head flashing above the window head **BEFORE** the **DuPont[™] Tyvek[®] WRB** head flap is flipped down and sealed.

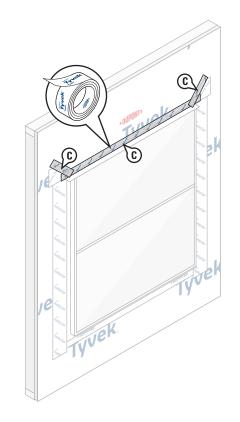




- A. After the head flashing is installed in accordance with these guidelines for the particular window type, (e.g. **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** is installed over window head flange), cut metal or vinyl drip cap slightly **LONGER** than the width of the window.
- B. Install the drip cap tight against the window head flashing and cover the top edge with **DuPont[™] Flashing Tape** or **StraightFlash[™]** extending past the top and sides of the drip cap.

Option 2 (continued)





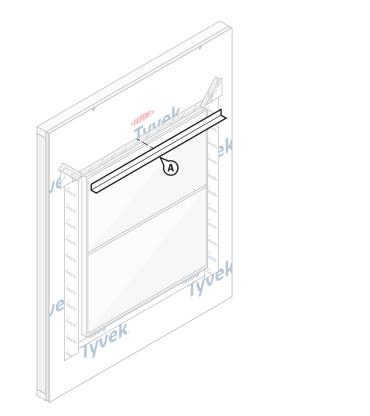
STEP 2

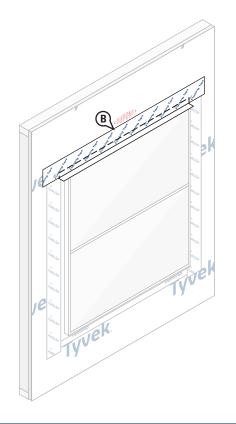
- A. Flip down DuPont[™] Tyvek[®] WRB head flap so it lays flat across the DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] covering the drip cap.
- B. Cut a 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap. NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the *Applicable Structures and Performance Criteria* section for more information on air barrier requirements and head flap terminations.

Option 3

This option may be used for integral flanged, brick mold, field applied flanged, and non-flanged windows and doors. A drip cap can be installed over the **DuPont[™] Tyvek[®] WRB** above the window head **AFTER** the **Tyvek[®] WRB** head flap is flipped down and sealed.



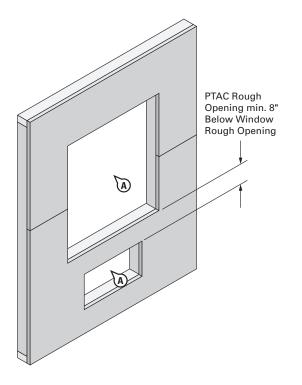


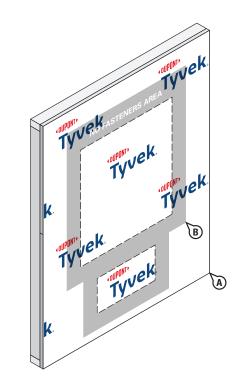
- A. After **Tyvek[®] WRB** head flap is flipped down and sealed, cut metal or vinyl drip cap slightly **LONGER** than the width of the window and install.
- B. As a recommended best practice, cover the top edge of the drip cap with **DuPont[™]** Flashing Tape or **DuPont[™]** StraightFlash[™] extending past the top and sides of the drip cap and side edges of the window head flashing.

This method is for flashing/protecting the rough opening of a packaged terminal air conditioner (PTAC) unit.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]

Option 1 – PTAC Rough Opening Min. 8" below Window Rough Opening



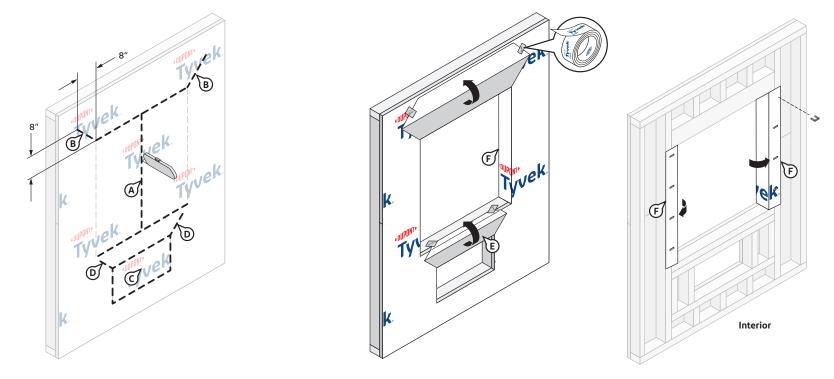


STEP 1

A. Cut rough opening in sheathing for window and PTAC. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

- A. Wrap wall as shown in the <u>DuPont™ Tyvek® WRB Installation Instructions</u> section in this guide.
- B. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

Option 1 - PTAC Rough Opening Min. 8" below Window Rough Opening



STEP 3

Prepare the Tyvek® WRB for Window and PTAC Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek® WRB** if desired instead.

A. Make an "I-Cut" in the Tyvek® WRB at the window rough opening per the <u>Integral</u> <u>Flanged Window</u> details section in this guide. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.

NOTE: An "I-Cut" for an integral flanged window is shown. If a non-flanged window is installed above the PTAC unit, follow the applicable section within this guide.

B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window head, up and away from the window opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation. Flip head flap up and temporarily secure with DuPont[™] Tyvek[®] Tape.

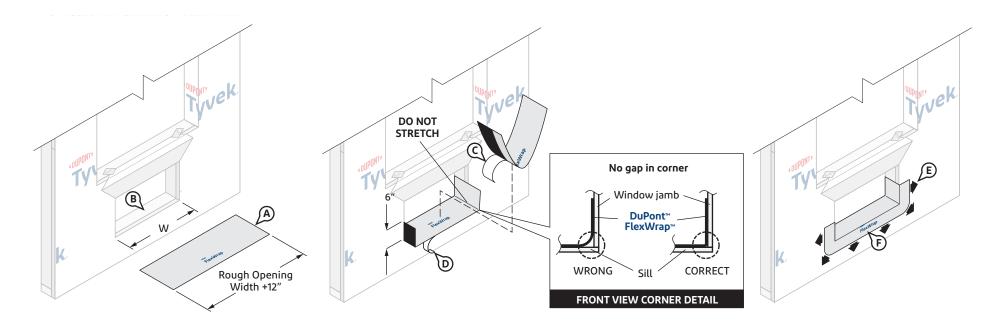
ALTERNATE METHOD TO SECURE HEAD FLAPS: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek® WRB**.

- C. Cut an opening in the **Tyvek**[®] **WRB** using a flush cut ("O-Cut") along the perimeter of the rough opening for the PTAC Unit. Cuts should be made along the dashed indicated lines. (Ensure that the **Tyvek**[®] **WRB** is cut flush with the sheathing and is not wrapped into the rough opening.)
- D. Cut two 45 degree slits up and away from the PTAC rough opening, extending from the corner of the head to expose 8" of sheathing to allow for flashing the head of the PTAC Unit.
- E. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

ALTERNATE METHOD TO SECURE HEAD FLAPS: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek® WRB**.

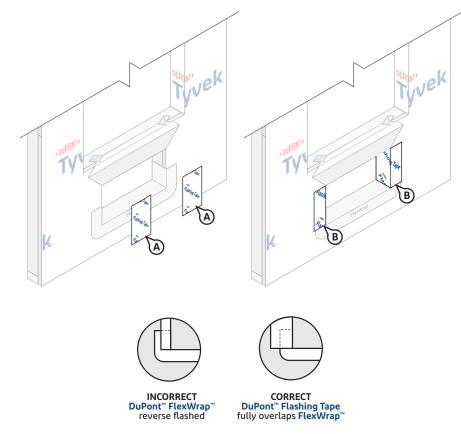
F. Fold side flaps into rough openings of the window (if applicable) and secure to inside wall. Cut off excess flaps if desired.

Option 1 – PTAC Rough Opening Min. 8" below Window Rough Opening



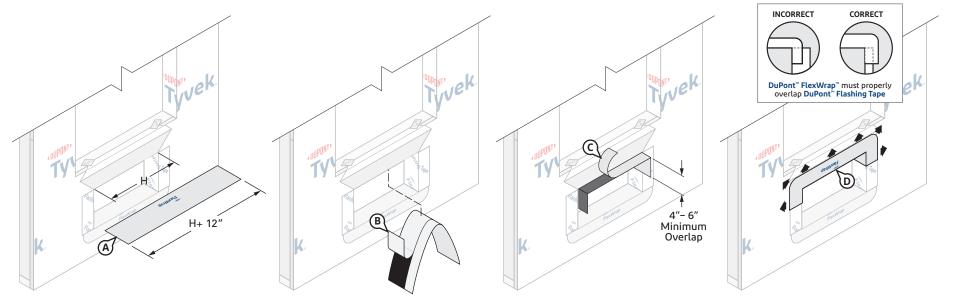
- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening (W). Use 6" **FlexWrap[™]** for 2" x 4" framing and 9" **FlexWrap[™]** for 2" x 6" framing.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.
- C. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- D. Remove narrow release paper.
- E. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.
- F. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.

Option 1 – PTAC Rough Opening Min. 8" below Window Rough Opening



- A. Cut two pieces of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** the height of the rough opening for the PTAC Unit. PTAC Unit Jamb flashing should be long enough to overlap the sill flashing by at least 2" and be overlapped by future head flashing by at least 2". Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window will be located, ensuring minimum 2"- 3" adhesion onto the face of the wall.
- B. Wrap the DuPont[™] Flashing Tape or StraightFlash[™] into the rough opening at each jamb and onto wall face. The flashing should fully overlap the FlexWrap[™] on the wall and extend at least 1" BEYOND where the back of the PTAC sleeve will be located.

Option 1 - PTAC Rough Opening Min. 8" below Window Rough Opening



STEP 6

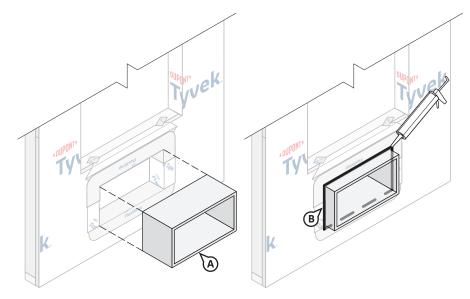
Install DuPont[™] FlexWrap[™] at the Head of PTAC Unit

- A. Cut FlexWrap[™] at least 8"- 12" LONGER than the width of rough opening head (H). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the back of the PTAC unit sleeve will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper and repeat at opposite corner.
- C. Remove narrow release paper.
- D. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.

NOTE: For exterior gypsum sheathing, apply a recommended adhesive/primer to the exposed sheathing. An adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.

NOTE: DuPont[™] Tyvek[®] Commercial Certified Installers may install a 3-piece head (and sill) detail for PTAC unit and window openings less than 6 ft. wide. Installers who **are not** DuPont[™] Tyvek[®] Commercial Certified Installers should refer to the <u>Special Considerations</u> section for more information regarding the 3-piece head/sill detail. Contact your local DuPont Building Envelope Specialist for more information about the Certified Installer program.

Option 1 – PTAC Rough Opening Min. 8" below Window Rough Opening

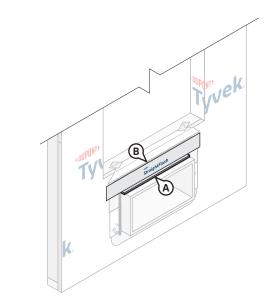


STEP 7

Install PTAC Unit

- A. Install PTAC Unit sleeve per manufacturer's installation instructions.
- B. Apply an exterior perimeter seal using backer rod and recommended sealant* along the jambs and head of the PTAC opening. Refer to <u>Chemical Compatibility of</u> <u>Representative Building Sealants and Adhesives/Primers</u> for more information on recommended sealants.

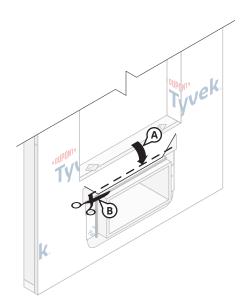
***NOTE**: Tower[®] Residential Sealant should **not** be used as the exterior perimeter seal for non-flanged units.

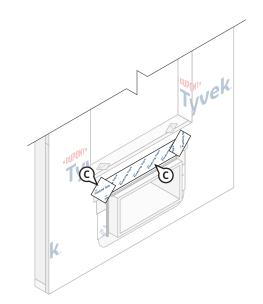


STEP 8 - OPTIONAL

- A. As a best practice for high exposure areas, install metal drip cap above the head joint when specified.
- B. Apply a strip of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** over the drip cap.

Option 1 – PTAC Rough Opening Min. 8" below Window Rough Opening



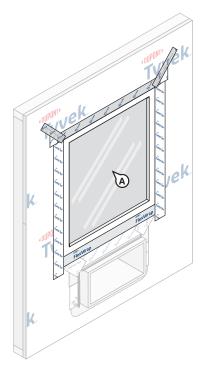


STEP 9

- A. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the Tyvek® WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek® WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™].

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the *Applicable Structures and Performance Criteria* section for more information on air barrier requirements and head flap terminations.

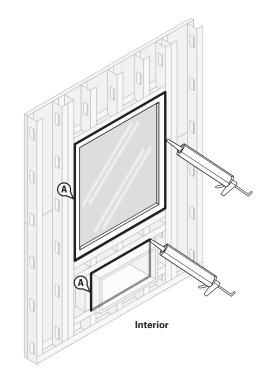
Option 1 – PTAC Rough Opening Min. 8" below Window Rough Opening



STEP 10

A. Prepare window rough opening, install window according to manufacturer's instructions, and flash per the *Integral Flanged Window* details section in this guide.

NOTE: An integral flanged window is shown. If a non-flanged window is installed above the PTAC unit, follow the applicable section within this guide.



STEP 11

Final Step

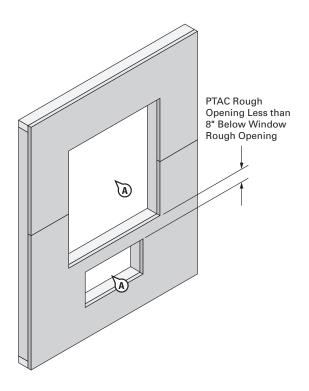
A. Install recommended sealant* (and backer rod as necessary) around both the window and PTAC openings at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Tower® Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

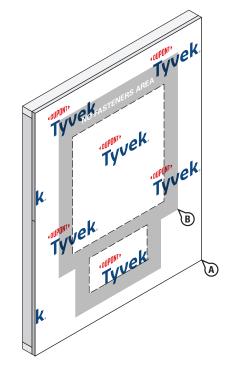
***NOTE**: Tower[®] Residential Sealant should **not** be used as the interior perimeter seal for non-flanged units. Refer to <u>Chemical Compatibility of Representative Building</u>. <u>Sealants and Adhesives/Primers</u> for more information on recommended sealants.

This method is for flashing/protecting the rough opening of a packaged terminal air conditioner (PTAC) unit.

This method applies to the following products: DuPont[™] Flashing Tape, and DuPont[™] FlexWrap[™]

Option 2 - PTAC Rough Opening Less than 8" below Window Rough Opening



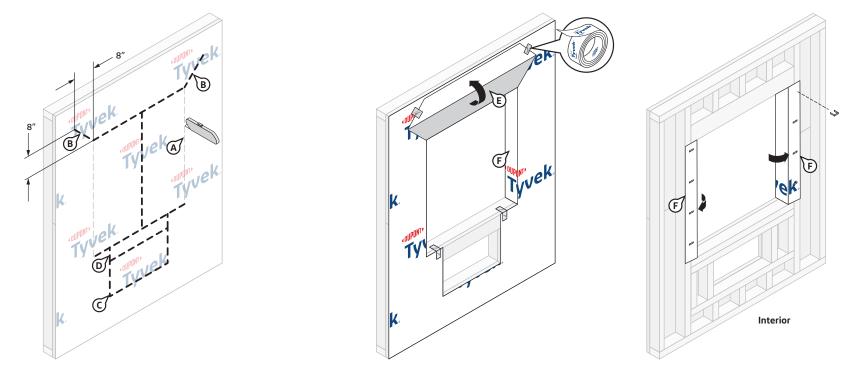


STEP 1

A. Cut rough opening in sheathing for window and PTAC. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

- A. Wrap wall as shown in the <u>DuPont[™] Tyvek[®] WRB Installation Instructions</u> section in this guide.
- B. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

Option 2 - PTAC Rough Opening Less than 8" below Window Rough Opening



STEP 3

Prepare the Tyvek® WRB for Window and PTAC Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek® WRB** if desired instead.

A. Make an "I-Cut" in the Tyvek® WRB at the window rough opening per the <u>Integral</u> <u>Flanged Window</u> details in this guide. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.

NOTE: An "I-Cut" for an integral flanged window is shown. If a non-flanged window is installed above the PTAC unit, follow the applicable section within this guide.

B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window head, up and away from the window opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation. Flip head flap up and temporarily secure with DuPont[™] Tyvek[®] Tape.

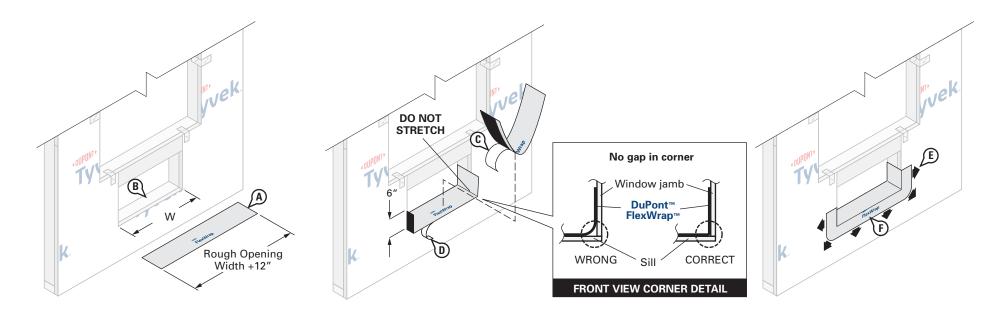
ALTERNATE METHOD TO SECURE HEAD FLAPS: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek® WRB**.

- C. Make a flush cut "O-Cut" in the **Tyvek**[®] **WRB** along the perimeter of the PTAC rough opening.
- D. Make two vertical cuts in the **Tyvek**[®] **WRB** above the PTAC rough opening to expose the sheathing in the area between the two rough openings. Cuts should align with jambs of the PTAC rough opening as shown.
- E. Flip head flap up and temporarily secure with **Tyvek® WRB**.

ALTERNATE METHOD TO SECURE HEAD FLAPS: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek® WRB**.

F. Fold side flaps into rough openings of the window and the PTAC and secure to inside wall. Cut off excess flaps if desired.

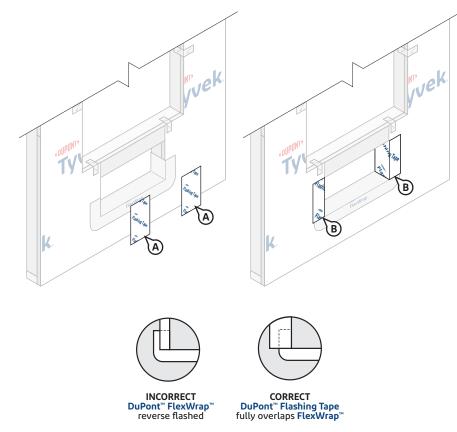
Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening



- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening (W). Use 6" **FlexWrap[™]** for 2" x 4" framing and 9" **FlexWrap[™]** for 2" x 6" framing.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.
- C. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- D. Remove narrow release paper.

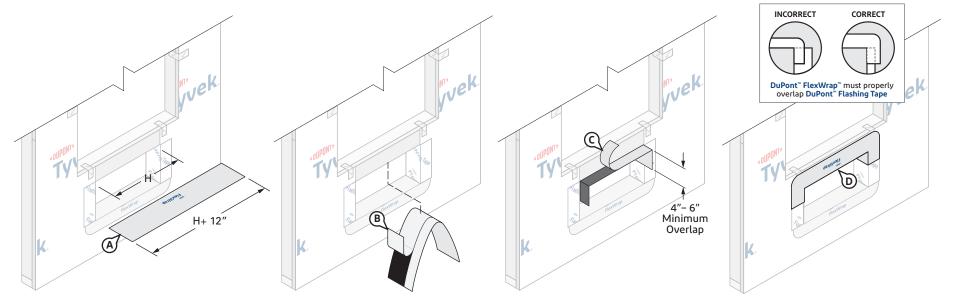
- E. Fan out the **FlexWrap™** at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.
- F. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.

Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening



- A. Cut two pieces of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** the height of the rough opening for the PTAC Unit. PTAC Unit jamb flashing should be long enough to overlap the sill flashing by at least 2" and be overlapped by future head flashing by at least 2". Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window will be located, ensuring minimum 2"- 3" adhesion onto the face of the wall.
- B. Wrap the **DuPont[™] Flashing Tape** or **StraightFlash[™]** into the rough opening at each jamb and onto wall face. The flashing should fully overlap the **FlexWrap[™]** on the wall and extend at least 1" **BEYOND** where the back of the PTAC sleeve will be located.

Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening



STEP 6

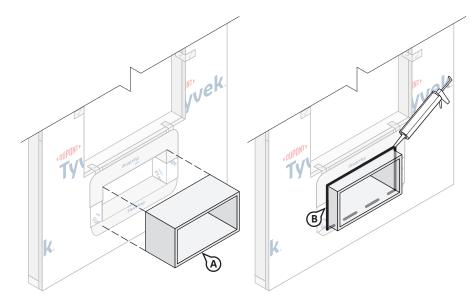
Install DuPont[™] FlexWrap[™] at the Head of PTAC Unit

- A. Cut FlexWrap[™] at least 8"- 12" LONGER than the width of rough opening head (H). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the back of the PTAC unit sleeve will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper and repeat at opposite corner.
- C. Remove narrow release paper.
- D. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.

NOTE: For exterior gypsum sheathing, apply a recommended adhesive/primer to the exposed sheathing. An adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.

NOTE: DuPont[™] Tyvek[®] Certified Installers may install a 3-piece head (and sill) detail for PTAC unit and window openings less than 6 ft. wide. Installers who are not DuPont[™] Tyvek[®] Certified Installers should refer to the <u>Special Considerations</u> section for more information regarding the 3-piece head/sill detail. Contact your local DuPont Building Envelope Specialist for more information about the Certified Installer program.

Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening

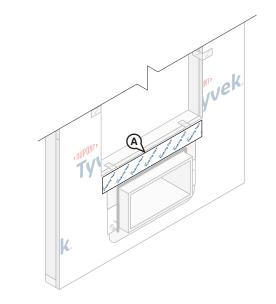


STEP 7

Install PTAC Unit

- A. Install PTAC Unit sleeve per manufacturer's installation instructions.
- B. Apply an exterior perimeter seal using backer rod and recommended sealant* along the jambs and head of the PTAC opening. Refer to <u>Chemical Compatibility of</u> <u>Representative Building Sealants and Adhesives/Primers</u> for more information on recommended sealants.

***NOTE**: Tower[®] Residential Sealant should **not** be used as the exterior perimeter seal for non-flanged units.

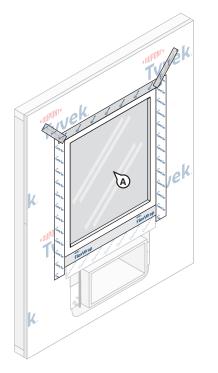


STEP 8

Only required when DuPont[™] FlexWrap[™] head piece does not fully cover exposed sheathing between rough openings and/or the drip cap (if installed).

A. Cut a piece of DuPont[™] Flashing Tape long enough to extend min. 2" BEYOND each end of FlexWrap[™] PTAC head flashing. Install the cut piece of flashing so top edge is flush with the window sill and is centered along the FlexWrap[™] PTAC head flashing.

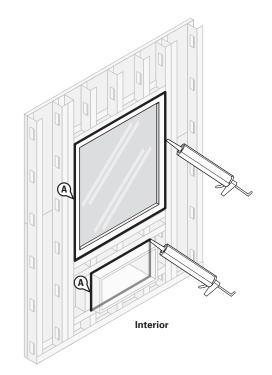
Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening



STEP 9

A. Prepare window rough opening, install window according to manufacturer's instructions, and flash per the *Integral Flanged Window* details section in this guide.

NOTE: An integral flanged window is shown. If a non-flanged window is installed above the PTAC unit, follow the applicable section within this guide.



STEP 10

Final Step

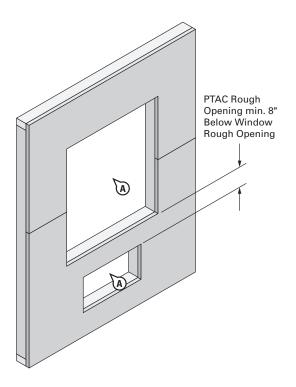
A. Install recommended sealant* (and backer rod as necessary) around both the window and PTAC openings at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Tower® Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

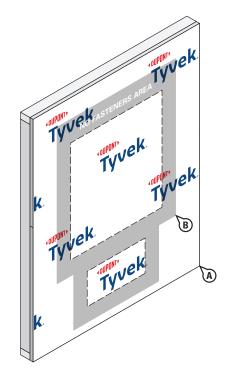
***NOTE**: Tower[®] Residential Sealant should **not** be used as the interior perimeter seal for non-flanged units. Refer to <u>Chemical Compatibility of Representative Building</u>. <u>Sealants and Adhesives/Primers</u> for more information on recommended sealants.

This method can be used to flash packaged terminal air conditioner (PTAC) Unit sleeves. Ensure **DuPont[™] VersaFlange[™]** logo side faces the exterior. Use of **DuPont[™] VersaFlange[™]** requires a smooth-framed PTAC sleeve for proper adhesion to the frame.

This method applies to the following products: DuPont[™] VersaFlange[™], DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]

Option 1 - PTAC Rough Opening Minimum 8" below Window Rough Opening



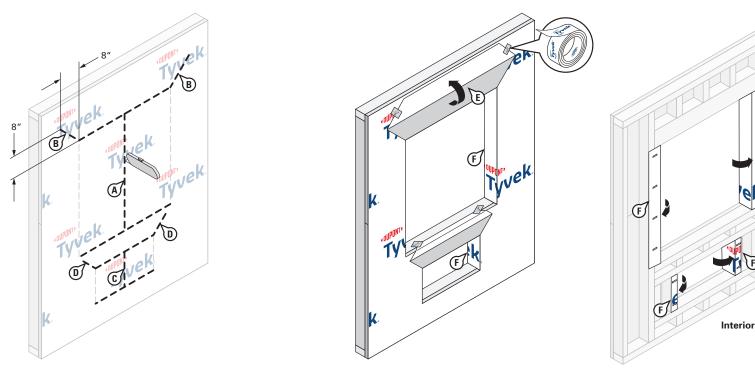


STEP 1

A. Cut rough opening in sheathing for window and PTAC. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

- A. Wrap wall as shown in the <u>DuPont[™] Tyvek[®] WRB Installation Instructions</u> section in this guide.
- B. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

Option 1 - PTAC Rough Opening Minimum 8" below Window Rough Opening



STEP 3

Prepare the Tyvek® WRB for Window and PTAC Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

A. Make an "I-Cut" in the Tyvek[®] WRB at the window rough opening per the <u>Integral</u> <u>Flanged Window</u> details in this guide. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.

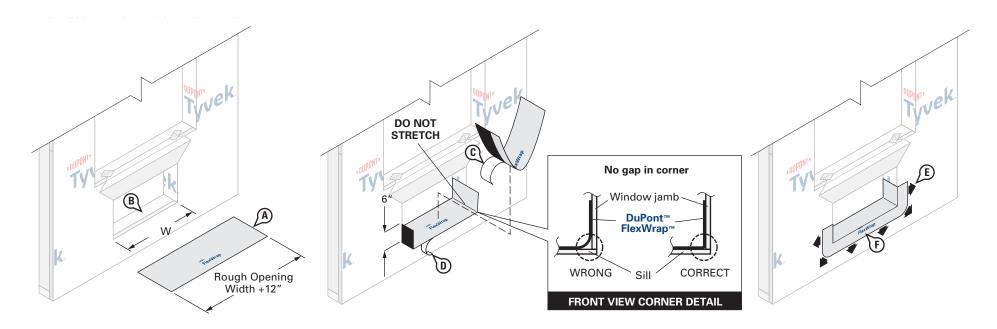
NOTE: An "I-Cut" for an integral flanged window is shown. If a non-flanged window is installed above the PTAC unit, follow the applicable section within this guide.

B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window head, up and away from the window opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

- C. Make an "I-Cut" in the Tyvek® WRB at the PTAC rough opening.
- D. Cut two 45 degree slits up and away from the PTAC rough opening, extending from the corner of the head. Cuts should extend far enough to ensure **DuPont[™]** VersaFlange[™] that will be installed in a future step can be installed to the exposed sheathing at the head.
- E. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.
- F. Fold side flaps into rough openings of the window and the PTAC and secure to inside wall. Cut off excess flaps if desired.

ALTERNATE METHOD TO SECURE HEAD FLAPS: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

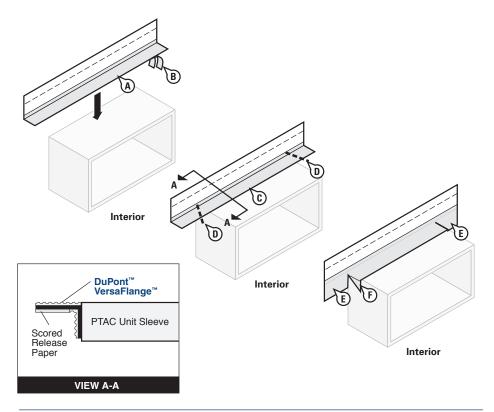
Option 1 – PTAC Rough Opening Minimum 8" below Window Rough Opening



- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening (W). Use 6" **FlexWrap[™]** for 2" x 4" framing and 9" **FlexWrap[™]** for 2" x 6" framing.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.
- C. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- D. Remove narrow release paper.

- E. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.
- F. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.

Option 1 – PTAC Rough Opening Minimum 8" below Window Rough Opening



Make sure the adhesive on these pieces will overlap.

Interior

STEP 5

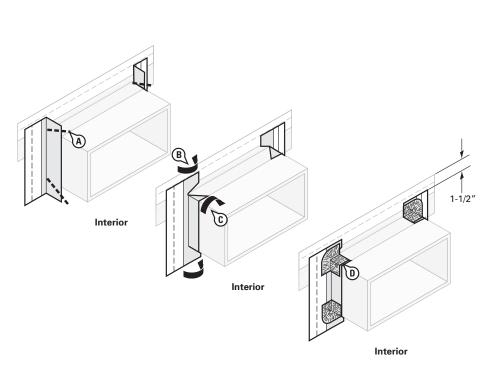
Prepare PTAC Unit Sleeve using DuPont[™] VersaFlange[™]

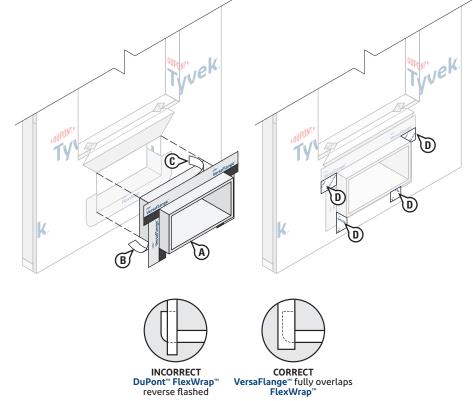
- A. Prepare head flashing by cutting a piece of **VersaFlange**[™] at least 12" **LONGER** than the head length.
- B. Remove the release paper from one side of the VersaFlange[™].
- C. Center the flashing along the length of the PTAC unit sleeve and position so that it contacts the PTAC unit sleeve. Use firm hand pressure or a j-roller to ensure proper adhesion to the sleeve.
- D. Beginning at the junction of the jamb and head and away from the corners, cut the VersaFlange[™] at a 45° angle.
- E. Fold the newly created flashing flaps down parallel to the PTAC unit sleeve.
- F. Fold remaining head flashing flaps down onto the jamb.

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- A. Prepare jamb flashing by cutting a piece of VersaFlange[™] at least 6" LONGER than the jamb length.
- B. Remove the release paper from one side of the VersaFlange[™].
- C. Position the **VersaFlange**[™] so that it contacts the PTAC unit sleeve up to the exterior face of the sleeve. Ensure that the jamb flashing is positioned 11/2" below top of the head flashing. **Jamb flashing adhesive must come in contact with head flashing adhesive and overlap by one inch**.
- D. Repeat on opposite jamb.

Option 1 - PTAC Rough Opening Minimum 8" below Window Rough Opening





STEP 7

- A. Beginning at the junction of the jambs and the head, and away from the corners, cut the **DuPont[™] VersaFlange[™]** at a 45° angle. Repeat the procedure at the junction of the sill and jambs.
- B. In order to overlap jamb adhesive to the head flashing adhesive, temporarily pull back release liner on the head flashing. Fold cut jamb flashing parallel to the PTAC unit sleeve so that the jamb flashing lies flat onto the head flashing. Fold the head flashing release liner back down to protect any remaining exposed butyl along the head flashing prior to installation of the PTAC unit.
- C. Fold remaining jamb flashing flaps down at all corners and adhere to the PTAC unit sleeve.
- D. Cut four 3" x 3" pieces of **DuPont[™] FlexWrap[™]**, or four 3" pieces of **DuPont[™] FlexWrap[™] EZ**, and add patches to corners of the PTAC unit sleeve.

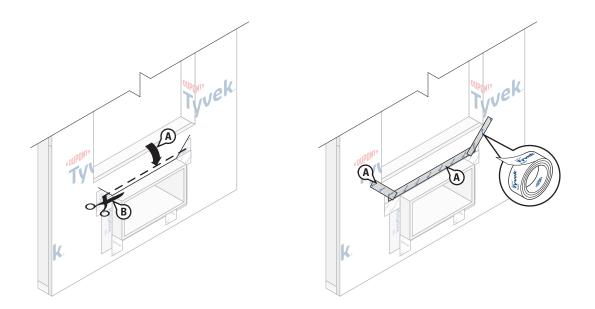
STEP 8

- A. Install the PTAC unit sleeve per manufacturer's instructions.
- B. Remove the remaining release paper from the **VersaFlange**[™] jamb flashing and press firmly to adhere the butyl adhesive to the **Tyvek**[®] **WRB**.
- C. Remove the release paper at the head and adhere the **VersaFlange**[™] to the wall surface.

NOTE: Do not reverse shingle. **VersaFlange**[™] must overlap **FlexWrap**[™] and adhere to the substrate.

D. OPTIONAL: Cover exposed butyl with DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], or DuPont[™] Tyvek[®] Tape.

Option 1 – PTAC Rough Opening Minimum 8" below Window Rough Opening

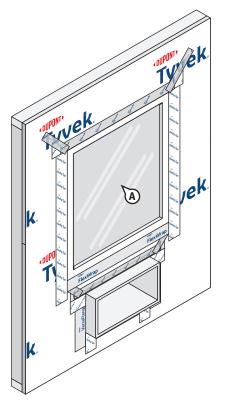


STEP 9

- A. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

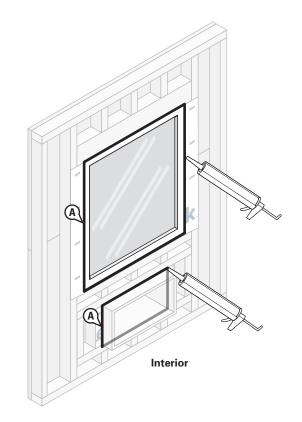
Option 1 - PTAC Rough Opening Minimum 8" below Window Rough Opening



STEP 10

A. Prepare window rough opening, install window according to manufacturer's instructions, and flash per the *Integral Flanged Window* details section in this guide.

NOTE: An integral flanged window is shown. If a non-flanged window is installed above the PTAC unit, follow the applicable section within this guide.



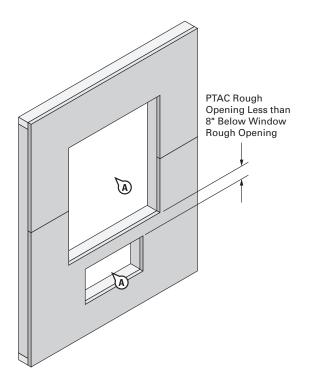
STEP 11

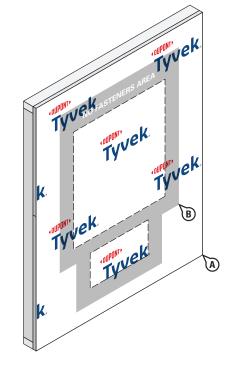
A. After window and PTAC unit are installed, apply recommended sealant (and backer rod as necessary) around both the window and PTAC openings at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

This method can be used to flash Packaged Terminal Air Conditioner (PTAC) Unit sleeves. Ensure **DuPont[™] VersaFlange[™]** logo side faces the exterior. Use of **DuPont[™] VersaFlange[™]** requires a smooth-framed PTAC sleeve for proper adhesion to the frame.

This method applies to the following products: DuPont[™] VersaFlange[™], DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], DuPont[™] FlexWrap[™], and DuPont[™] FlexWrap[™] EZ

Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening





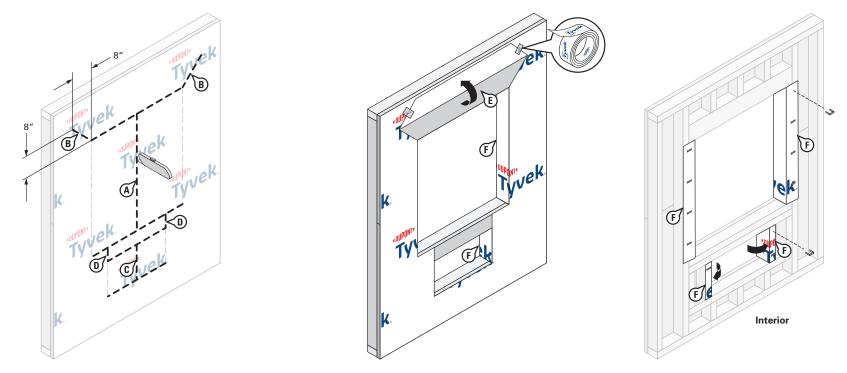
STEP 1

A. Cut rough opening in sheathing for window and PTAC. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

STEP 2

A. Wrap wall as shown in the <u>DuPont™ Tyvek® WRB Installation Instructions</u> section in this guide. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening



STEP 3

Prepare the Tyvek® WRB for Window and PTAC Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

A. Make an "I-Cut" in the **Tyvek**[®] **WRB** at the window rough opening per the <u>Integral</u> <u>Flanged Window</u> details in this guide. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.

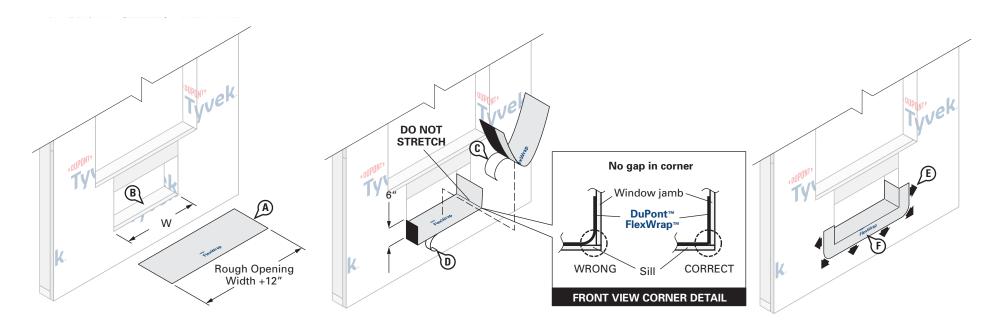
NOTE: An "I-Cut" for an integral flanged window is shown. If a non-flanged window is installed above the PTAC unit, follow the applicable section within this guide.

B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window head, up and away from the window opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation. Flip head flap up and temporarily secure with DuPont[™] Tyvek[®] Tape.

- C. Make an "I-Cut" in the Tyvek[®] WRB at the PTAC rough opening.
- D. Make two vertical cuts in the **Tyvek**[®] **WRB** above the PTAC rough opening to expose the sheathing in the area between the two rough openings. Cuts should align with jambs of the PTAC rough opening as shown.
- E. Flip head flap up and temporarily secure with Tyvek® Tape.
- F. Fold side flaps into rough openings of the window and the PTAC and secure to inside wall. Cut off excess flaps if desired.

ALTERNATE METHOD TO SECURE HEAD FLAPS: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening

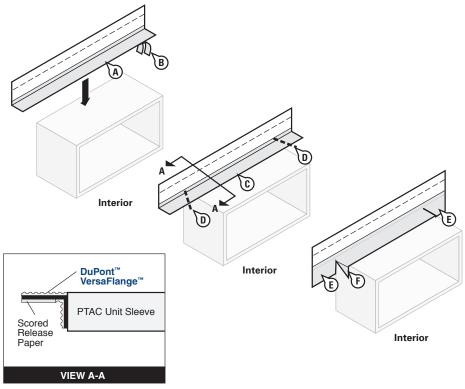


- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening (W). Use 6" **FlexWrap[™]** for 2" x 4" framing and 9" **FlexWrap[™]** for 2" x 6" framing.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.
- C. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- D. Remove narrow release paper.

- E. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.
- F. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.

Installation Methods for DuPont Self-Adhered Flashing Products Installed AFTER the DuPont[™] Tyvek[®] WRB Packaged Terminal Air Conditioner (PTAC) Unit (Using DuPont[™] VersaFlange[™])

Option 2 - PTAC Rough Opening Less than 8" below Window Rough Opening



Make sure the adhesive on these pieces will overlap. 1-1/2' Interior Interior

STEP 5

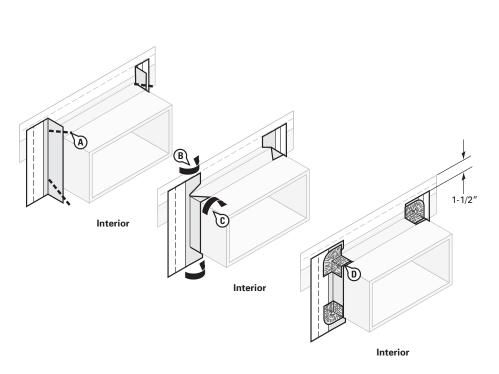
Prepare PTAC Unit Sleeve using DuPont[™] VersaFlange[™]

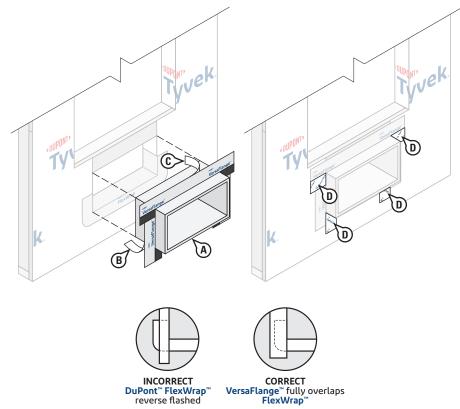
- A. Prepare head flashing by cutting a piece of VersaFlange[™] at least 12" LONGER than the head length.
- B. Remove the release paper from one side of the VersaFlange[™].
- C. Center the flashing along the length of the PTAC unit sleeve and position so that it contacts the PTAC unit sleeve. Use firm hand pressure or a j-roller to ensure proper adhesion to the sleeve
- D. Beginning at the junction of the jamb and head and away from the corners, cut the VersaFlange[™] at a 45° angle.
- E. Fold the newly created flashing flaps down parallel to the PTAC unit sleeve.
- F. Fold remaining head flashing flaps down onto the jamb.

- A. Prepare jamb flashing by cutting a piece of **VersaFlange**[™] at least 6" **LONGER** than the jamb length.
- B. Remove the release paper from one side of the VersaFlange[™].
- C. Position the VersaFlange[™] so that it contacts the PTAC unit sleeve up to the exterior face of the sleeve. Ensure that the jamb flashing is positioned 1-1/2 inches below top of the head flashing. Jamb flashing adhesive must come in contact with head flashing adhesive and overlap by one inch.
- D. Repeat on opposite jamb.

Installation Methods for DuPont Self-Adhered Flashing Products Installed **AFTER** the DuPont[™] Tyvek[®] WRB Packaged Terminal Air Conditioner (PTAC) Unit (Using DuPont[™] VersaFlange[™])

Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening





STEP 7

- A. Beginning at the junction of the jambs and the head, and away from the corners, cut the **DuPont[™] VersaFlange[™]** at a 45° angle. Repeat the procedure at the junction of the sill and jambs.
- B. In order to overlap jamb adhesive to the head flashing adhesive, temporarily pull back release liner on the head flashing. Fold cut jamb flashing parallel to the PTAC unit sleeve so that the jamb flashing lies flat onto the head flashing. Fold the head flashing release liner back down to protect any remaining exposed butyl along the head flashing prior to installation of the PTAC unit.
- C. Fold remaining jamb flashing flaps down at all corners and adhere to the PTAC unit sleeve.
- D. Cut four 3" x 3" pieces of **DuPont[™] FlexWrap[™]**, or four 3" pieces of **DuPont[™] FlexWrap[™] EZ**, and add patches to corners of the PTAC unit sleeve.

STEP 8

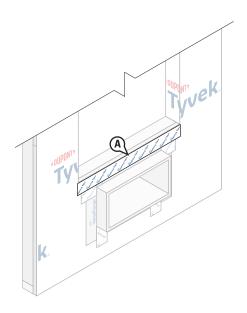
- A. Install the PTAC unit sleeve per manufacturer's instructions.
- B. Remove the remaining release paper from the **VersaFlange**[™] jamb flashing and press firmly to adhere the butyl adhesive to the **Tyvek**[®] **WRB**.
- C. Remove the release paper at the head and adhere the **VersaFlange**[™] to the wall surface.

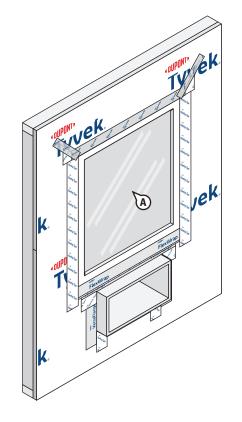
NOTE: Head piece of **VersaFlange**[™], if properly installed, will extend 4" to 4-1/2" above the PTAC rough opening. If the space between the two rough openings exceeds the width of the **VersaFlange**[™], some sheathing will remain exposed below the window sill. A separate piece of flashing will be installed per the next step to cover exposed sheathing. **Do not reverse shingle. VersaFlange**[™] **must overlap FlexWrap**[™] **and adhere to the substrate**.

D. OPTIONAL: Cover exposed butyl and exposed sheathing with DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], or DuPont[™] Tyvek[®] Tape.

Installation Methods for DuPont Self-Adhered Flashing Products Installed **AFTER** the DuPont[™] Tyvek[®] WRB Packaged Terminal Air Conditioner (PTAC) Unit (Using DuPont[™] VersaFlange[™])

Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening





STEP 9

Only required when DuPont[™] VersaFlange[™] head piece does not fully cover exposed sheathing between rough openings.

A. Cut a piece of DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] long enough to extend min. 2" BEYOND each end of VersaFlange[™] PTAC head flashing. Install the cut piece of flashing so top edge is flush with the window sill and is centered along the VersaFlange[™] PTAC head flashing.

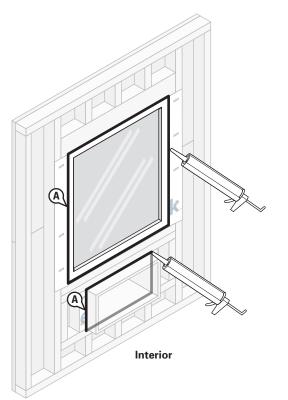
STEP 10

A. Prepare window rough opening, install window according to manufacturer's instructions, and flash per the *Integral Flanged Window* details section in this guide.

NOTE: An integral flanged window is shown. If a non-flanged window is installed above the PTAC unit, follow the applicable section within this guide.

Installation Methods for DuPont Self-Adhered Flashing Products Installed **AFTER** the DuPont[™] Tyvek[®] WRB Packaged Terminal Air Conditioner (PTAC) Unit (Using DuPont[™] VersaFlange[™])

Option 2 – PTAC Rough Opening Less than 8" below Window Rough Opening

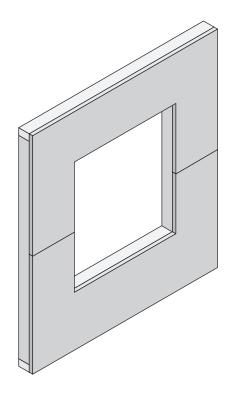


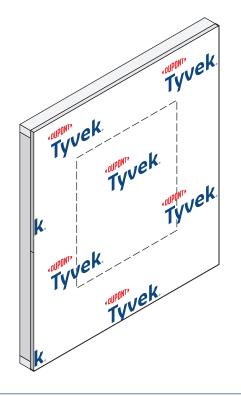
STEP 11

A. After window and PTAC unit are installed, apply recommended sealant (and backer rod as necessary) around both the window and PTAC openings at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

A mulled window is defined as a window unit with a nailing fin or flange formed from joining two or more units together at the frame. This method can be used for horizontal, vertical or combination mull windows. For windows with horizontal mulls only, the <u>Alternate Integral Flanged Window Detail Aligned with FMA/AAMA-100 Method A</u> is an alternative option. For windows with vertical mulls only, the <u>Non-Integral Flanged Window Detail</u> is an alternative option.

This method applies to following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



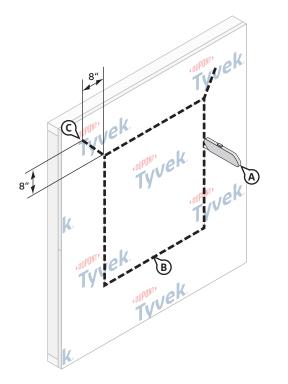


STEP 1

A. Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

STEP 2

A. Wrap wall as shown in the <u>DuPont[™] Tyvek[®] WRB Installation Instructions</u> section in this guide. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

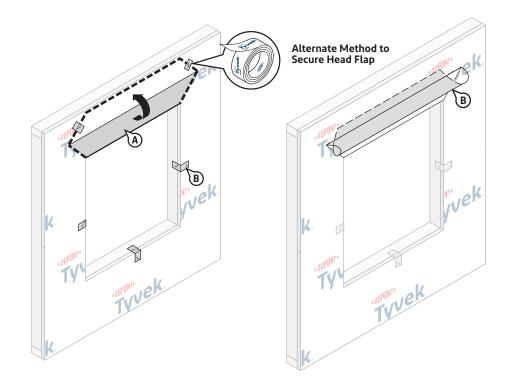


STEP 3

Prepare the Tyvek[®] WRB for Window Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

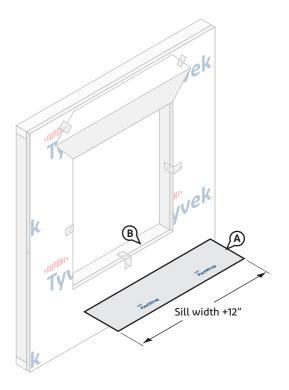
- A. Cut an opening in the **Tyvek**[®] **WRB** using a flush cut ("O-Cut") around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the Tyvek[®]
 WRB is cut flush with the sheathing and is not wrapped into the rough opening.)
- C. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.

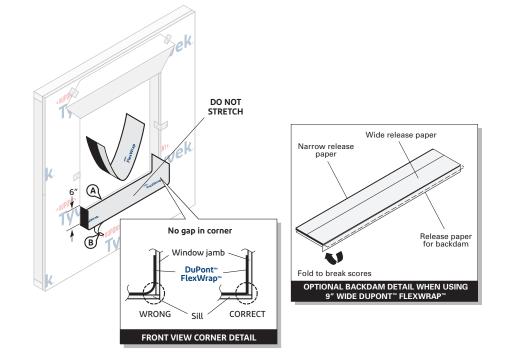


STEP 4

- A. Flip the head flap up to expose the sheathing and temporarily secure flap with tape.
- B. Temporarily secure the **Tyvek[®] WRB** with **DuPont[™] Tyvek[®] Tape** around rough opening before flashing is installed to help facilitate flashing installation.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.





STEP 5

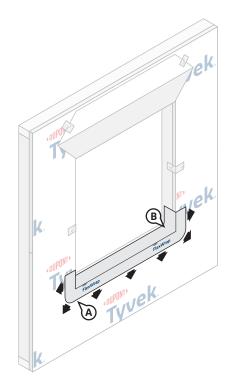
- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.

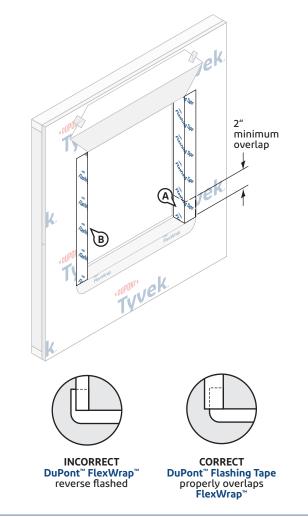
STEP 6

A. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.

OPTIONAL BACK DAM: Fold 9" **FlexWrap**[™] to break perforation. Remove center piece of release paper. Cover horizontal sill to accommodate back dam as appropriate, and adhere into rough opening along sill and up jambs (min 6" on each side). Leave 1" release paper on **FlexWrap[™]** inside rough opening to finish back dam after window installation.

B. Remove narrow release paper.

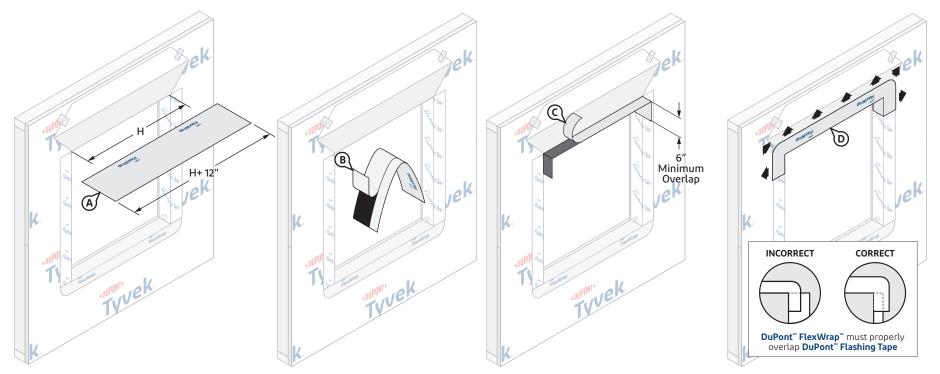




STEP 7

- A. Fan out the **DuPont[™] FlexWrap[™]** at corners and adhere onto face of wall. Continue adhering onto face of wall along sill. Coverage of **FlexWrap[™]** should be 2"- 3" onto the face of the wall.
- B. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.

- A. Cut the jamb flashing the vertical length of the rough opening. Jamb flashing should be long enough to overlap the sill flashing by at least 2" and be overlapped by future head flashing by at least 2". Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window will be located, ensuring minimum 2"- 3" adhesion onto the face of the wall.
- B. Wrap DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] into the rough opening at each jamb and onto wall face. The flashing should fully overlap the FlexWrap[™] on the wall and extend at least 1" BEYOND where the back of the window frame will be located.



STEP 9

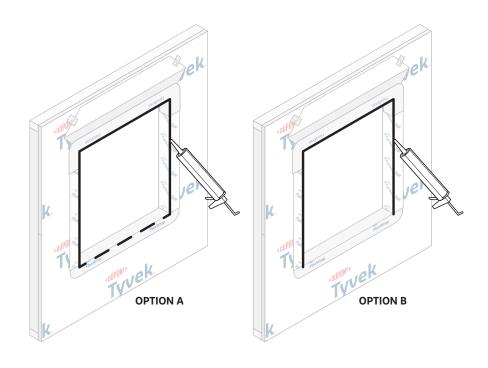
Install DuPont[™] FlexWrap[™] at Head

- A. Cut FlexWrap[™] at least 12" LONGER than width of rough opening head (H). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper, and repeat at opposite corner.
- C. Remove narrow release paper.
- D. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.

NOTE: For exterior gypsum sheathing, apply a recommended adhesive/primer to the exposed sheathing. An adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.

NOTE: DuPont[™] Tyvek[®] Certified Installers may install a 3-piece head (and sill) detail for window openings less than 6 ft. wide. For windows greater than 6 ft. wide, see the <u>Special</u> <u>Considerations</u> section for more information regarding the 3-piece head/sill detail. Contact your local DuPont Building Envelope Specialist for more information about the Certified Installer program.

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STEP 10

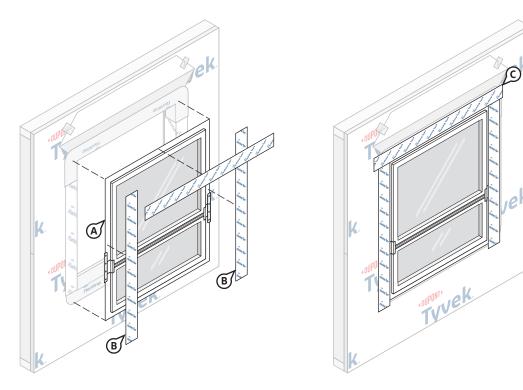
OPTION A: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. To allow for drainage, do not apply continuous sealant bead along sill. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from each corner of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.

OPTION B: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. To allow for drainage, do not apply sealant bead along sill.

STEP 11

A. Install window per manufacturer's installation instructions.

NOTE: Mulled windows may have components (metal gusset plates, clips, etc.) that differ slightly from the configuration and placement shown.

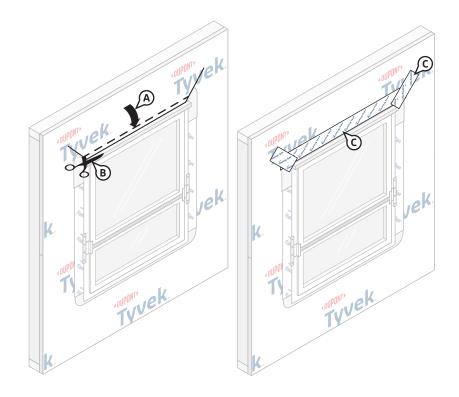


STEP 11 – ALTERNATE (WHEN FLASHING OVER FLANGES IS DESIRED/REQUIRED BY WINDOW MANUFACTURER)

- A. Install window according to manufacturer's instructions.
- B. Cut two pieces of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** for jamb flashing extending 1" above window head flange and below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame

OPTIONAL: If installing a drip cap as part of the window installation before the **DuPont Self-Adhered Flashing** membrane at the window head flange, see <u>Drip Cap</u> <u>Installation</u> section and refer to <u>Option 1</u>. **NOTE**: The vertical leg of the drip cap must not be taller than the window head flange when installing drip cap according to <u>Option 1</u>. C. Cut a piece of **DuPont[™] Flashing Tape** or **StraightFlash[™]** for head flashing long enough to extend **BEYOND** the edges of jamb flashings. Remove release paper and install completely covering flange and adhering to exposed sheathing or framing members. **OPTIONAL**: If installing a drip cap as part of the window installation, but after the window head flashing, see *Drip Cap Installation* section and refer to Option 2.

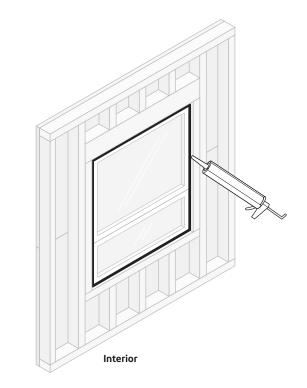
NOTE: Ensure proper shingling. **DuPont[™] Flashing Tape** or **StraightFlash[™]** at jambs must overlap the **DuPont[™] FlexWrap[™]** at the sill and adhere to the **Tyvek[®] WRB** below the sill.



STEP 12

- A. Flip down upper flap of Tyvek[®] WRB so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™].

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the *Applicable Structures and Performance Criteria* section for more information on air barrier requirements and head flap terminations.

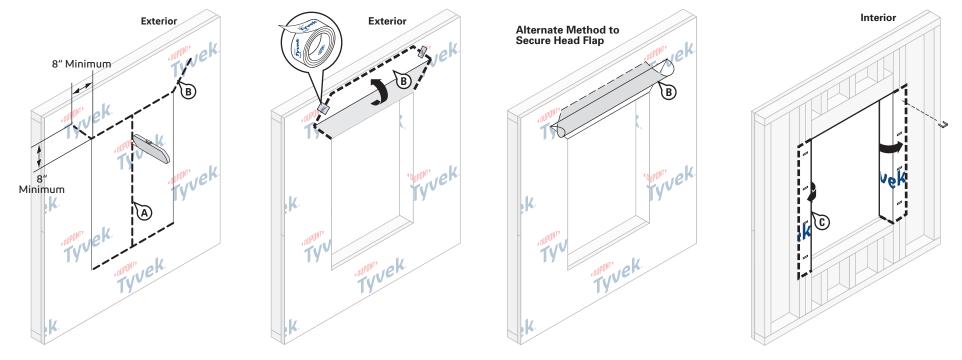


STEP 13

A. Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

A non-integral flanged window is defined as a window unit with a nailing fin or flange that is **NOT** continuous around the perimeter of the window or the fins/flanges are not a direct extrusion of the frame (e.g. field applied flanges). This method can be used for a variety of non-integral flanged window types and for windows with vertical mulls. This method can also be used for integral flanged units when additional protection is desired at the head of the rough opening prior to window/door installation.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



STEP 1

Prepare the Tyvek® WRB for Window Installation

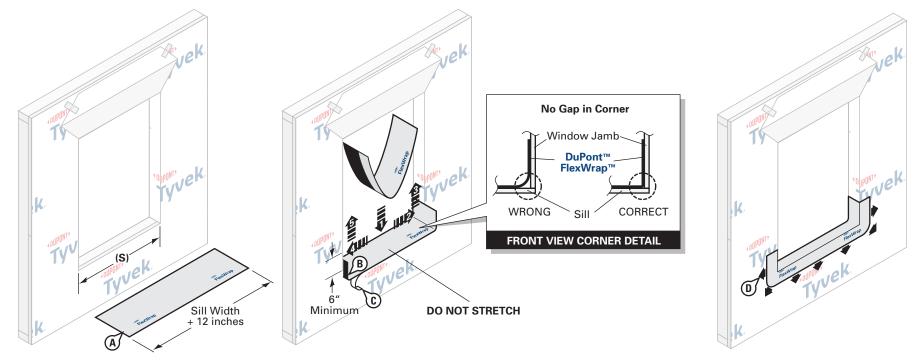
OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the **Tyvek**[®] **WRB**. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening (for round top windows, the top cut should follow the curve of the opening). Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window head, up and away from the window opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation (see <u>STEP 8</u>). Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

NOTE: Some windows and flashing widths may require longer slits.

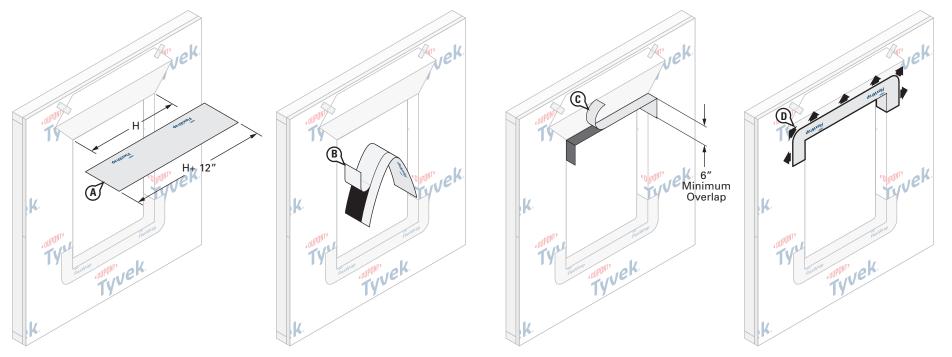
C. Fold side flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.



STEP 2

Install FlexWrap[™] at Sill

- A. Cut FlexWrap[™] at least 12" LONGER than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- C. Remove narrow release paper.
- D. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.



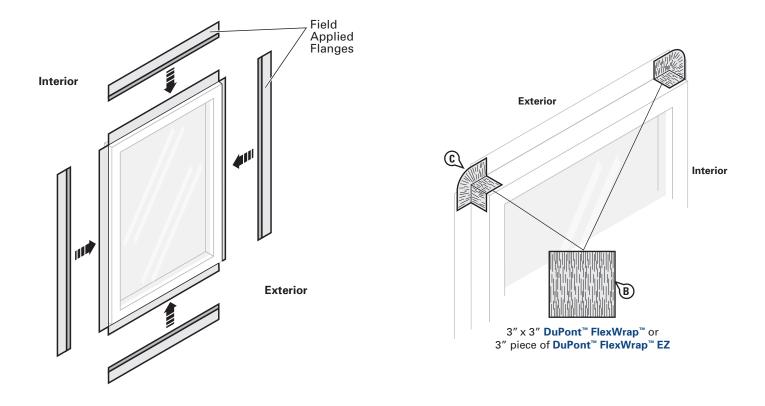
STEP 3

Install DuPont[™] FlexWrap[™] at Head

- A. Cut FlexWrap[™] at least 12" LONGER than width of rough opening head (H). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper, and repeat at opposite corner.
- C. Remove narrow release paper.
- D. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.

NOTE: For exterior gypsum sheathing, apply a recommended adhesive/primer to the exposed sheathing. An adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.

NOTE: DuPont[™] Tyvek[®] Certified Installers may install a 3-piece head (and sill) detail for window openings less than 6 ft. wide. For windows greater than 6 ft. wide, see the <u>Special</u> <u>Considerations</u> section for more information regarding the 3-piece head/sill detail. Contact your local DuPont Building Envelope Specialist for more information about the Certified Installer program.



STEP 4

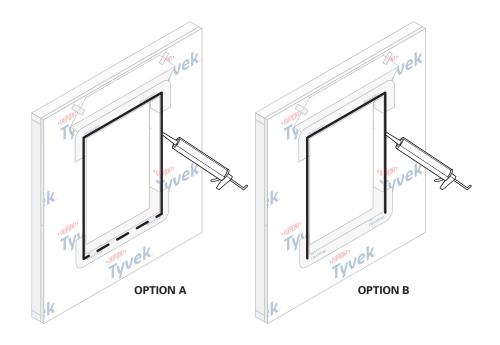
Prepare Window Unit for Installation

- A. If applicable, attach window unit nailing fins/flanges per manufacturer's instructions. Ensure nailing fin/flanges are properly positioned, shingled (if applicable), and are free of any dirt and/or debris.
- B. Cut a 3" x 3" piece of **DuPont[™] FlexWrap[™]** or a 3" piece of **DuPont[™] FlexWrap[™] EZ**.
- C. Apply **FlexWrap[™]** or **FlexWrap[™] EZ** patches to back of flange corners.

NOTE: Some non-integral flanged units may have components such as sealant at joints that could impact the adhesion of the jamb and head flashing in future steps. DuPont recommends minimizing the use of sealants or other components that could impact the adhesion of **DuPont Self-Adhered Flashing Products**.

NOTE: Some non-integral flanged windows may include corner gussets/gaskets from the manufacturer. If gussets/gaskets are supplied, install per manufacturer's instructions. If gussets are supplied by the manufacturer, the use of FlexWrap[™] or FlexWrap[™] EZ patches shown in Steps B. and C. above are optional, but recommended. The installation of gussets/gaskets is shown in <u>STEP 7</u>.

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STEP 5

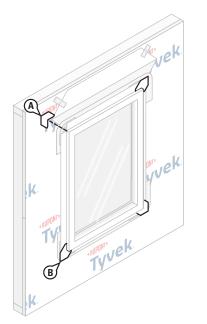
OPTION A: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. To allow for drainage, do not apply continuous sealant bead along sill. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from each corner of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.

OPTION B: Apply continuous bead of Tower[®] Residential Sealant, or recommended sealant, at window head and jambs to wall or back side of window mounting flange. To allow for drainage, do not apply sealant bead along sill.

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STEP 6

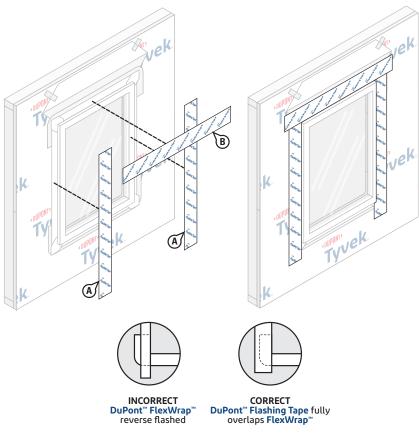
A. Install window according to manufacturer's instructions.



STEP 7

Install Corner Gusset/Gaskets (where applicable)

- A. If corner gusset/gaskets were provided by the window manufacturer, apply in accordance with window manufacturer's instructions. **NOTE**: Some window manufacturers may pre-apply the corner gussets/gaskets.
- B. Ensure corner gusset/gasket pieces are completely adhered at window corner.

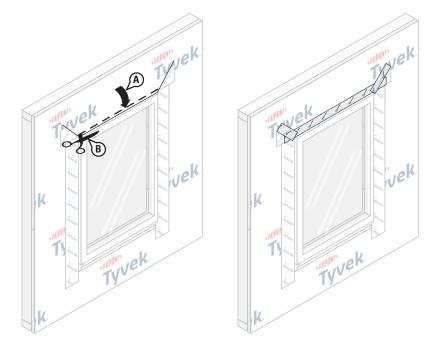


STEP 8

Prepare and Install Jamb and Head Flashing

- A. Cut two pieces of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** for jamb flashing extending 1" above window head flange and below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame. **OPTIONAL**: If installing a drip cap as part of the window installation before the DuPont Self-Adhered Flashing membrane at the window head flange, see <u>Drip Cap</u> <u>Installation</u> section and refer to <u>Option 1</u>. **NOTE**: The vertical leg of the drip cap must not be taller than the window head flange when installing drip cap according to <u>Option 1</u>.
- B. Cut a piece of DuPont[™] Flashing Tape or StraightFlash[™] for head flashing long enough to extend BEYOND the edges of jamb flashings. Remove release paper and install completely covering flange and adhering to exposed sheathing or framing members. OPTIONAL: If installing a drip cap as part of the window installation, but after the window head flashing, see Drip Cap Installation section and refer to Option 2.

NOTE: Ensure proper shingling. **DuPont[™] Flashing Tape** or **StraightFlash[™]** at jambs must overlap the **DuPont[™] FlexWrap[™]** at the sill and adhere to the **Tyvek[®] WRB** below the sill.



STEP 9

- A. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- B. Cut a 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.

STEP 10

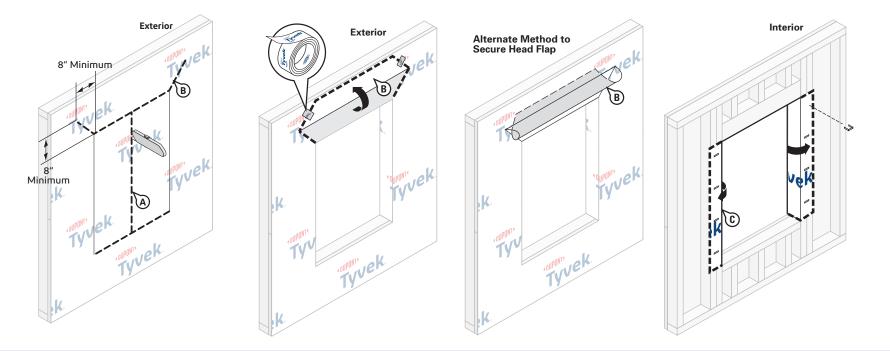
Final Step

Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont[™] FlexWrap[™]** around the sill. When using **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro[™] Dispensing Gun** during installation.

Interior

Ensure **DuPont[™] VersaFlange[™]** logo side faces the exterior. **This method may also be used for non-integral flanged windows.** Windows that have a nailing fin or flange that is **not continuous around the perimeter** of the window or the fin/flange is **not a direct extrusion of the frame** (e.g. field-applied flanges) is considered a **non-integral flanged unit**. **Use of VersaFlange[™] requires a smooth-framed window for proper adhesion to the frame**.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], DuPont[™] VersaFlange[™], DuPont[™] FlexWrap[™], and DuPont[™] FlexWrap[™] EZ



STEP 1

Prepare the Tyvek® WRB for Window Installation

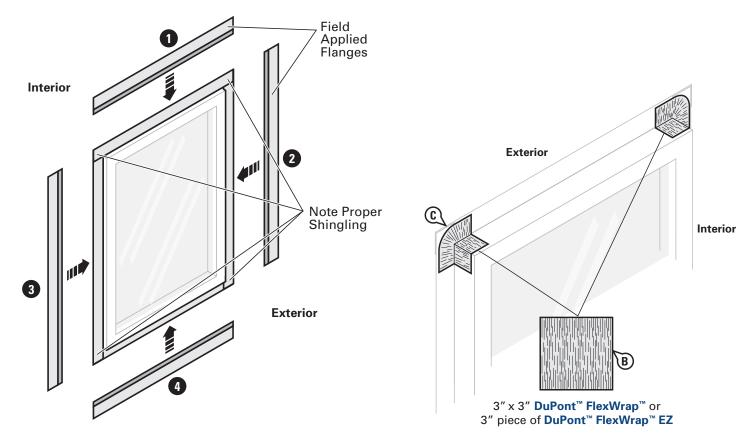
OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the **Tyvek**[®] **WRB**. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window head, up and away from the window opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation. Flip head flap up and temporarily secure with DuPont[™] Tyvek[®] Tape.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

NOTE: Some windows and flashing widths may require longer slits.

C. Fold side flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.

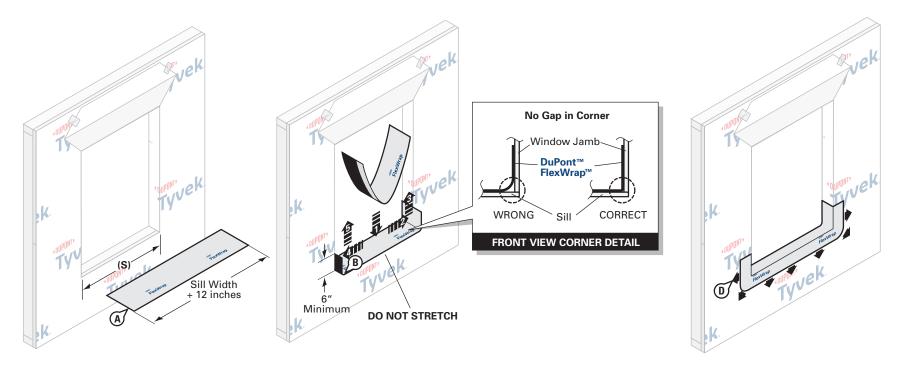


STEP 2

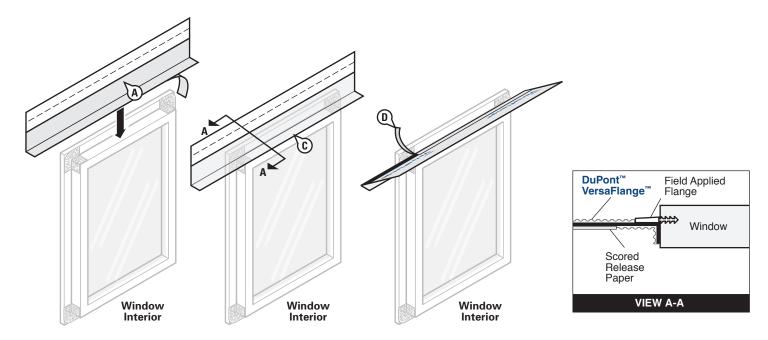
A. Apply field applied flanges in the correct shingling fashion per manufacturer's installation instructions.

DO NOT REVERSE SHINGLE.

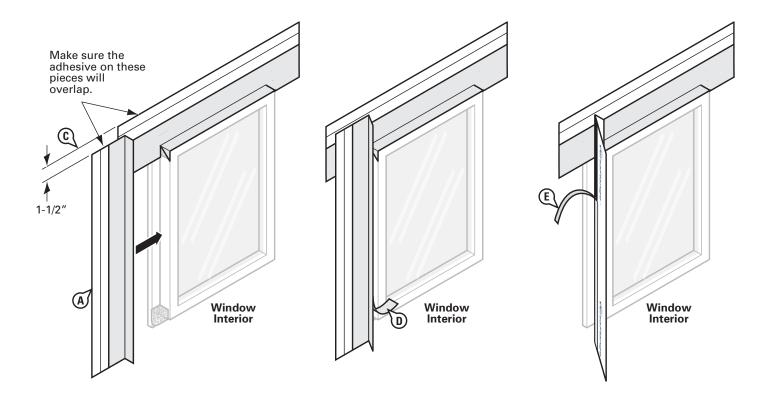
- B. Cut a 3" x 3" piece of **DuPont[™] FlexWrap[™]** or a 3" piece of **DuPont[™] FlexWrap[™] EZ**.
- C. Apply FlexWrap[™] or FlexWrap[™] EZ patches to back of flange corners before applying DuPont[™] VersaFlange[™].



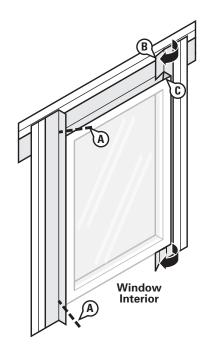
- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- C. Remove narrow release paper.
- D. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.

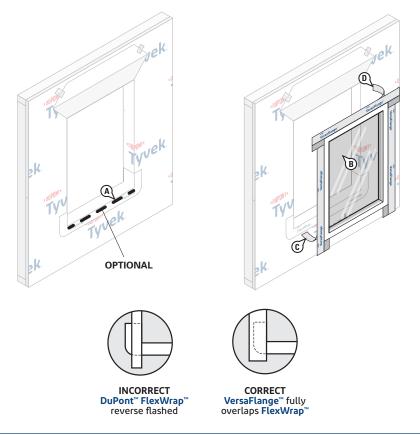


- A. Prepare head flashing by cutting a piece of DuPont[™] VersaFlange[™] at least 12"
 LONGER than the head length.
- B. Break the scored release paper on one side of the head flashing by folding it back and forth upon itself.
- C. Center the **VersaFlange**[™] on the window head and position so that it contacts the window frame and interior side of the flange. Remove the outer release paper and adhere the flashing to the window frame. Use the inner release paper to form a tight seal in the corner.
- D. Remove the inner release paper and adhere the flashing to the back of the flange.
- E. Beginning at the junction of the jamb and head, and away from the corner, cut the VersaFlange[™] at a 45° angle.
- F. Fold the newly created flashing flap down flat against the flange.
- G. Fold remaining head flashing flaps down onto the jamb frame.



- A. Prepare jamb flashing by cutting a piece of DuPont[™] VersaFlange[™] at least 6"
 LONGER than the jamb.
- B. Break the scored release paper on one side of the jamb flashing by folding it back and forth upon itself.
- C. Position so that VersaFlange[™] contacts the window frame and interior side of the brick mold or flange. Ensure that the jamb flashing is positioned 1-1/2 inch below the top edge of the head flashing. Jamb flashing adhesive must come in contact with head flashing adhesive and overlap by one inch.
- D. Remove the outer release paper and adhere the flashing to the window frame. Use the inner release paper to form a tight seal in the corner.
- E. Remove the inner release paper and adhere the flashing to the back of the flange.
- F. Repeat on opposite jamb.

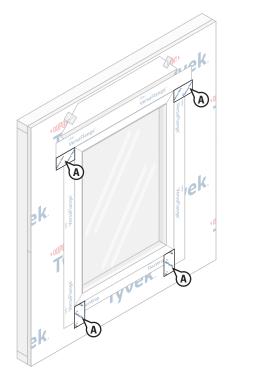


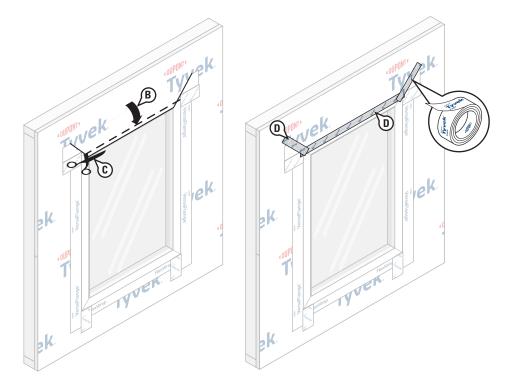


STEP 6

- A. Beginning at the junction of the jamb and head, and away from the corner, cut the DuPont[™] VersaFlange[™] at a 45° angle. Repeat this procedure at the junction of the sill and jamb.
- B. In order to overlap jamb adhesive to the head flashing adhesive, temporarily pull back release liner on the head flashing. Fold cut jamb flashing parallel to the window frame so that the jamb flashing lies flat onto the head flashing. Fold the head flashing release liner back down to protect any remaining exposed butyl along the head flashing prior to installation of the window.
- C. Fold the remaining flaps down at corner and adhere to the window frame.

- A. **OPTIONAL**: Apply Tower[®] Residential Sealant, or recommended sealant, along the sill as shown above. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.
- B. Install the window per manufacturer's instructions.
- C. Remove the remaining release paper from the VersaFlange[™] jamb flashing and press firmly to adhere the butyl adhesive to the Tyvek[®] WRB. Do not reverse shingle. VersaFlange[™] must overlap DuPont[™] FlexWrap[™] and adhere to the substrate.
- D. Remove the release paper at the head and adhere the **VersaFlange**[™] to the wall surface.



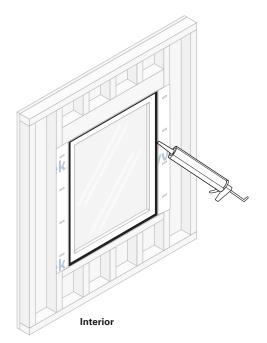


STEP 8

- A. OPTIONAL: Cover exposed butyl with DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], or DuPont[™] Tyvek[®] Tape. OPTIONAL: If installing a drip cap as part of the door installation BEFORE the Tyvek[®] WRB head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 2</u>.
- B. Flip down upper flap of Tyvek[®] WRB so it lays flat across head flashing.
- C. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- D. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with **Tyvek[®] Tape**, **DuPont[™] Flashing Tape**, or **StraightFlash[™]**. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable **if an air barrier is not required**.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.



STEP 9

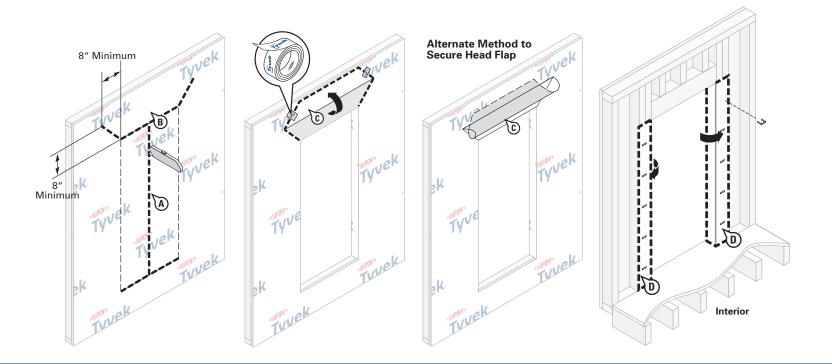
Final Step

Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont[™] FlexWrap[™]** around the sill. When using **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro[™] Dispensing Gun** during installation.

This Installation Guide is intended for doors installed above grade and/or with wood floor construction.

This method may also be used for non-integral flanged doors. Doors that have a nailing fin or flange that is **not continuous around the perimeter** of the door or the fin/flange is **not a direct extrusion of the frame** (e.g. field-applied flanges) is considered a **non-integral flanged unit**. Use of **DuPont[™] VersaFlange[™]** requires a smooth-framed door for proper adhesion to the frame.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], DuPont[™] VersaFlange[™], DuPont[™] FlexWrap[™], and DuPont[™] FlexWrap[™] EZ



STEP 1

Prepare the Tyvek® WRB for Door Installation

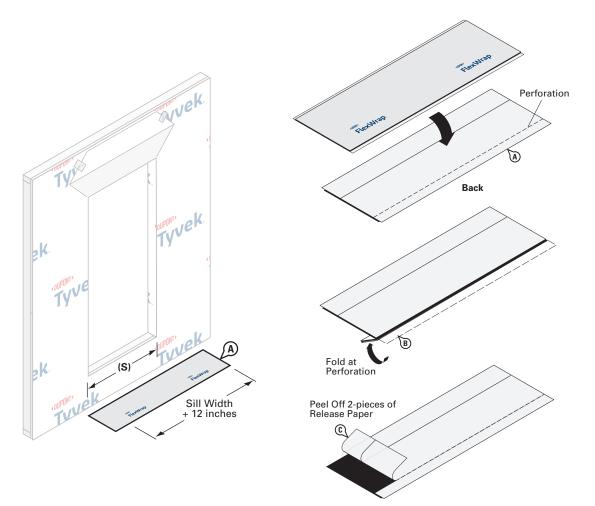
OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the **Tyvek**[®] **WRB**. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the door head, up and away from door opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation (see <u>STEP 8</u>). **NOTE**: Some doors and flashing widths may require longer slits.

C. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

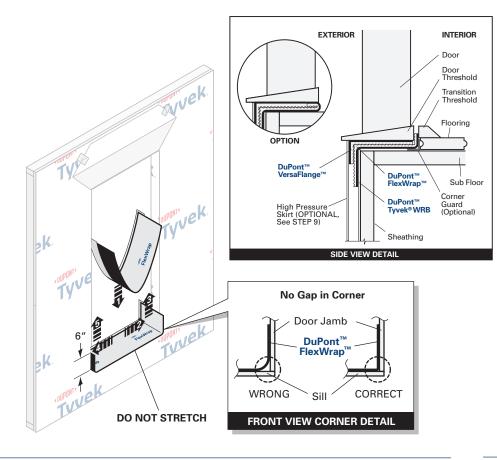
D. Fold side flaps into rough opening, and secure to inside wall framing. Cut off excess flaps if desired.

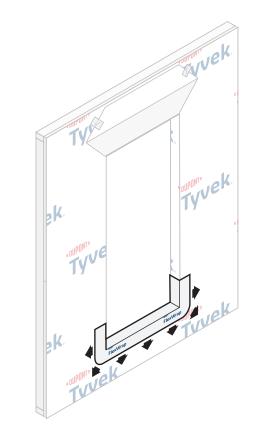


STEP 2

Preparation of Sill Flashing

- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of the sill (S).
- B. 9" FlexWrap[™] has perforated release paper to help with the formation of the back dam (see <u>STEP 10</u>). To ensure that the perforation tears cleanly, fold the perforation 180° and crease the flashing.
- C. Remove the two widest pieces of release paper leaving the narrowest release paper on the flashing. When the finished floor is applied, the release paper can be removed and the back dam can be completed.





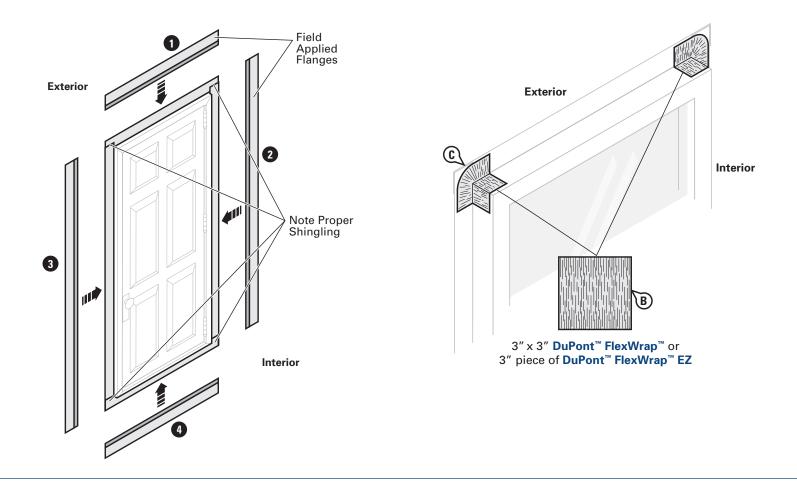
STEP 3

Position the sill flashing as indicated so the section with the release paper still attached extends past the door threshold on the inside. Ensure that 2"-3" of the **DuPont[™] FlexWrap[™]** will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening. When the narrow release paper is removed, the remaining section of **FlexWrap[™]** can be used to form a back dam (see <u>STEP 10</u>).

OPTIONAL: **Create back dam by folding back narrow section of FlexWrap**[™]: Some flooring cannot accomodate a back dam. In that case fold the back dam on top of **FlexWrap**[™] in the sill. The door will be installed on top of the fold to create a back dam (see Side View Detail above).

STEP 4

Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.

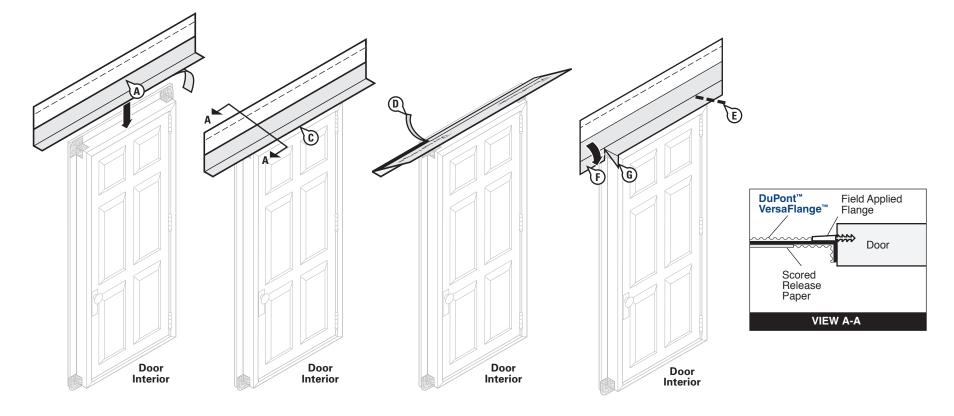


STEP 5

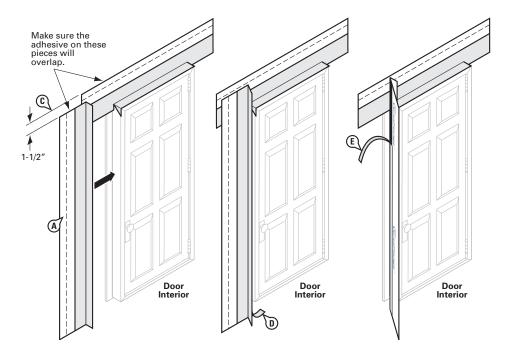
A. Apply field applied flanges in the correct shingling fashion as per manufacturer's installation instructions.

DO NOT REVERSE SHINGLE.

- B. Cut a 3" x 3" piece of **DuPont[™] FlexWrap[™]** or a 3" piece of **DuPont[™] FlexWrap[™] EZ**.
- C. Apply FlexWrap[™] or FlexWrap[™] EZ patches to back of flange corners before applying DuPont[™] VersaFlange[™].

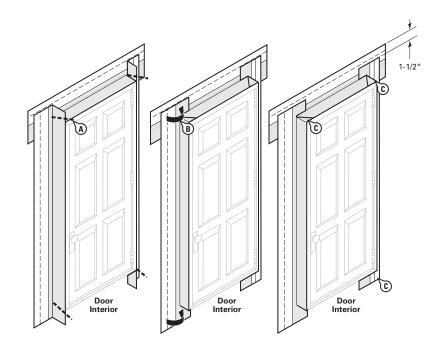


- A. Prepare head flashing by cutting a piece of DuPont[™] VersaFlange[™] at least 12"
 LONGER than the head length.
- B. Break the scored release paper on one edge of the head flashing by folding it back and forth upon itself.
- C. Center the VersaFlange[™] along the length of the door head and position so that it contacts the door frame and interior side of the flange. Remove the outer release paper and adhere the flashing to the door frame. Use the inner release paper to form a tight seal in the corner.
- D. Remove the inner release paper strip and adhere the flashing to the back of the flange.
- E. Beginning at the junction of the jamb and head, and away from the corner, cut the VersaFlange[™] at a 45° angle.
- F. Fold the newly created flashing flaps down flat against the flange.
- G. Fold remaining head flashing flaps down onto the jamb frame.

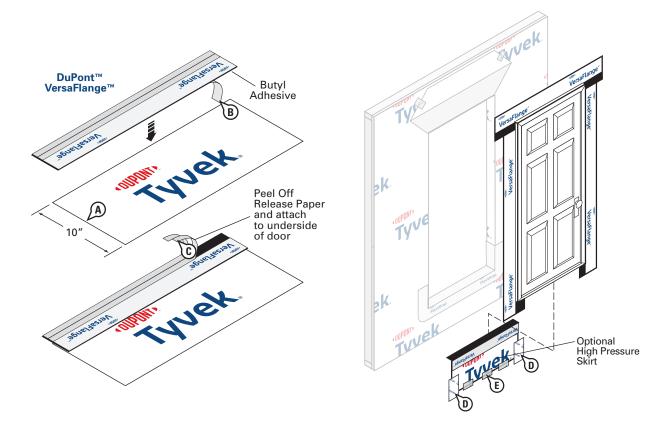


STEP 7

- A. Prepare jamb flashing by cutting a piece of DuPont[™] VersaFlange[™] at least 6"
 LONGER than the jamb.
- B. Break the scored release paper on one side of the jamb flashing by folding it back and forth upon itself.
- C. Position so that the VersaFlange[™] contacts the door frame and interior side of the flange. Ensure that the jamb flashing is positioned 1-1/2 inch below the top edge of the head flashing. Jamb flashing adhesive must come in contact with head flashing adhesive by one inch.
- D. Remove the outer release paper and adhere the flashing to the door frame. Use the inner release paper to form a tight seal in the corner.
- E. Remove the inner release paper and adhere the flashing to the back of the flange.
- F. Repeat on opposite jamb.



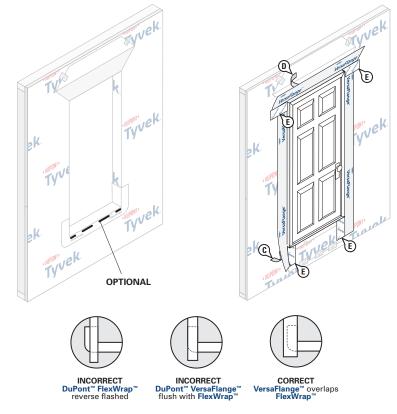
- A. Beginning at the junction of the jamb and head, and away from the corner, cut the VersaFlange[™] at a 45° angle. Repeat the procedure at the junction of the sill and jamb.
- B. In order to overlap jamb adhesive to the head flashing adhesive, temporarily pull back release liner on the head flashing. Fold cut jamb flashing parallel to the door frame so that the jamb flashing lies flat onto the head flashing. Fold the head flashing release liner back down to protect any remaining exposed butyl along the head flashing prior to installation of the door.
- C. Fold remaining jamb flashing flaps down at all corners and adhere to the door frame.



STEP 9 (OPTIONAL) - HIGH PRESSURE SKIRT

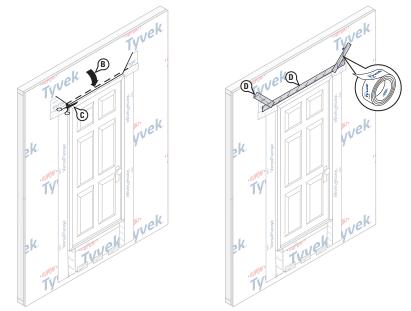
For extreme/coastal exposures, installation of a high-pressure skirt is recommended to help prevent water intrusion at the sill or threshold.

- A. Create the high pressure skirt by cutting a piece of **Tyvek[®] WRB** 1" **WIDER** than the width of door opening and approximately 10" in height.
- B. Cut a piece of DuPont[™] VersaFlange[™] to the same width of skirt. Remove release paper from one side of the VersaFlange[™] and adhere to Tyvek[®] WRB. The skirt may be made with either VersaFlange[™], DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™].
- C. Remove the release paper from the other side of the **VersaFlange**[™] and adhere the butyl adhesive at the sill skirt to the underside of the door threshold behind the jamb flashing.
- D. After installation of door in Step 10, secure edges of the optional skirt with two 4" pieces of **DuPont[™] Flashing Tape** or **StraightFlash[™]**.
- E. Tape the bottom of the optional skirt to allow for drainage and to minimize wind damage during construction.



STEP 10

- A. **OPTIONAL**: Apply Tower[®] Residential Sealant, or recommended sealant, along the sill as shown above. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.
- B. Install door according to manufacturer's installation instructions.
- C. Remove the remaining release paper from the DuPont[™] VersaFlange[™] jamb flashing and press firmly to adhere the butyl adhesive to the Tyvek[®] WRB. Do not reverse shingle. VersaFlange[™] must overlap DuPont[™] FlexWrap[™] and adhere to the substrate.
- D. Remove the release paper at the head and adhere the **VersaFlange**[™] to the wall surface.
- E. OPTIONAL: Cover exposed butyl with DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™]

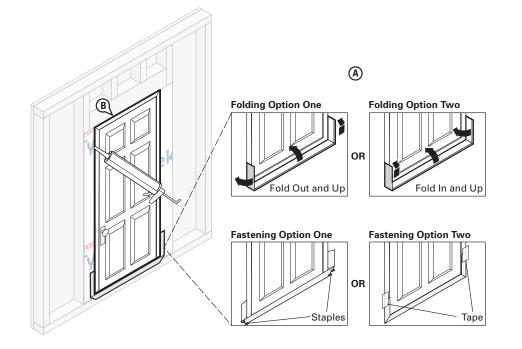


STEP 11

- A. OPTIONAL: If installing a drip cap as part of the door installation BEFORE the Tyvek[®] WRB head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 2</u>.
- B. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- C. Cut 1"- 2" strip of the **Tyvek[®] WRB** at lower horizontal edge of the head flap. **NOTE**: Skip this step if the head flap was trimmed while preparing the **Tyvek[®] WRB** per the <u>Alternative Installation Considerations</u> section.
- D. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with **DuPont[™] Tyvek[®] Tape**, **DuPont[™] Flashing Tape**, or **StraightFlash[™]**. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of door is acceptable **if an air barrier is not required**.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.

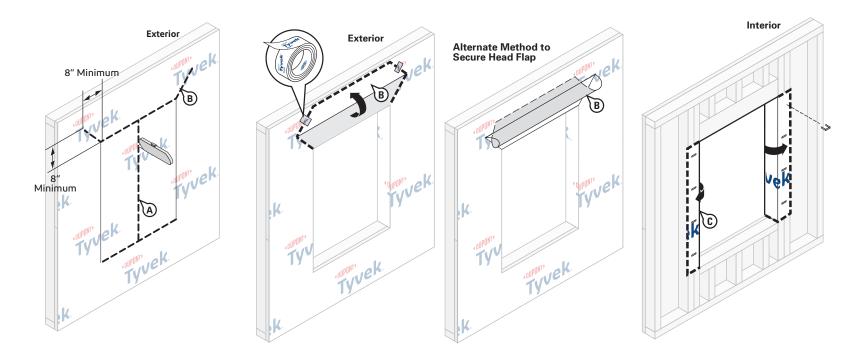


STEP 12

Final Step

- A. When the interior flooring is ready to install, remove release paper and use Folding Option One or Two (shown above) to form back dam.
- B. Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the door opening at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], DuPont[™] VersaFlange[™], and DuPont[™] FlexWrap[™]



STEP 1

Prepare Tyvek® WRB for Window Installation

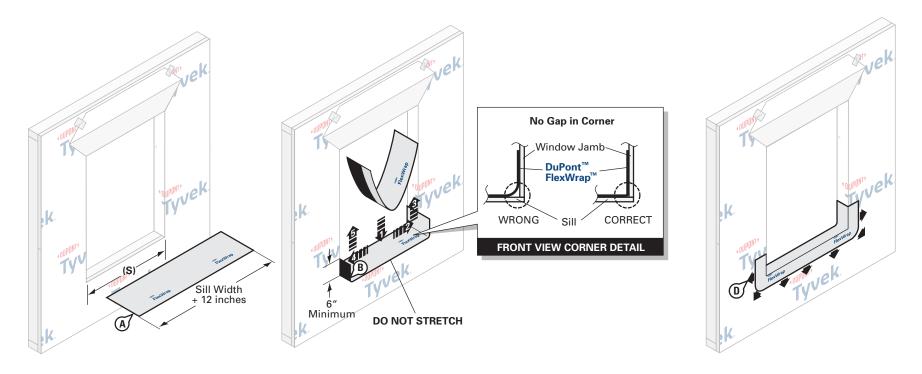
OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the **Tyvek**[®] **WRB**. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window head, up and away from the window opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

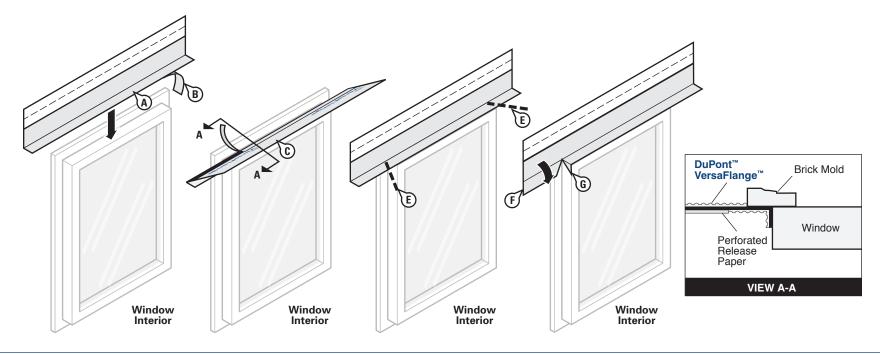
ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

NOTE: Some windows and flashing widths may require longer slits.

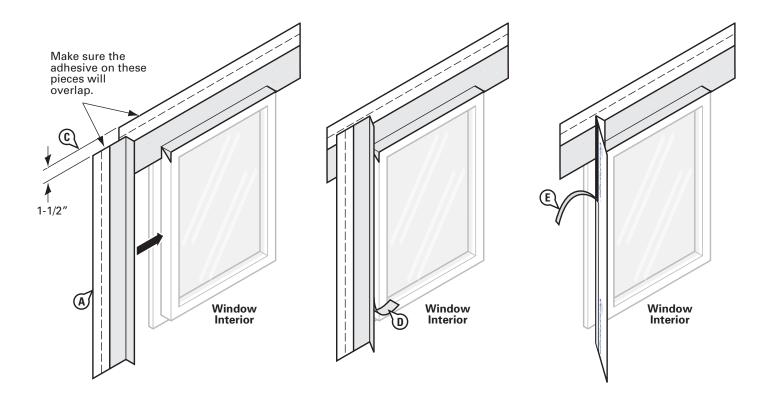
C. Fold side flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.



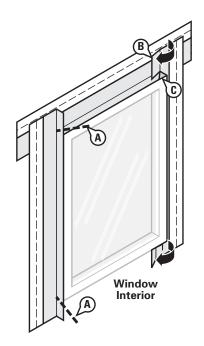
- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- C. Remove narrow release paper.
- D. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.

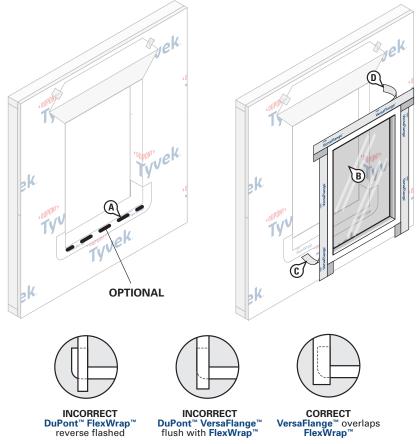


- A. Prepare head flashing by cutting a piece of DuPont[™] VersaFlange[™] at least 12"
 LONGER than the head length.
- B. Break the scored release paper on one side of the head flashing by folding it back and forth upon itself.
- C. Center the **VersaFlange**[™] on the window head and position so that it contacts the window frame and interior side of the brick mold. Remove the outer release paper and adhere the flashing to the window frame. Use the inner release paper to form a tight seal in the corner.
- D. Remove the inner release paper and adhere the flashing to the back of the brick mold.
- E. Beginning at the junction of the jamb and head, and away from the corner, cut the VersaFlange[™] at a 45° angle.
- F. Fold the newly created flashing flap down flat against the brick mold.
- G. Fold remaining head flashing flaps down and adhere to the jamb frame.



- A. Prepare jamb flashing by cutting a piece of DuPont[™] VersaFlange[™] at least 6"
 LONGER than the jamb.
- B. Break the scored release paper on one side of the jamb flashing by folding it back and forth upon itself.
- C. Position so that the VersaFlange[™] contacts the window frame and interior side of the brick mold. Ensure that the jamb flashing is positioned 1-1/2 inch below the top edge of the head flashing. Jamb flashing adhesive must come in contact with head flashing adhesive and overlap by one-inch.
- D. Remove the outer release paper and adhere the flashing to the window frame. Use the inner release paper to form a tight seal in the corner.
- E. Remove the inner release paper and adhere the flashing to the back of the brick mold.
- F. Repeat on opposite jamb.

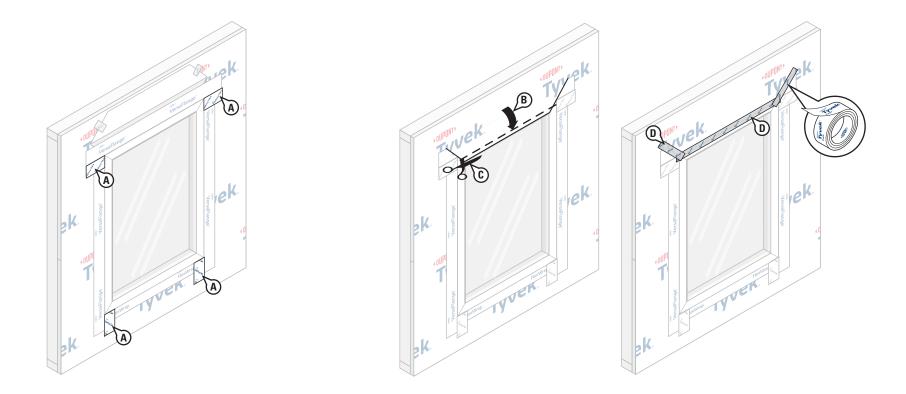




STEP 5

- A. Beginning at the junction of the jamb and head, and away from the corner, cut the DuPont[™] VersaFlange[™] at a 45° angle. Repeat this procedure at the junction of the sill and jamb.
- B. In order to overlap jamb adhesive to the head flashing adhesive, temporarily pull back release liner on the head flashing. Fold cut jamb flashing parallel to the window frame so that the jamb flashing lies flat onto the head flashing. Fold the head flashing release liner back down to protect any remaining exposed butyl along the head flashing prior to installation of the window.
- C. Fold the newly created jamb flashing flaps down at all corners and adhere to the window frame.

- A. **OPTIONAL**: Apply Tower[®] Residential Sealant, or recommended sealant, along the sill as shown above. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.
- B. Install the window per manufacturer's instructions.
- C. Remove the remaining release paper from the VersaFlange[™] jamb flashing and press firmly to adhere the butyl adhesive to the Tyvek[®] WRB. Do not reverse shingle. VersaFlange[™] must overlap DuPont[™] FlexWrap[™] and adhere to the substrate.
- D. Remove the release paper at the head and adhere the **VersaFlange**[™] to the wall surface.



STEP 7

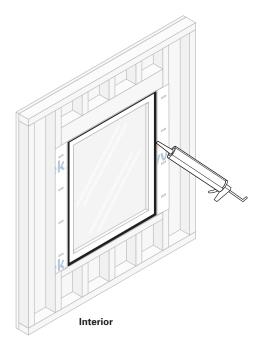
A. OPTIONAL: Cover exposed butyl with DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], or DuPont[™] Tyvek[®] Tape.

OPTIONAL: If installing a drip cap as part of the window installation **BEFORE** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 2</u>.

- B. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- C. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap. NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- D. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with **Tyvek[®] Tape**, **DuPont[™] Flashing Tape**, or **StraightFlash[™]**. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable **if an air barrier is not required**.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.



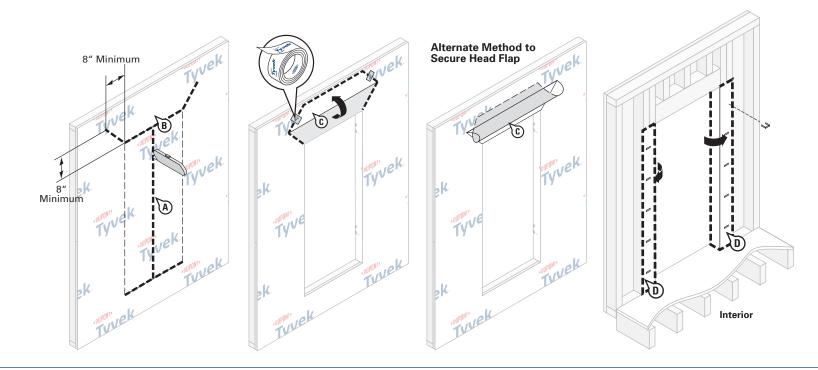
STEP 8

Final Step

Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont™ FlexWrap™** around the sill. When using **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro™ Dispensing Gun** during installation.

This installation guide is intended for doors installed above grade and/or with wood floor construction.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], DuPont[™] VersaFlange[™], and DuPont[™] FlexWrap[™]



STEP 1

Prepare the Tyvek® WRB for Door Installation

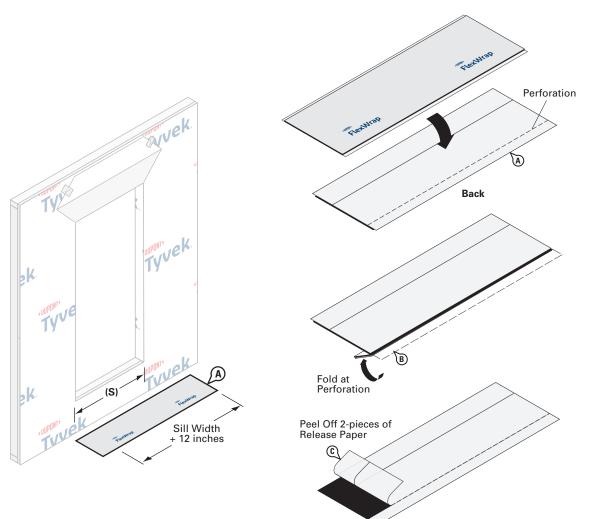
OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the **Tyvek**[®] **WRB**. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the door head, up and away from door opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation (see <u>STEP 8</u>). **NOTE**: Some doors and flashing widths may require longer slits.

C. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

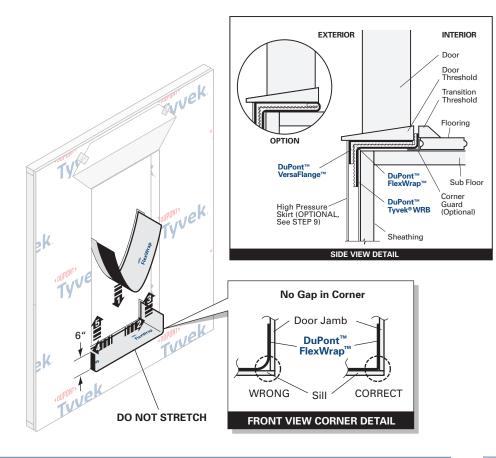
D. Fold side flaps into rough opening, and secure to inside wall framing. Cut off excess flaps if desired.

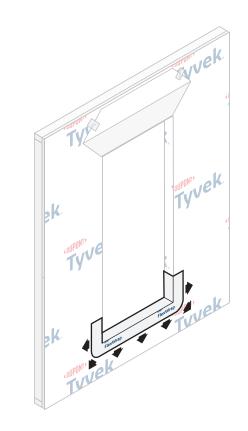


STEP 2

Preparation of Sill Flashing

- A. Cut 9" **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of the sill (S).
- B. 9" FlexWrap[™] has perforated release paper to help with the formation of the back back dam (see <u>STEP 9</u>). To ensure that the perforation tears cleanly, fold the perforation 180° and crease the flashing.
- C. Remove the two widest pieces of release paper leaving the narrowest release paper on the flashing. When the finished floor is applied, the release paper can be removed and the back dam can be completed.





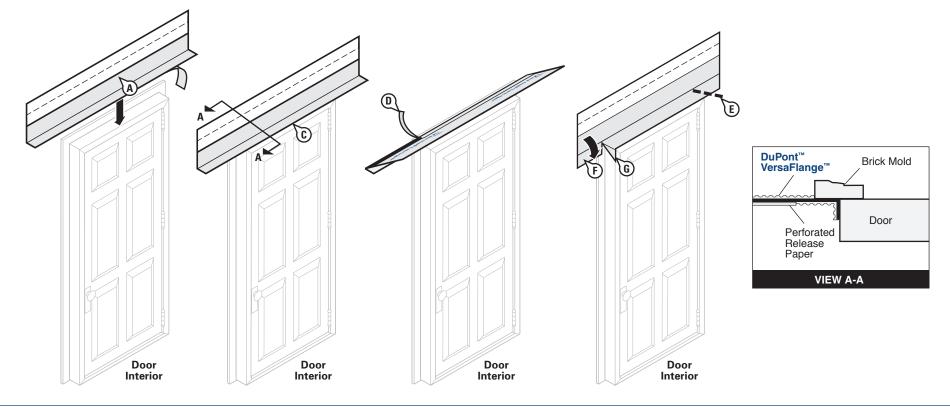
STEP 3

Position the sill flashing as indicated so the section with the release paper still attached extends past the door threshold on the inside. Ensure that 2"− 3" of the **DuPont[™] FlexWrap[™]** will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening. When the 1" of release paper is removed, the remaining section of **FlexWrap[™]** can be used to form a back dam.

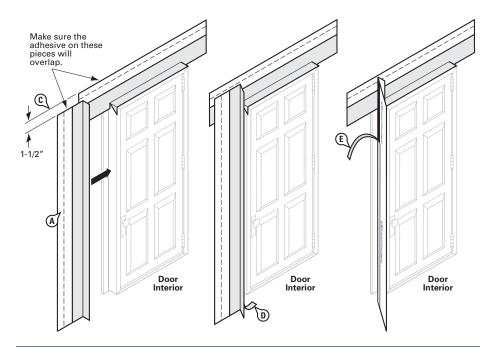
OPTIONAL: Create back dam by folding back narrow section of **FlexWrap**[™]: Some flooring cannot accommodate a back dam. In that case fold the back dam on top of **FlexWrap**[™] in the sill. The door will be installed on top of the fold to create a back dam (see Side View Detail above).

STEP 4

Fan **FlexWrap**[™] at bottom corners onto face of wall. Coverage of **FlexWrap**[™] should be 2"- 3" onto the face of the wall.

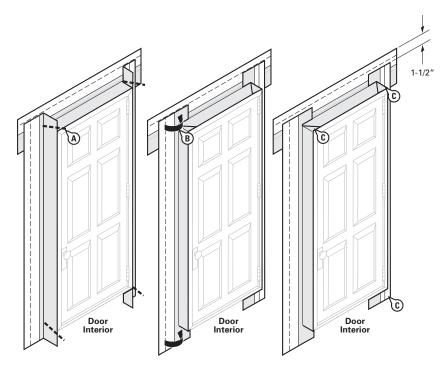


- A. Prepare head flashing by cutting a piece of **DuPont[™] VersaFlange[™]** at least 12"
 LONGER than the head length.
- B. Break the scored release paper on one edge of the head flashing by folding it back and forth upon itself.
- C. Center the **VersaFlange**[™] along the length of the door head and position so that it contacts the door frame and interior side of the brick mold. Remove the outer release paper and adhere the flashing to the door frame. Use the inner release paper to form a tight seal in the corner.
- D. Remove the inner release paper strip and adhere the flashing to the back of the brick mold.
- E. Beginning at the junction of the jamb and head, and away from the corner, cut the VersaFlange[™] at a 45° angle.
- F. Fold the newly created flashing flap down flat against the brick mold.
- G. Fold remaining head flashing flaps down onto the jamb frame.

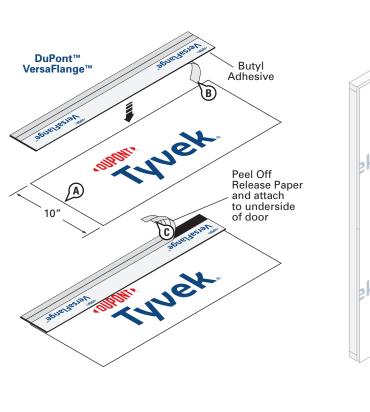


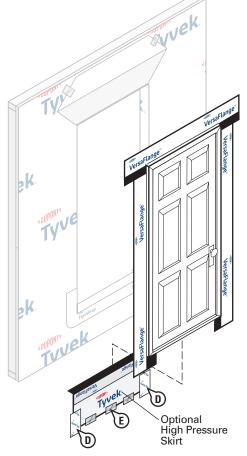
STEP 6

- A. Prepare jamb flashing by cutting a piece of DuPont[™] VersaFlange[™] at least 6"
 LONGER than the jamb.
- B. Break the scored release paper on one side of the jamb flashing by folding it back and forth upon itself.
- C. Position so that the VersaFlange[™] contacts the door frame and interior side of the brick mold. Ensure that the jamb flashing is positioned 1-1/2 inch below the top edge of the head flashing. Jamb flashing adhesive must come in contact with head flashing adhesive by one inch.
- D. Remove the outer release paper and adhere the flashing to the door frame. Use the inner release paper to form a tight seal in the corner.
- E. Remove the inner release paper and adhere the flashing to the back of the brick mold.
- F. Repeat on for opposite jamb.



- A. Beginning at the junction of the jamb and head, and away from the corner, cut the VersaFlange[™] at a 45° angle. Repeat the procedure at the junction of the sill and jamb.
- B. In order to overlap jamb adhesive to the head flashing adhesive, temporarily pull back release liner on the head flashing. Fold cut jamb flashing parallel to the door frame so that the jamb flashing lies flat onto the head flashing. Fold the head flashing release liner back down to protect any remaining exposed butyl along the head flashing prior to installation of the door.
- C. Fold remaining jamb flashing flaps down at all corners and adhere to the door frame.

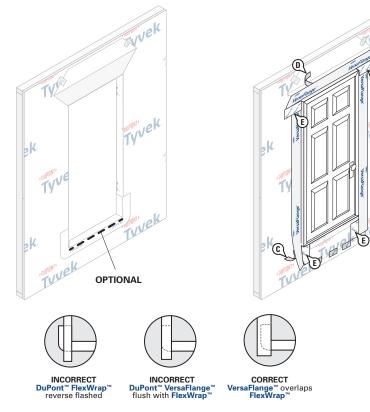




STEP 8 (OPTIONAL) - HIGH PRESSURE SKIRT

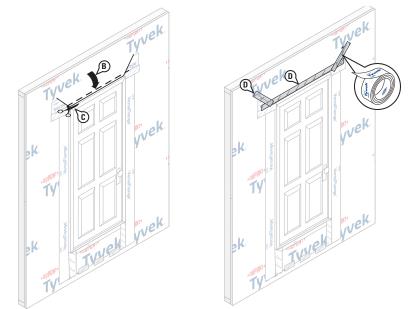
For extreme/coastal exposures, installation of a high-pressure skirt is recommended to help prevent water intrusion at the sill or threshold.

- A. Create the high pressure skirt by cutting a piece of **Tyvek[®] WRB** 1" **WIDER** than the width of door opening and approximately 10" in height.
- B. Cut a piece of DuPont[™] VersaFlange[™] to the same width of skirt. Remove release paper from one side of the VersaFlange[™] and adhere to Tyvek[®] WRB. The skirt may be made with either VersaFlange[™], DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™].
- C. Remove the release paper from the other side of the VersaFlange[™] and adhere the butyl adhesive at the sill skirt to the underside of the door threshold behind the jamb flashing.
- D. After installation of door in Step 9, secure edges of the optional skirt with two 4" pieces of **DuPont[™] Flashing Tape** or **StraightFlash[™]**.
- E. Tape the bottom of the optional skirt to allow for drainage and to minimize wind damage during construction.



STEP 9

- A. **OPTIONAL**: Apply Tower[®] Residential Sealant, or recommended sealant, along the sill as shown above. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the recommended sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.
- B. Install door according to manufacturer's installation instructions.
- C. Remove the remaining release paper from the DuPont[™] VersaFlange[™] jamb flashing and press firmly to adhere the butyl adhesive to the Tyvek[®] WRB. Do not reverse shingle. VersaFlange[™] must overlap DuPont[™] FlexWrap[™] and adhere to the substrate.
- D. Remove the release paper at the head and adhere the **VersaFlange**[™] to the wall surface.
- E. OPTIONAL: Cover exposed butyl with DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™]

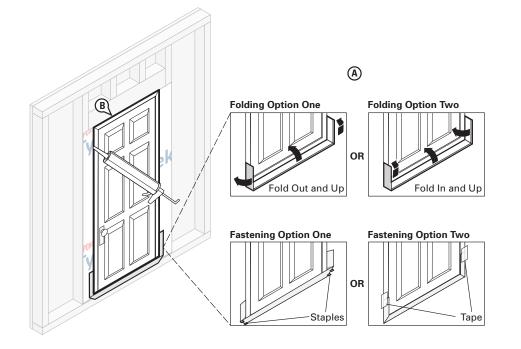


STEP 10

- A. OPTIONAL: If installing a drip cap as part of the door installation BEFORE the Tyvek[®] WRB head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 2</u>.
- B. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- C. Cut 1"- 2" strip of the **Tyvek[®] WRB** at lower horizontal edge of the head flap. **NOTE**: Skip this step if the head flap was trimmed while preparing the **Tyvek[®] WRB** per the <u>Alternative Installation Considerations</u> section.
- D. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with **DuPont[™] Tyvek[®] Tape**, **DuPont[™] Flashing Tape**, or **StraightFlash[™]**. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of door is acceptable **if an air barrier is not required**.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.



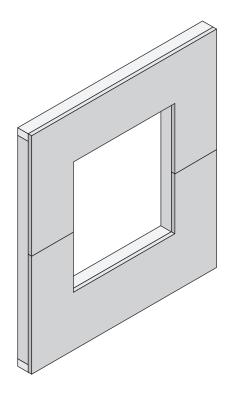
STEP 11

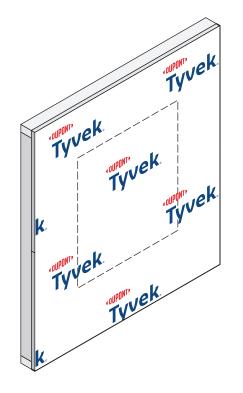
Final Step

- A. When the interior flooring is ready to install, remove release paper and use Folding Option One or Two (shown above) to form back dam.
- B. Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the door opening at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

The steps below can be used for the following details: Non-Flanged Windows, Non-Flanged Doors, Brick Mold Windows, Brick Mold Doors, Storefront Windows on Slabs, Storefront Windows on Slabs, Storefront Windows on Knee Walls, Scuppers, and/or PTAC Units.*

This method applies to following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]





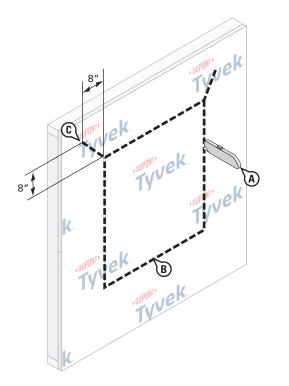
STEP 1

A. Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

STEP 2

A. Wrap wall as shown in the <u>DuPont[™] Tyvek[®] WRB Installation Instructions</u> section in this guide. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

*NOTE: For installation methods using DuPont[™] VersaFlange[™], the "Wrap the Cavity" method may be used as an alternate flashing method.

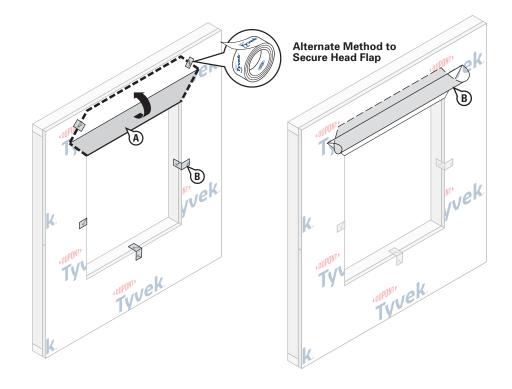


STEP 3

Prepare the Tyvek[®] WRB for Window Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

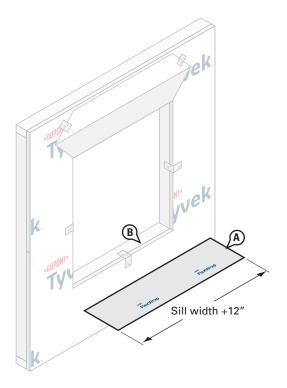
- A. Cut an opening in the **Tyvek**[®] **WRB** using a flush cut ("O-Cut") around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the Tyvek[®]
 WRB is cut flush with the sheathing and is not wrapped into the rough opening.)
- C. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.

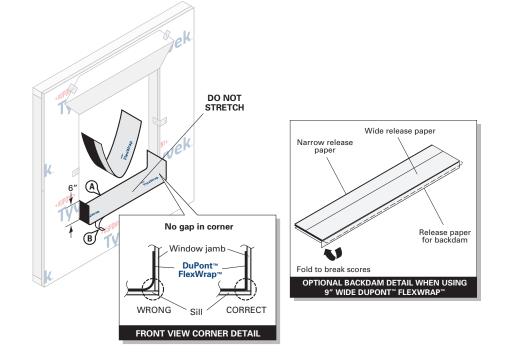


STEP 4

- A. Flip the head flap up to expose the sheathing and temporarily secure flap with tape.
- B. Temporarily secure the **Tyvek[®] WRB** with **DuPont[™] Tyvek[®] Tape** around rough opening before flashing is installed to help facilitate flashing installation.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.





STEP 5

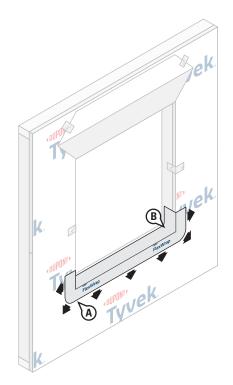
- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.

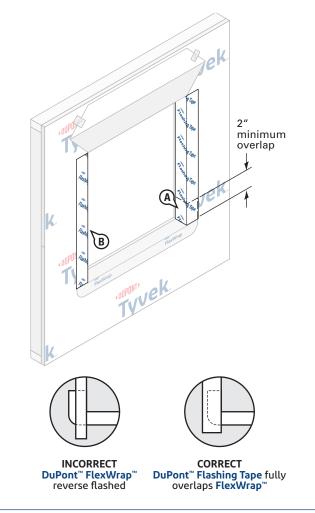
STEP 6

A. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.

OPTIONAL BACK DAM: Fold 9" **FlexWrap**[™] to break perforation. Remove center piece of release paper. Cover horizontal sill to accommodate back dam as appropriate, and adhere into rough opening along sill and up jambs (min 6" on each side). Leave 1" release paper on **FlexWrap[™]** inside rough opening to finish back dam after window installation.

B. Remove narrow release paper.

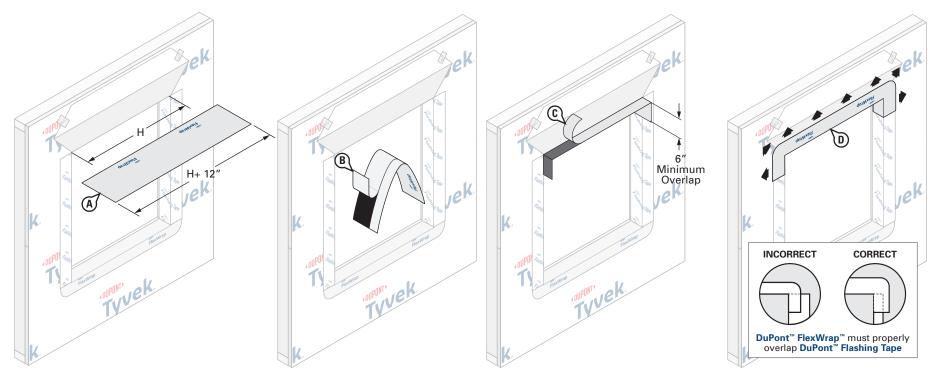




STEP 7

- A. Fan out the **DuPont[™] FlexWrap[™]** at corners and adhere onto face of wall. Continue adhering onto face of wall along sill. Coverage of **FlexWrap[™]** should be 2"- 3" onto the face of the wall.
- B. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.

- A. Cut the jamb flashing the vertical length of the rough opening. Jamb flashing should be long enough to overlap the sill flashing by at least 2" and be overlapped by future head flashing by at least 2". Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window will be located, ensuring minimum 2"- 3" adhesion onto the face of the wall.
- B. Wrap DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] into the rough opening at each jamb and onto wall face. The flashing should fully overlap the FlexWrap[™] on the wall and extend at least 1" BEYOND where the back of the window frame will be located.



STEP 9

Install DuPont[™] FlexWrap[™] at Head

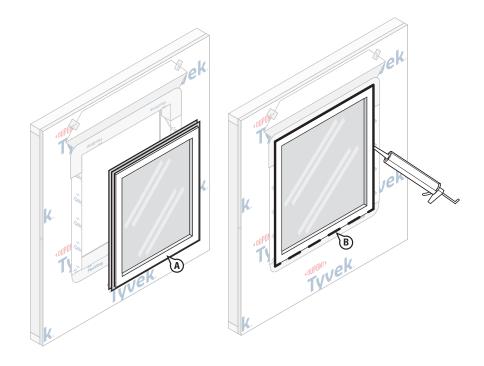
- A. Cut FlexWrap[™] at least 12" LONGER than width of rough opening head (H). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper, and repeat at opposite corner.
- C. Remove narrow release paper.
- D. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.

NOTE: For exterior gypsum sheathing, apply a recommended adhesive/primer to the exposed sheathing. An adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.

NOTE: DuPont[™] Tyvek[®] Certified Installers may install a 3-piece head (and sill) detail for window openings less than 6 ft. wide. For windows greater than 6 ft. wide, see the <u>Special</u> <u>Considerations</u> section for more information regarding the 3-piece head/sill detail. Contact your local DuPont Building Envelope Specialist for more information about the Certified Installer program.

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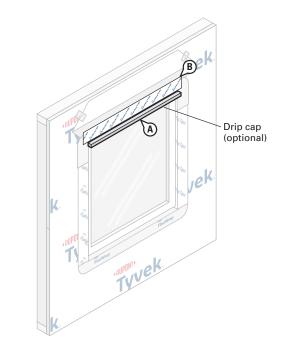


STEP 10

- A. Install window/door per manufacturer's installation instructions.
- B. Apply an exterior perimeter seal using backer rod and recommended sealant* along the jambs and head of the window opening.

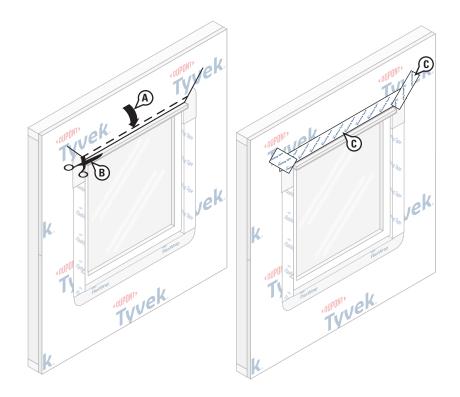
NOTE: Ensure window and sealant installation allows for drainage at the sill. If sealant is applied at the sill, as a best practice, ensure that there are at least two (2) 2" gaps in the sealant bead for every 4" of window to allow for drainage.

***NOTE**: Tower® Residential Sealant should **not** be used as the exterior perimeter seal for non-flanged units. Refer to <u>Chemical Compatibility of Representative Building</u>. <u>Sealants and Adhesives/Primers</u> for more information on recommended sealants.



STEP 11 - OPTIONAL

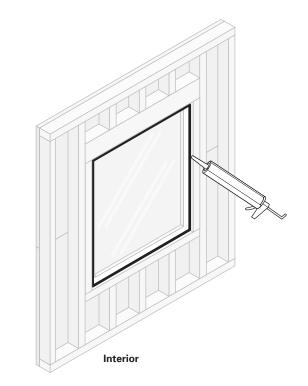
- A. As a best practice for high exposure areas, install metal drip cap above the head joint when specified.
- B. Apply a strip of **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** over the drip cap.



STEP 12

- A. Flip down upper flap of Tyvek[®] WRB so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or StraightFlash[™].

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the *Applicable Structures and Performance Criteria* section for more information on air barrier requirements and head flap terminations.

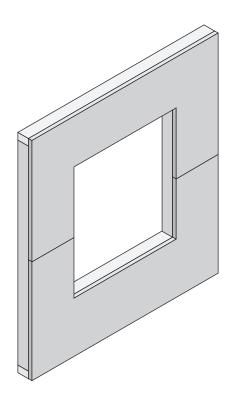


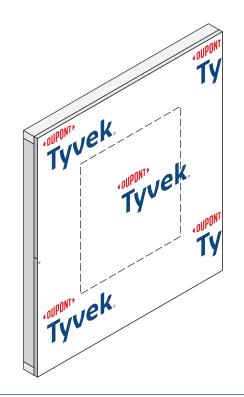
STEP 13

A. Install recommended sealant* (and backer rod as necessary) around the window/ door opening at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

***NOTE**: Tower[®] Residential Sealant should **not** be used as the interior perimeter seal for non-flanged units. Refer to <u>Chemical Compatibility of Representative Building</u> <u>Sealants and Adhesives/Primers</u> for more information on recommended sealants.

This method applies to following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



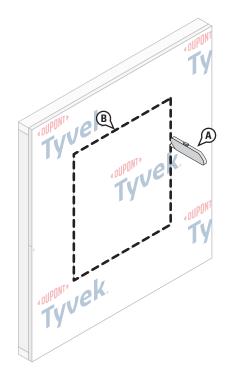


STEP 1

A. Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

STEP 2

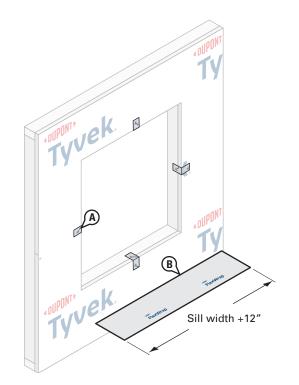
A. Wrap wall as shown in the <u>DuPont™ Tyvek® WRB Installation Instructions</u> section in this guide. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.



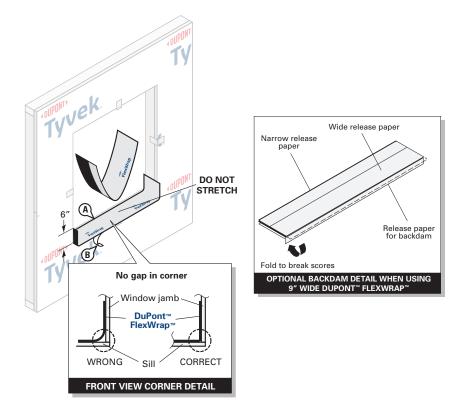
STEP 3

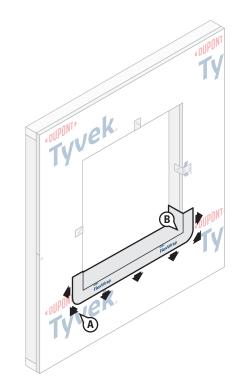
Prepare the Tyvek[®] WRB for Window Installation

- A. Cut an opening in the **Tyvek[®] WRB** using a flush cut ("O-Cut") around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the Tyvek[®]
 WRB is cut flush with the sheathing and is not wrapped into the rough opening.)



- A. Temporarily secure **Tyvek[®] WRB** with **DuPont[™] Tyvek[®] Tape** around rough opening before flashing is installed to help facilitate flashing installation.
- B. Cut DuPont[™] FlexWrap[™] at least 12" LONGER than width of rough opening sill. Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- C. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.





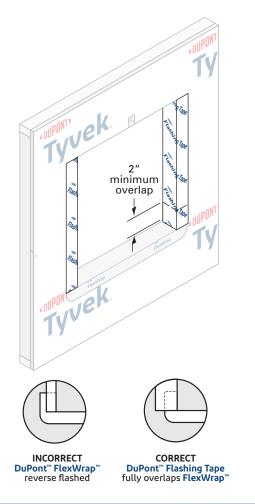
STEP 5

A. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the **DuPont[™] FlexWrap[™]** will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.

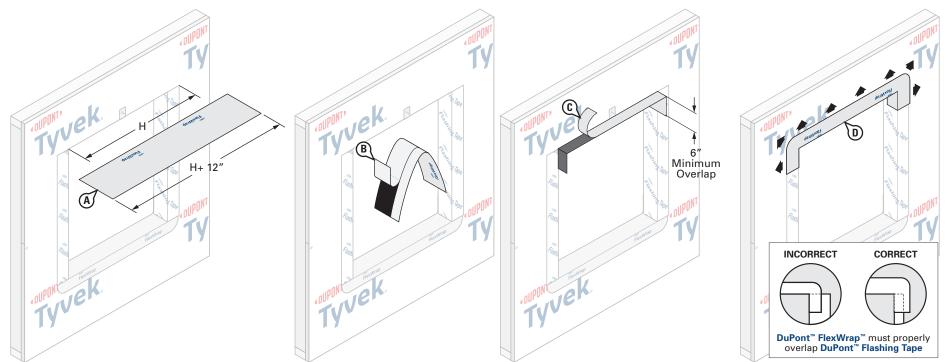
OPTIONAL BACK DAM: Fold 9" **FlexWrap**[™] to break perforation. Remove center piece of release paper. Cover horizontal sill to accommodate back dam as appropriate, and adhere into rough opening along sill and up jambs (min 6" on each side). Leave 1" release paper on **FlexWrap**[™] inside rough opening to finish back dam after window installation.

B. Remove narrow release paper.

- A. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.
- B. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface.



- A. Cut the jamb flashing the vertical length of the rough opening. Jamb flashing should be long enough to overlap the sill flashing by at least 2" and be overlapped by future head flashing by at least 2". Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Wrap DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] into the rough opening at each jamb and onto wall face. The flashing should fully overlap the FlexWrap[™] on the wall and extend at least 1" BEYOND where the back of the window frame will be located.

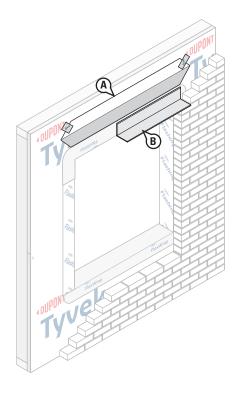


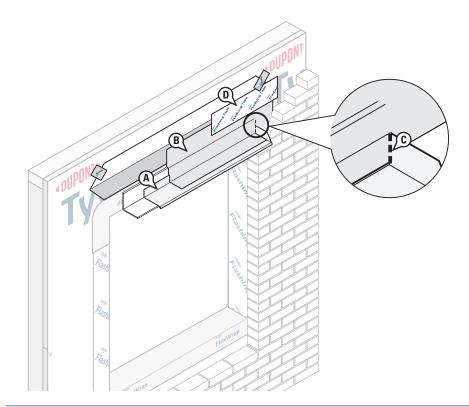
STEP 8

Install DuPont[™] FlexWrap[™] at Head

- A. Cut FlexWrap[™] at least 12" LONGER than width of rough opening head (H). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper, and repeat at opposite corner.
- C. Remove narrow release paper.
- D. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.

NOTE: DuPont[™] Tyvek[®] Certified Installers may install a 3-piece head (and sill) detail for window openings less than 6 ft. wide. For windows greater than 6 ft. wide, see the <u>Special</u> <u>Considerations</u> section for more information regarding the 3-piece head/sill detail. Contact your local DuPont Building Envelope Specialist for more information about the Certified Installer program.





STEP 9

Install Floating Lintel

A. Cut flap in the **Tyvek[®] WRB**.

B. Install lintel per plans and specifications.

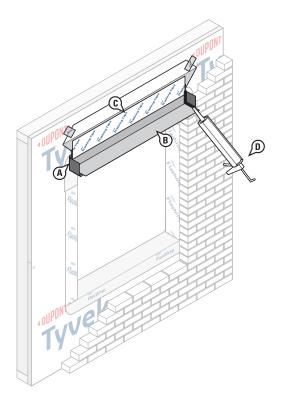
For exterior gypsum sheathing, apply a recommended adhesive/primer to the top of the jambs and exposed sheathing.

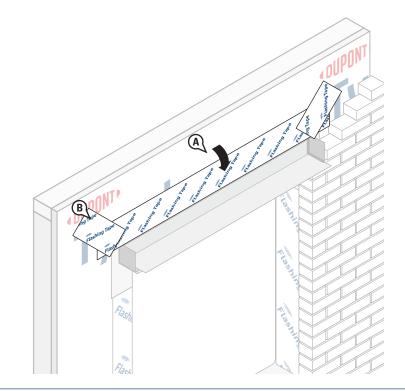
NOTE: An adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.

STEP 10

Head Detail Using Metal Pan and Mechanically Attached Through Wall Flashing

- A. Install corrosion-resistant metal pan with drip and soldered/sealed end dams above lintel. Extend flashing **BEYOND** the end of lintel.
- B. Install through wall flashing a minimum of 3" onto the wall sheathing, overlapping the lintel, and extending onto the horizontal surface of the metal pan leaving minimum 1" of metal drip exposed.
- C. Cut a vertical slit in the through wall flashing to accommodate the vertical edge of the metal pan.
- D. Install 4" wide **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** along the top edge of through wall flashing to achieve the 2" minimum contact to the exposed exterior sheathing.





STEP 10 (ALTERNATE)

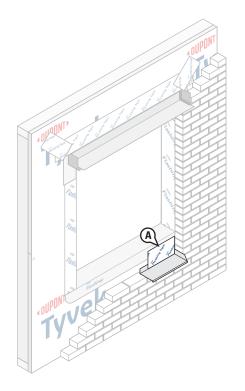
Head Detail Using Self-Adhered Through Wall Flashing

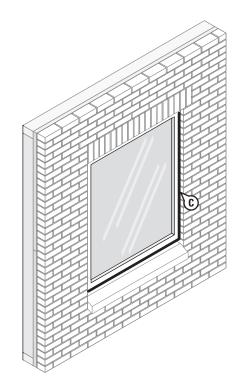
- A. Embed through wall flashing end dams in Tower[®] Residential Sealant, or recommended sealant, and install along outer edge of lintel.
- B. Install self-adhered through wall flashing with a minimum of 3" adhering to the wall sheathing, then overlapping the lintel. Extend the through wall flashing a minimum of 1/4" **BEYOND** the outside edge of the lintel to form a drip edge.
- C. **OPTIONAL**: Install 4" **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** along the top edge of through wall flashing to achieve the 2" minimum contact to the exposed exterior sheathing.
- D. Apply sealant along the edges of the through wall flashing.

STEP 11

- A. Flip down the head flap and trim 1"- 2" above the window opening.
- B. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or StraightFlash[™].

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.





STEP 12

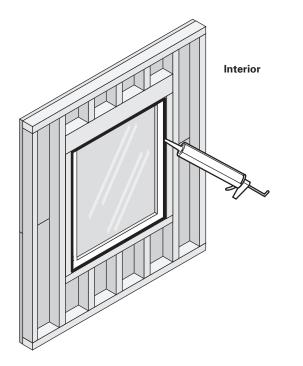
Install Metal Sill Pan

A. Anchor the non-corrosive metal sill pan flashing to the wall and integrate to the Tyvek[®] WRB with 4" DuPont[™] Flashing Tape.

STEP 13

- A. Install remaining masonry with weeps along flashing.
- B. Install window per manufacturer's instructions.
- C. Seal all four sides of the perimeter of the window.

DO NOT SEAL ANY WEEPS OF WINDOW FRAME.

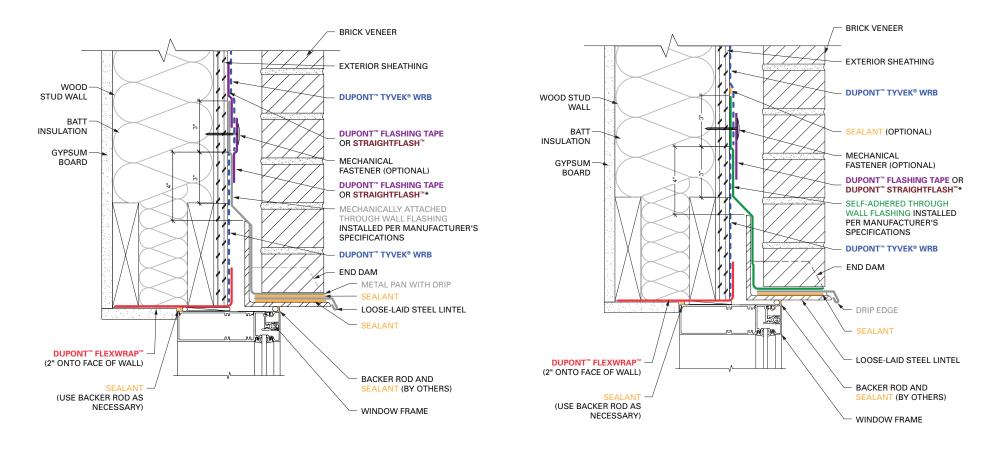


STEP 14

Final Step

Install recommended sealant* (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant**, or recommended foam. When using recommended sealant, be sure that the sealant penetrates the grooves of the **DuPont™ FlexWrap™** around the sill. When using **Great Stuff Pro™ Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro™ Dispensing Gun** during installation.

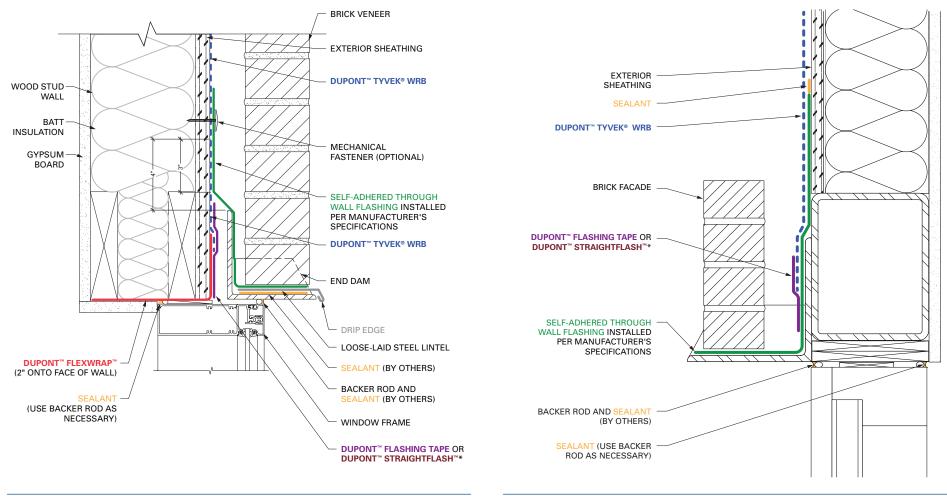
***NOTE**: Tower[®] Residential Sealant should **not** be used as the interior perimeter seal for non-flanged units. Refer to <u>Chemical Compatibility of Representative Building</u><u>Sealants and Adhesives/Primers</u> for more information on recommended sealants.



FLOATING LINTEL WITH METAL PAN AND MECHANICALLY ATTACHED THROUGH WALL FLASHING (SIDE VIEW)

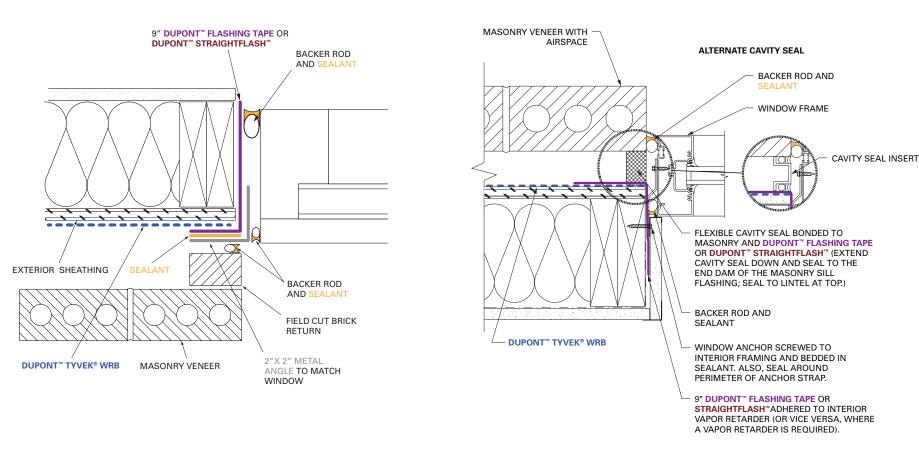
FLOATING LINTEL WITH SELF-ADHERED THROUGH WALL FLASHING (SIDE VIEW)

*NOTE: For a more robust termination of the Tyvek[®] WRB, seal with DuPont[™] Flashing Tape or StraightFlash[™]. If a more robust termination is not desired, DuPont[™] Tyvek[®] Tape may be used. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and Tyvek[®] WRB terminations.



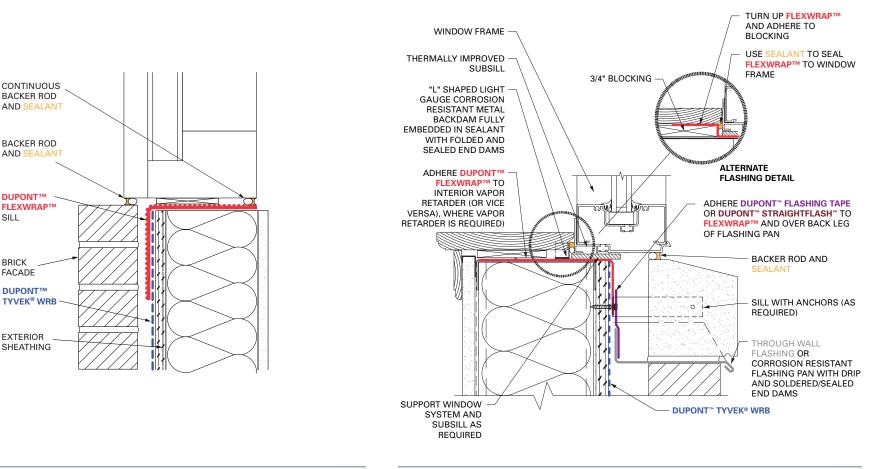
FLOATING LINTEL WITH THROUGH WALL FLASHING ADHERED TO DUPONT[™] TYVEK[®] WRB (SIDE VIEW) HEAD DETAIL FOR ATTACHED LINTEL WITH SELF-ADHERED THROUGH WALL FLASHING (SIDE VIEW)

*NOTE: For a more robust termination of the Tyvek[®] WRB, seal with DuPont[™] Flashing Tape or StraightFlash[™]. If a more robust termination is not desired, DuPont[™] Tyvek[®] Tape may be used. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and Tyvek[®] WRB terminations.



OPTIONAL JAMB DETAIL (TOP VIEW)

OPTIONAL JAMB DETAIL (TOP VIEW)



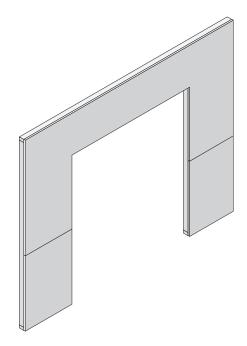
SILL DETAIL (SIDE VIEW)

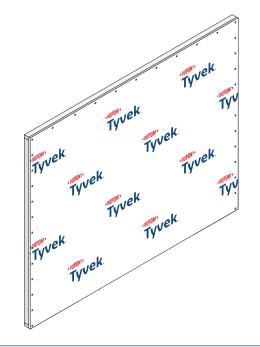
SILL

SILL DETAIL (SIDE VIEW) METAL THROUGH WALL FLASHING

This door detail can be used for any non-flanged door rough opening, including storefront or hollow metal doors. Use of this detail requires the ability to protect the rough opening at the jambs and head with **DuPont Self-Adhered Flashing Products**. For welded hollow metal doors or other welded-in-place doors where the rough opening cannot be protected, the **Tyvek**[®] **WRB** must be terminated on the face of the wall around the perimeter of the opening with **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]**.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



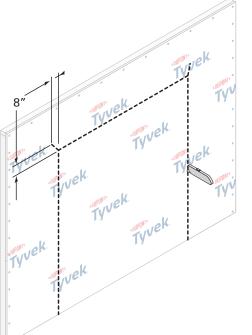


STEP 1

A. Cut rough opening in sheathing for door.

STEP 2

A. Wrap wall as shown in the <u>DuPont[™] Tyvek[®] WRB Installation Instructions</u> section in this guide. Do not install fasteners within 6" of the jambs of the openings and within 9" of the head of the openings.



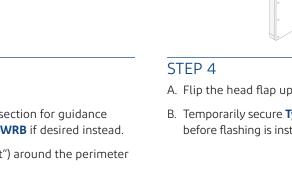
STEP 3

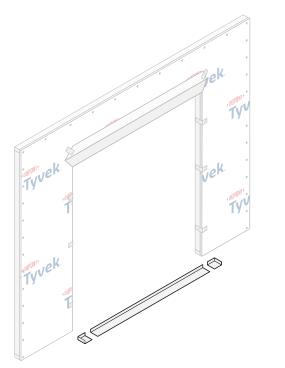
Prepare the **Tyvek**[®] **WRB** for door installation.

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Cut an opening in the **Tyvek**[®] **WRB** using a flush cut ("O-Cut") around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the Tyvek[®]
 WRB is cut flush with the sheathing and is not wrapped into the rough opening.)
- C. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.

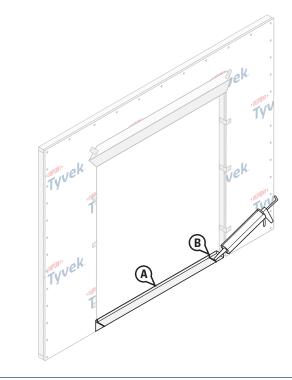
- A. Flip the head flap up to expose the sheathing and temporarily secure with tape.
- B. Temporarily secure **Tyvek[®] WRB** with **DuPont[™] Tyvek[®] Tape** around rough opening before flashing is installed to help facilitate flashing installation.



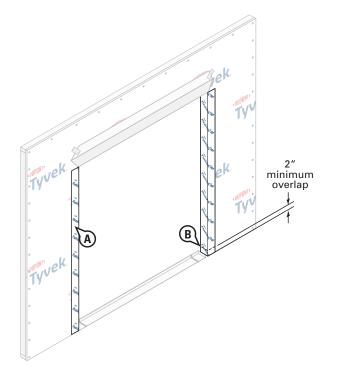


STEP 5

- A. Prepare the sill flashing and/or threshold per manufacturer's recommendation and seal the corner pan flashing with sealant if applicable.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.

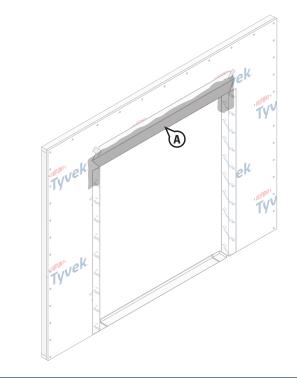


- A. Shim, level, and anchor pan/threshold per manufacturer's instructions flashing to concrete.
- B. Seal corner pan flashing seams with sealant if applicable.



STEP 7

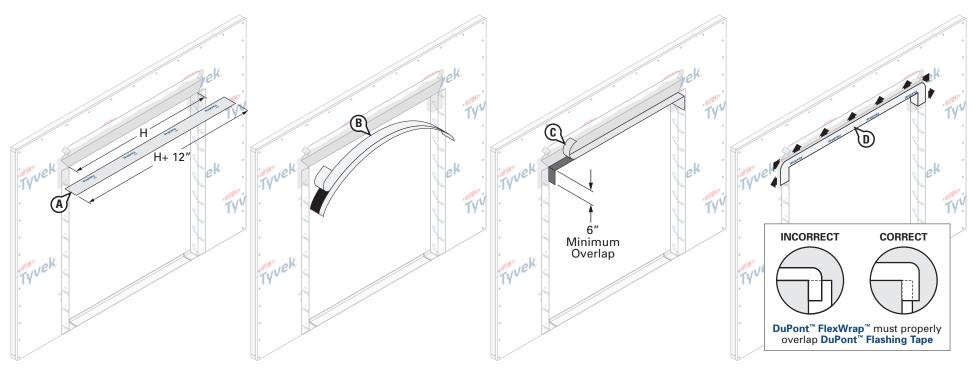
- A. Wrap DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] into the rough opening at each jamb and onto wall face. Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window will be located, ensuring minimum 2"- 3" adhesion onto the face of the wall.
- B. Jamb flashing should be long enough to overlap the sill flashing by at least 2" and be overlapped by future head flashing by at least 2".



STEP 8

A. For exterior gypsum sheathing, apply a recommended adhesive/primer to the top of the jambs and exposed sheathing.

NOTE: An adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.

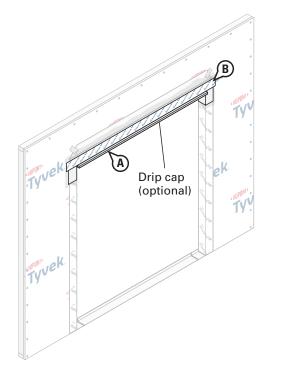


STEP 9

Install DuPont[™] FlexWrap[™] at Head

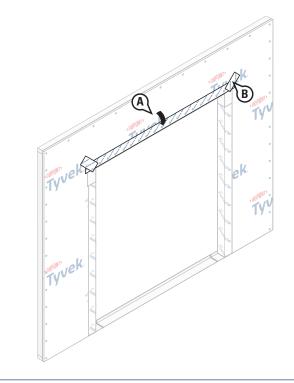
- A. Cut FlexWrap[™] at least 12" LONGER than width of rough opening head (H). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper, and repeat at opposite corner.
- C. Remove narrow release paper.
- D. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.
- E. Use sufficient width of **FlexWrap**[™] to avoid reverse shingling of flashing at the jamb and head interface. See detail above.

NOTE: DuPont[™] Tyvek[®] Certified Installers may install a 3-piece head (and sill) detail for window openings less than 6 ft. wide. For windows greater than 6 ft. wide, see the <u>Special</u> <u>Considerations</u> section for more information regarding the 3-piece head/sill detail. Contact your local DuPont Building Envelope Specialist for more information about the Certified Installer program.



STEP 10 - OPTIONAL

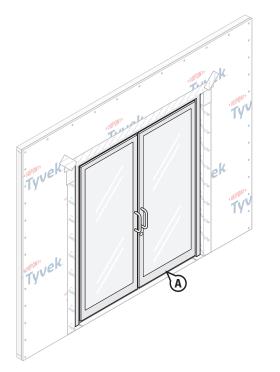
- A. As a best practice for high exposure areas, install metal drip cap above the head joint when specified.
- B. Apply a strip of 4" **DuPont[™] Flashing Tape** or **DuPont[™] StraightFlash[™]** over the drip cap.



STEP 11

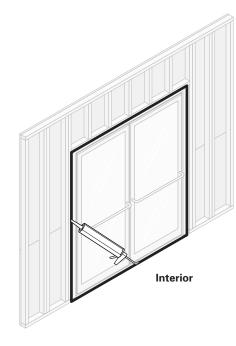
- A. Flip down the head flap and trim 1"– 2" above the door opening. **NOTE**: Skip this step if the head flap was trimmed while preparing the **Tyvek**[®] **WRB** per the <u>Alternative Installation Considerations</u> section.
- B. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™].

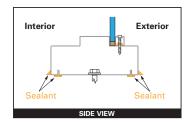
NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the *Applicable Structures and Performance Criteria* section for more information on air barrier requirements and head flap terminations.



STEP 12

- A. Install door per manufacturer's installation instructions.
- B. If applicable, glaze door per manufacturer's instructions.



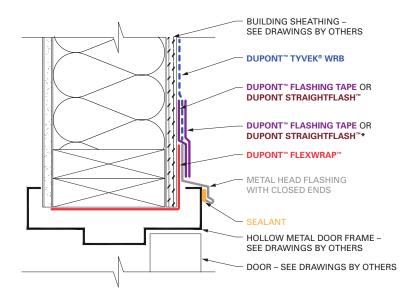


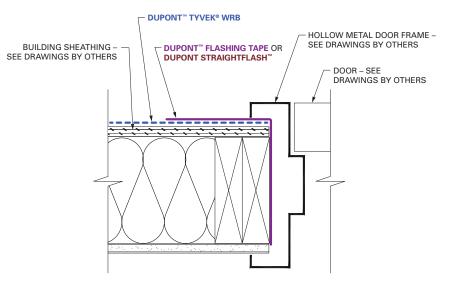
STEP 13

Final Step

Install recommended sealant* (and backer rod as necessary) around the door opening at the interior. It is also acceptable to use **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant**, or recommended foam. When using **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro[™] Dispensing Gun** during installation.

***NOTE**: Tower[®] Residential Sealant should **not** be used as the interior perimeter seal for non-flanged units. Refer to <u>Chemical Compatibility of Representative Building</u><u>Sealants and Adhesives/Primers</u> for more information on recommended sealants.





HEAD DETAIL (SIDE VIEW) - HOLLOW METAL DOOR

JAMB DETAIL (TOP VIEW) - HOLLOW METAL DOOR

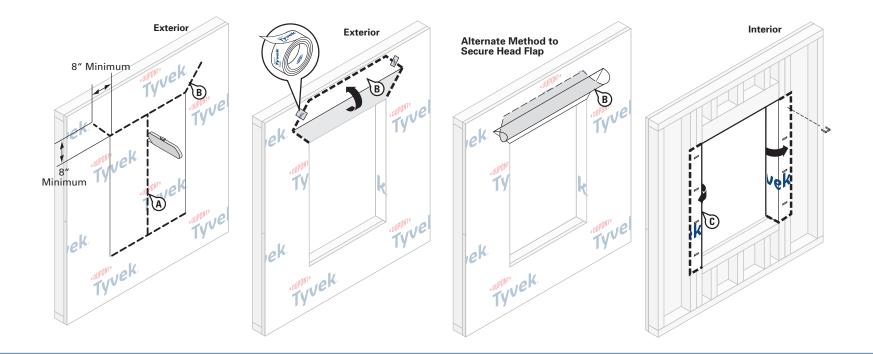
*NOTE: For a more robust termination of the Tyvek[®] WRB, seal with DuPont[™] Flashing Tape or StraightFlash[™]. If a more robust termination is not desired, DuPont[™] Tyvek[®] Tape may be used. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and Tyvek[®] WRB terminations.

NOTE: CAD details not to scale. For additional CAD details, visit building.dupont.com

Table of Contents

Ensure VersaFlange[™] logo side faces the exterior. Use of VersaFlange[™] requires a smooth-framed window for proper adhesion to the frame.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], DuPont[™] VersaFlange[™], DuPont[™] FlexWrap[™], and DuPont[™] FlexWrap[™] EZ



STEP 1

Prepare the Tyvek® WRB for Window Installation

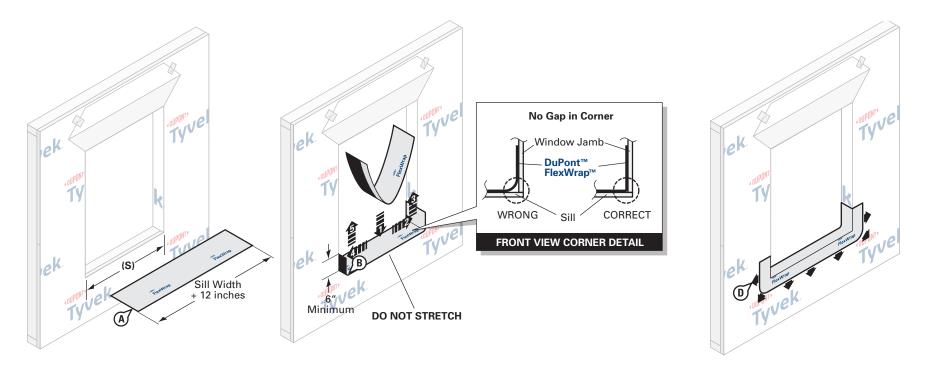
OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the **Tyvek**[®] **WRB**. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the window head, up and away from the window opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation. Flip head flap up and temporarily secure with DuPont[™] Tyvek[®] Tape.

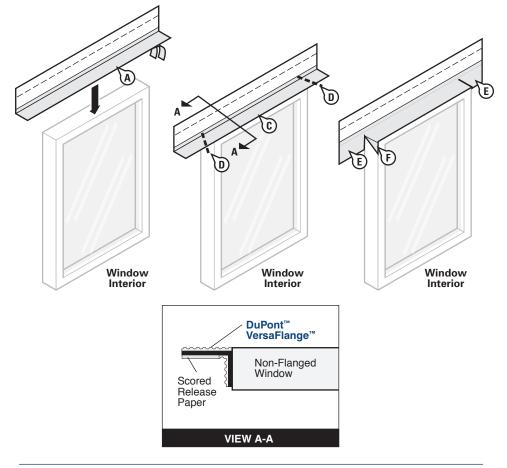
ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

NOTE: Some windows and flashing widths may require longer slits.

C. Fold side flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.



- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.
- C. Remove narrow release paper.
- D. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill.

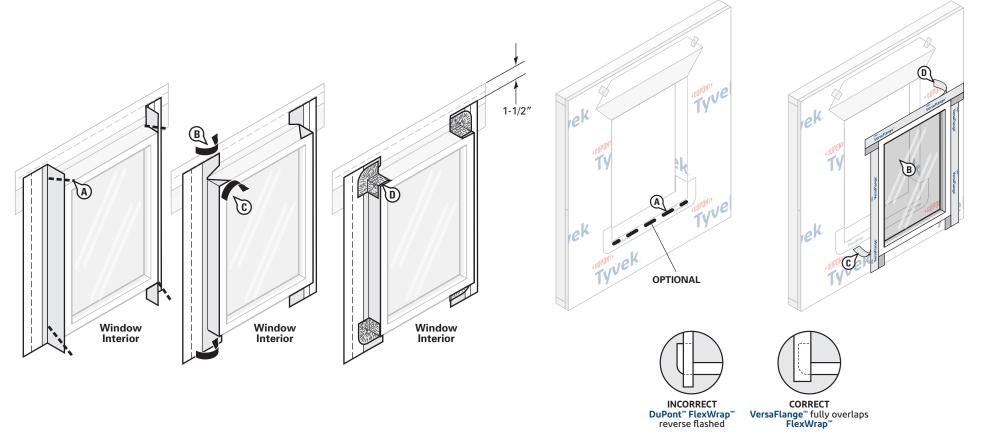


Make sure the adhesive on these pieces will overlap.

STEP 3

- A. Prepare head flashing by cutting a piece of DuPont[™] VersaFlange[™] at least 12"
 LONGER than the head length.
- B. Remove the release paper from one side of the VersaFlange[™].
- C. Center the flashing along the length of the window and position so that it contacts the window frame.
- D. Beginning at the junction of the jamb and head and away from the corners, cut the VersaFlange[™] at a 45° angle.
- E. Fold the newly created flashing flaps down parallel to the window frame.
- F. Fold remaining head flashing flaps down onto the jamb.

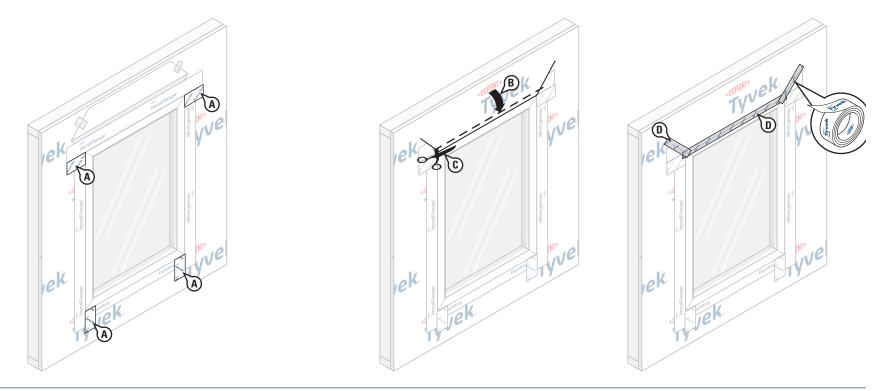
- A. Prepare jamb flashing by cutting a piece of **VersaFlange**[™] at least 6" **LONGER** than the jamb length.
- B. Remove the release paper from one side of the VersaFlange[™].
- C. Position the VersaFlange[™] so that it contacts the window frame up to the exterior face of the window. Ensure that the jamb flashing is positioned 1-1/2 inches below top of the head flashing. Jamb flashing adhesive must come in contact with head flashing adhesive and overlap by one inch.
- D. Repeat on opposite jamb.



STEP 5

- A. Beginning at the junction of the jambs and the head, and away from the corners, cut the **DuPont[™] VersaFlange[™]** at a 45° angle. Repeat the procedure at the junction of the sill and jambs.
- B. In order to overlap jamb adhesive to the head flashing adhesive, temporarily pull back release liner on the head flashing. Fold cut jamb flashing parallel to the window frame so that the jamb flashing lies flat onto the head flashing. Fold the head flashing release liner back down to protect any remaining exposed butyl along the head.
- C. Fold remaining jamb flashing flaps down at all corners and adhere to the window frame.
- D. Cut four 3" x 3" pieces of **DuPont[™] FlexWrap[™]**, or four 3" pieces of **DuPont[™] FlexWrap[™] EZ**, and add patches to corners of the window.

- A. OPTIONAL: Apply Tower® Residential Sealant, or recommended sealant, along the sill as shown above. To allow for drainage, do not apply continuous sealant bead along sill. Ensure a minimum 2" wide drainage gap in the recommended sealant bead within 4" from each corner of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"- 12" (on center) of sill width.
- B. Install the window per manufacturer's instructions.
- C. Remove the remaining release paper from the VersaFlange[™] jamb flashing and press firmly to adhere the butyl adhesive to the Tyvek[®] WRB. Do not reverse shingle. VersaFlange[™] must overlap FlexWrap[™] and adhere to the substrate.
- D. Remove the release paper at the head and adhere the **VersaFlange**[™] to the wall surface.



STEP 7

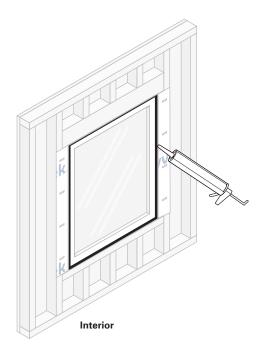
A. OPTIONAL: Cover exposed butyl with DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], or DuPont[™] Tyvek[®] Tape.

OPTIONAL: If installing a drip cap as part of the window installation **BEFORE** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 2</u>.

- B. Flip down upper flap of **Tyvek**[®] **WRB** so it lays flat across head flashing.
- C. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- D. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with Tyvek[®] Tape, DuPont[™] Flashing Tape, or StraightFlash[™]. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of window is acceptable if an air barrier is not required.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.



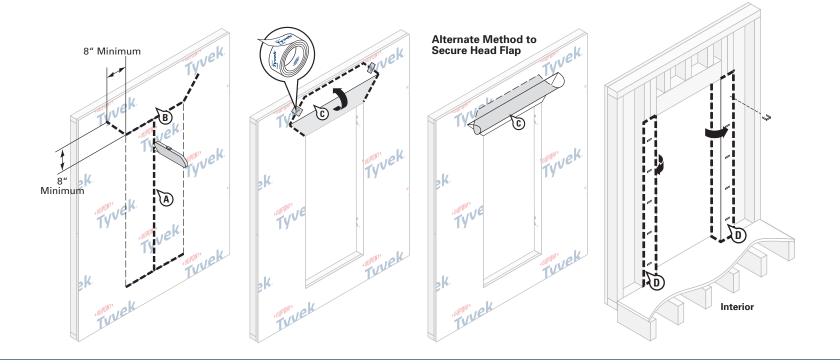
STEP 8

Final Step

Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant**, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the **DuPont[™] FlexWrap[™]** around the sill. When using **Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant** in perimeter openings less than 1/2", apply using the plastic extension tip for the **Great Stuff Pro[™] Dispensing Gun** during installation.

This method is intended for doors installed above grade and/or with wood floor construction. Use of Versaflange[™] requires a smooth-framed door for proper adhesion of the adhesive to the frame.

This method applies to the following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], DuPont[™] VersaFlange[™], DuPont[™] FlexWrap[™], and DuPont[™] FlexWrap[™] EZ



STEP 1

Prepare the Tyvek® WRB for Door Installation

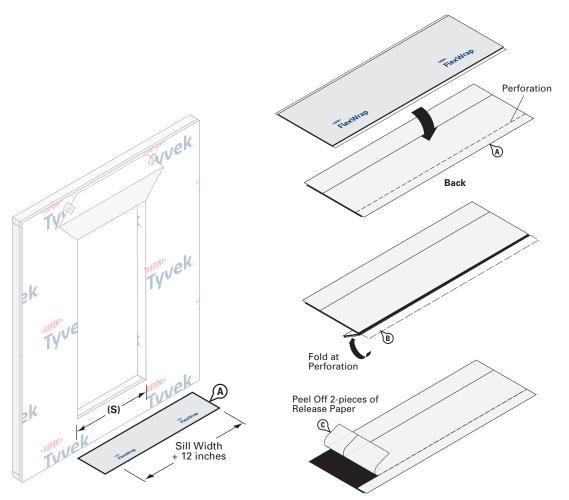
OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Make an "I-Cut" in the **Tyvek**[®] **WRB**. For an "I-Cut", begin with a horizontal cut across the bottom and the top of the rough opening. Then, starting from the top center edge of the rough opening, cut straight down to the sill.
- B. Cut two 45 degree slits a minimum of 8" extending from the corner of the door head, up and away from door opening. This will create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation (see <u>STEP 9</u>). **NOTE**: Some doors and flashing widths may require longer slits.

C. Flip head flap up and temporarily secure with **DuPont[™] Tyvek[®] Tape**.

ALTERNATE METHOD TO SECURE HEAD FLAP: In lieu of temporarily taping, the head flap can be tucked under the **Tyvek**[®] **WRB**.

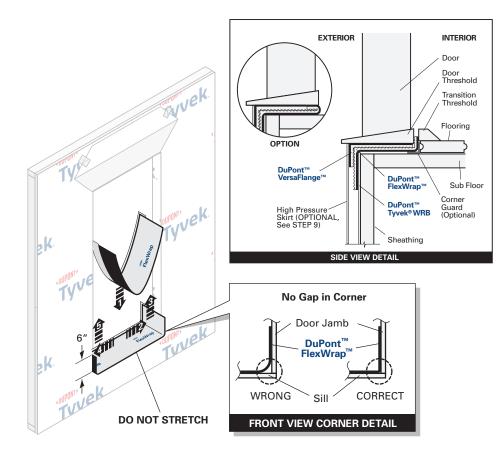
D. Fold side flaps into rough opening, and secure to inside wall framing. Cut off excess flaps if desired.



STEP 2

Preparation of Sill Flashing

- A. Cut 9" **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of the sill (S).
- B. 9" FlexWrap[™] has perforated release paper to help with the formation of the back back dam (see <u>STEP 9</u>). To ensure that the perforation tears cleanly, fold the perforation 180° and crease the flashing.
- C. Remove the two widest pieces of release paper leaving the narrowest release paper on the flashing. When the finished floor is applied, the release paper can be removed and the back dam can be completed.



STEP 3

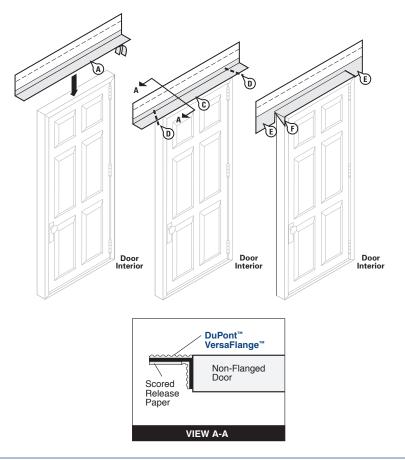
Position the sill flashing as indicated so the section with the release paper still attached extends past the door threshold on the inside. Ensure that 2"- 3" of the **DuPont[™] FlexWrap[™]** will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening. When the 1" of release paper is removed, the remaining section of **FlexWrap[™]** can be used to form a back dam.

OPTIONAL: **Create back dam by folding back narrow section of FlexWrap**[™]: Some flooring cannot accomodate a back dam. In that case fold the back dam on top of **FlexWrap**[™] in the sill. The door will be installed on top of the fold to create a back dam (see Side View Detail above).

STEP 4

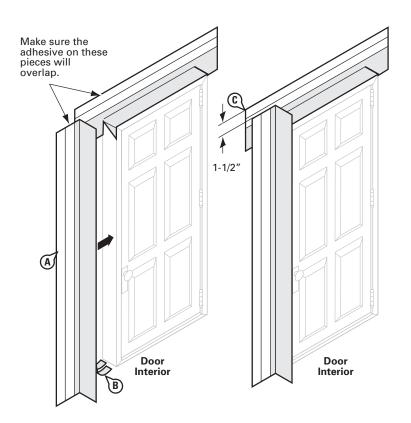
Fan **FlexWrap**[™] at bottom corners onto face of wall. Coverage of **FlexWrap**[™] should be 2"- 3" onto the face of the wall.

www.

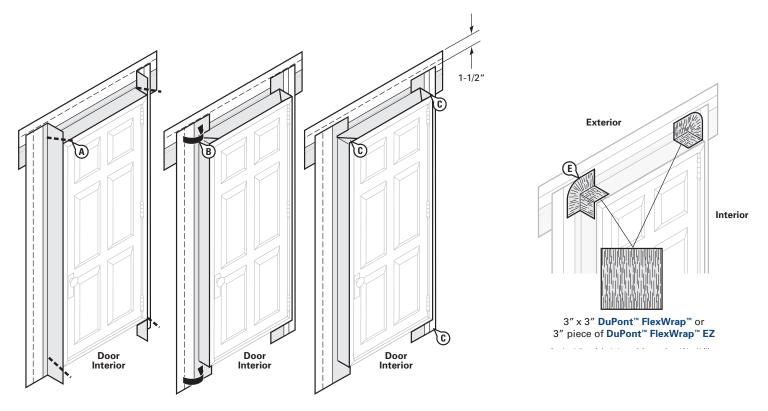


STEP 5

- A. Prepare head flashing by cutting a piece of DuPont[™] VersaFlange[™] at least 12"
 LONGER than the head length.
- B. Remove the release paper from one side of the VersaFlange[™].
- C. Center the **VersaFlange**[™] along the length of the door and position so that it contacts the door frame.
- D. Beginning at the junction of the jamb and head, and away from the corners, cut the VersaFlange[™] at a 45° angle.
- E. Fold the newly created flashing flaps down flat.
- F. Fold the remaining head flashing flaps down and adhere to the jamb frame.

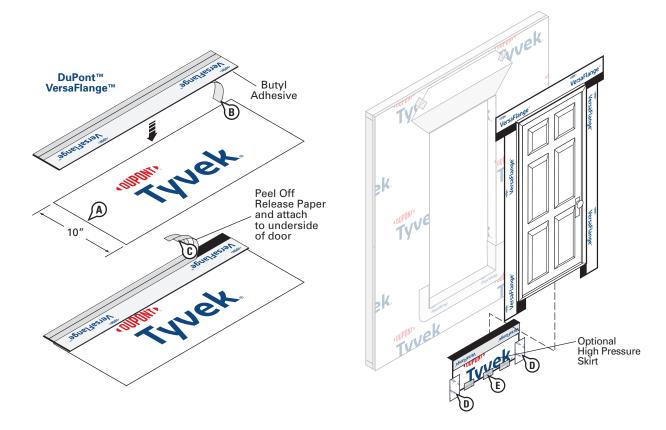


- A. Prepare jamb flashing by cutting a piece of **VersaFlange**[™] at least 6" **LONGER** than the jamb length.
- B. Remove the release paper from one side of the VersaFlange[™].
- C. Position the VersaFlange[™] so that it contacts the door frame up to the exterior face of the door. Ensure that the jamb flashing is positioned 1-1/2 inches below top of the head flashing. Jamb flashing adhesive must come in contact with head flashing adhesive and overlap by one inch.
- D. Repeat on opposite jamb.



- A. Beginning at the junction of the jamb and the head, and away from the corner, cut the **DuPont[™] VersaFlange[™]** at a 45° angle. Repeat the procedure at the junction of the sill and jambs.
- B. In order to overlap jamb adhesive to the head flashing adhesive, temporarily pull back release liner on the head flashing. Fold cut jamb flashing parallel to the door frame so that the jamb flashing lies flat onto the head flashing. Fold the head flashing release liner back down to protect any remaining exposed butyl along the head flashing prior to installation of the door.
- C. Fold remaining jamb flashing flaps down at all corners and adhere to the door frame.

- D. Repeat on opposite jamb.
- E. Cut two 3" x 3" pieces of DuPont[™] FlexWrap[™], or two 3" pieces of DuPont[™] FlexWrap[™] EZ, squares and add patches to corners of the door.

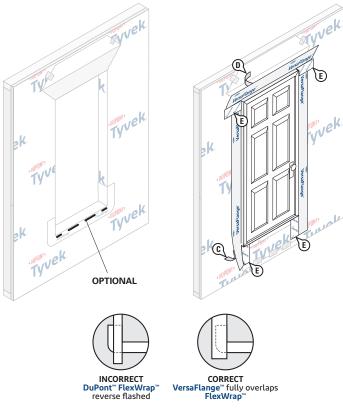


STEP 8 (OPTIONAL) - HIGH PRESSURE SKIRT

Completing installation of flashing for non-flanged door

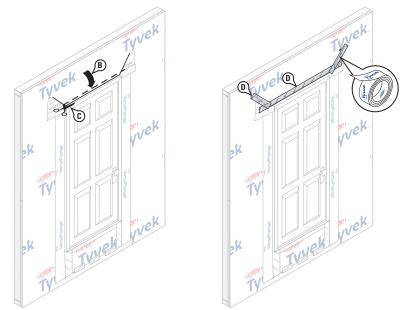
For extreme/coastal exposures, installation of a high-pressure skirt is recommended to help prevent water intrusion at the sill or threshold.

- A. Create the high pressure skirt by cutting a piece of **Tyvek[®] WRB** 1" **WIDER** than the width of door opening and approximately 10" in height.
- B. Cut a piece of **DuPont[™] VersaFlange[™]** to the same width of skirt. Remove release paper from one side of the **VersaFlange[™]** and adhere to **Tyvek[®] WRB**. The skirt may be made with either **VersaFlange[™]** or **DuPont[™] StraightFlash[™]**.
- C. Remove the release paper from the other side of the **VersaFlange**[™] and adhere the butyl adhesive at the sill skirt to the underside of the door threshold behind the jamb flashing.
- D. After installation of door in Step 9, secure edges of the optional skirt with two 4" pieces of **StraightFlash**[™].
- E. Tape the bottom of the optional skirt to allow for drainage and to minimize wind damage during construction.



STEP 9

- A. **OPTIONAL**: Apply Tower[®] Residential Sealant, or recommended sealant, along the sill as shown above. **To allow for drainage, do not apply continuous sealant bead along sill**. Ensure a minimum 2" wide drainage gap in the recommended sealant bead within 4" from **each corner** of the jamb-sill interface. Continue applying sealant along the sill with additional 2" wide (min.) drainage gaps for every 6"– 12" (on center) of sill width.
- B. Install door according to manufacturer's installation instructions.
- C. Remove the remaining release paper from the DuPont[™] VersaFlange[™] jamb flashing and press firmly to adhere the butyl adhesive to the Tyvek[®] WRB. Do not reverse shingle. VersaFlange[™] must overlap DuPont[™] FlexWrap[™] and adhere to the substrate.
- D. Remove the release paper at the head and adhere the VersaFlange[™] to the wall surface.
- E. **OPTIONAL**: Cover exposed butyl with **DuPont[™] Flashing Tape** or **DuPont[™]** StraightFlash[™]

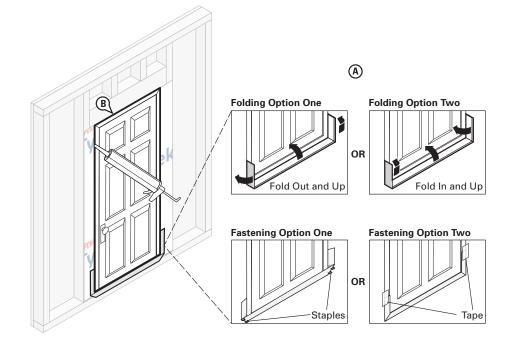


STEP 10

- A. OPTIONAL: If installing a drip cap as part of the door installation BEFORE the Tyvek[®] WRB head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to Option 2.
- B. Flip down upper flap of Tyvek® WRB so it lays flat across head flashing.
- C. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap. NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- D. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with **DuPont[™] Tyvek[®] Tape**, **DuPont[™] Flashing Tape**, or **StraightFlash[™]**. If additional drainage is desired, skip-sealing at head with a maximum of two (2) 2" gaps for every 3' of door is acceptable **if an air barrier is not required**.

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

OPTIONAL: If installing a drip cap **AFTER** the **Tyvek**[®] **WRB** head flap is flipped down and sealed, see <u>Drip Cap Installation</u> section and refer to <u>Option 3</u>.

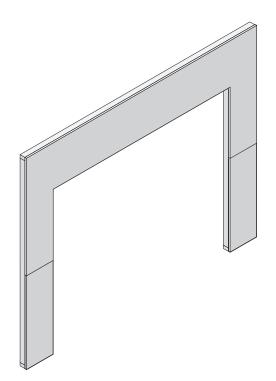


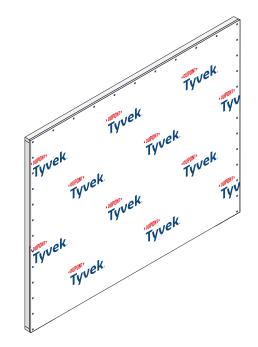
STEP 11

Final Step

- A. When the interior flooring is ready to install, remove release paper and use Folding Option One or Two (shown above) to form back dam.
- B. Install Tower[®] Residential Sealant or recommended sealant (and backer rod as necessary) around the door opening at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Tower[®] Residential Sealant, tool sealant bead flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

This method applies to following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



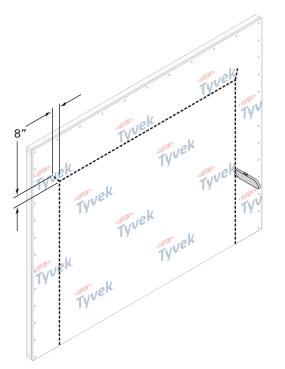


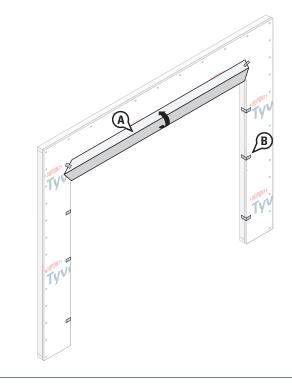
STEP 1

A. Cut rough opening in sheathing for window.

STEP 2

A. Wrap wall as shown in the <u>DuPont[™] Tyvek[®] WRB Installation Instructions</u> section in this guide. Do not install fasteners within 6" of the jambs of the openings and within 9" of the head of the openings.





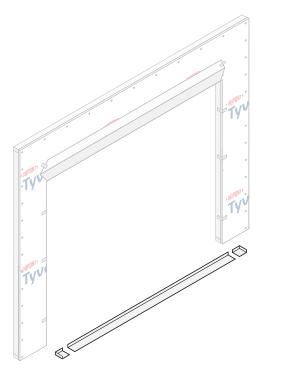
STEP 3

Prepare the Tyvek[®] WRB for Window Installation

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

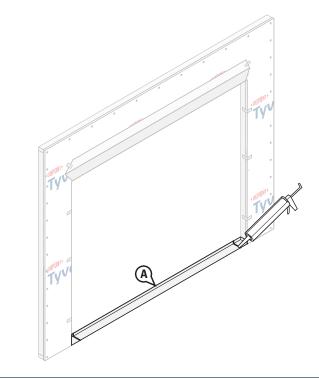
- A. Cut an opening in the **Tyvek[®] WRB** using a flush cut ("O-Cut") around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the Tyvek[®]
 WRB is cut flush with the sheathing and is not wrapped into the rough opening.)
- C. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.

- A. Flip the head flap up to expose the sheathing and temporarily secure with tape.
- B. Temporarily secure **Tyvek[®] WRB** with **DuPont[™] Tyvek[®] Tape** around rough opening before flashing is installed to help facilitate flashing installation.

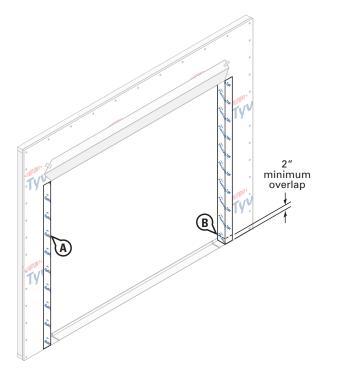


STEP 5

- A. Prepare the sill flashing per manufacturer's recommendation and seal the corner pan flashing with sealant.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.

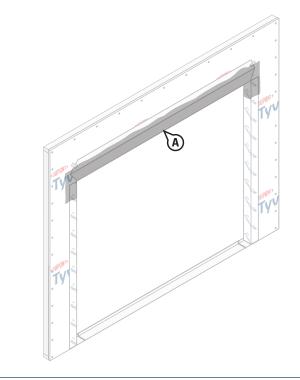


- A. Shim, level and anchor pan per manufacturer's instructions flashing to concrete.
- B. Seal corner pan flashing seams with sealant.



STEP 7

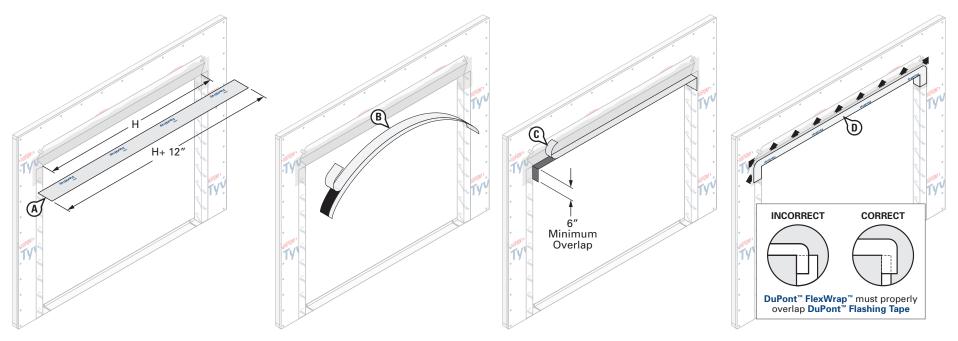
- A. Wrap DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] into the rough opening at each jamb and onto wall face. Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window will be located, ensuring minimum 2"- 3" adhesion onto the face of the wall.
- B. Jamb flashing should be long enough to overlap the sill flashing by at least 2" and be overlapped by future head flashing by at least 2".



STEP 8

A. For exterior gypsum sheathing, apply a recommended adhesive/primer to the top of the jambs and exposed sheathing.

NOTE: A recommended adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.

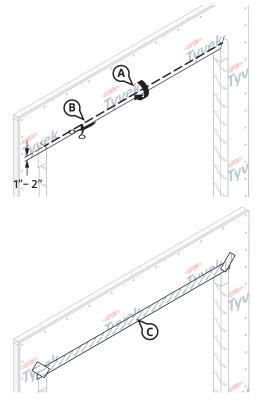


STEP 9

Install DuPont[™] FlexWrap[™] at Head

- A. Cut FlexWrap[™] at least 12" LONGER than width of rough opening head (H). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper, and repeat at opposite corner.
- C. Remove narrow release paper.
- D. Fan out the **FlexWrap**[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.
- E. Use sufficient width of **FlexWrap**[™] to avoid reverse shingling of flashing at the jamb and head interface. See detail above.

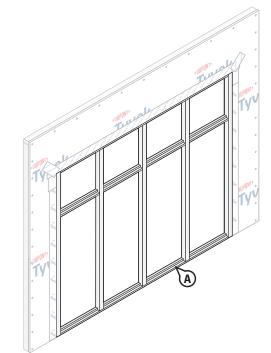
NOTE: DuPont[™] Tyvek[®] Certified Installers may install a 3-piece head (and sill) detail for window openings less than 6 ft. wide. For windows greater than 6 ft. wide, see the <u>Special</u> <u>Considerations</u> section for more information regarding the 3-piece head/sill detail. Contact your local DuPont Building Envelope Specialist for more information about the Certified Installer program.



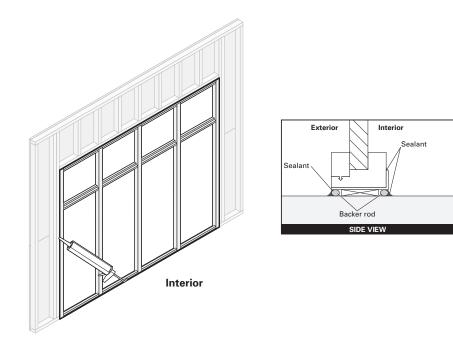
STEP 10

- A. Flip down upper flap of **DuPont[™] Tyvek[®] WRB** so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™].

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.



- A. Install store front window per manufacturer's installation instructions.
- B. Glaze windows per manufacturer's instructions.



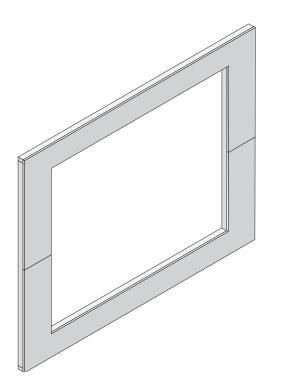
STEP 12

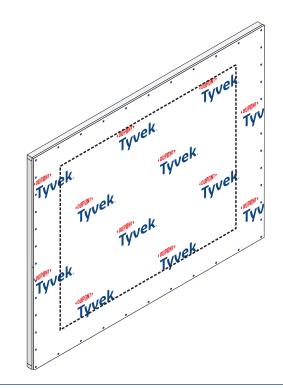
Final Step

A. Install recommended sealant* (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

***NOTE**: Tower® Residential Sealant should **not** be used as the interior perimeter seal for storefront/non-flanged units. Refer to <u>Chemical Compatibility of Representative</u> <u>Building Sealants and Adhesives/Primers</u> for more information on recommended sealants.

This method applies to following products: DuPont[™] Flashing Tape, DuPont[™] StraightFlash[™], and DuPont[™] FlexWrap[™]



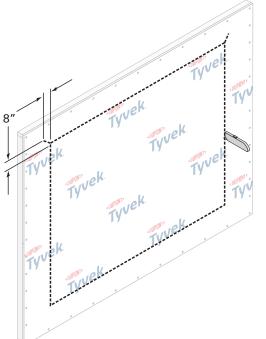


STEP 1

A. Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.

STEP 2

A. Wrap wall as shown in the <u>DuPont[™] Tyvek[®] WRB Installation Instructions</u> section in this guide. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

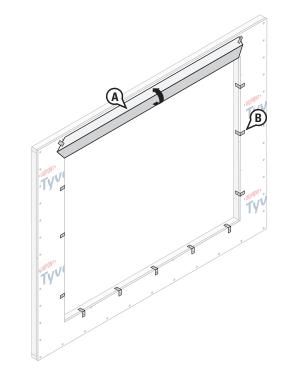


STEP 3

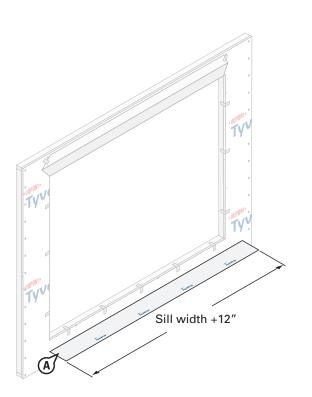
Prepare the Tyvek[®] WRB for Window Installation

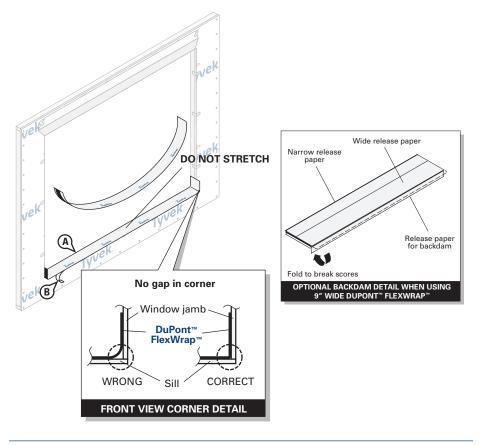
OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Cut an opening in the **Tyvek**[®] **WRB** using a flush cut ("O-Cut") around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the Tyvek[®]
 WRB is cut flush with the sheathing and is not wrapped into the rough opening.)
- C. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.



- A. Flip the head flap up to expose the sheathing and temporarily secure with tape.
- B. Temporarily secure **Tyvek[®] WRB** with **DuPont[™] Tyvek[®] Tape** around rough opening before flashing is installed to help facilitate flashing installation.





STEP 5

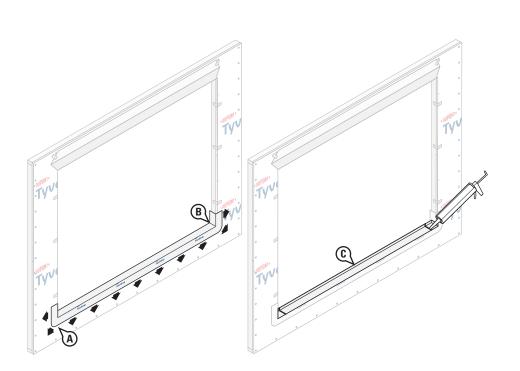
- A. Cut **DuPont[™] FlexWrap[™]** at least 12" **LONGER** than width of rough opening sill (S). Use roll widths sufficient to achieve a minimum of 1" adhesion **BEYOND** where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.

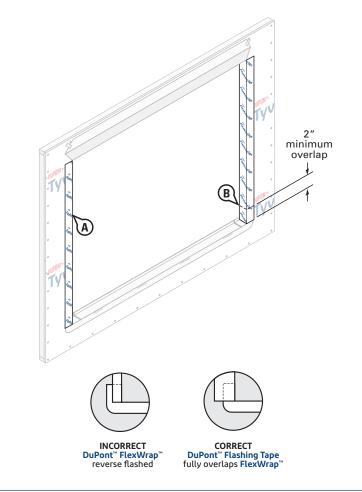
STEP 6

A. Remove wide piece of release paper. Position on horizontal sill by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each jamb. Adhere into rough opening.

OPTIONAL BACK DAM: Fold 9" **FlexWrap**[™] to break perforation. Remove center piece of release paper. Cover horizontal sill to accommodate back dam as appropriate, and adhere into rough opening along sill and up jambs (min 6" on each side). Leave 1" release paper on **FlexWrap**[™] inside rough opening to finish back dam after window installation.

- B. Remove narrow release paper.
- C. Firmly press **FlexWrap**[™] into the corners

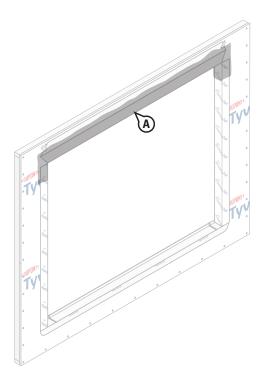




STEP 7

- A. Fan out the **DuPont[™] FlexWrap[™]** at corners and adhere onto face of wall. Continue adhering onto face of wall along sill. Coverage of **FlexWrap[™]** should be 2"- 3" onto the face of the wall.
- B. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.
- C. Shim, level and anchor sill pan flashing and seal corner seams per manufacturer's instructions with Tower[®] Residential Sealant, or recommended sealant,.

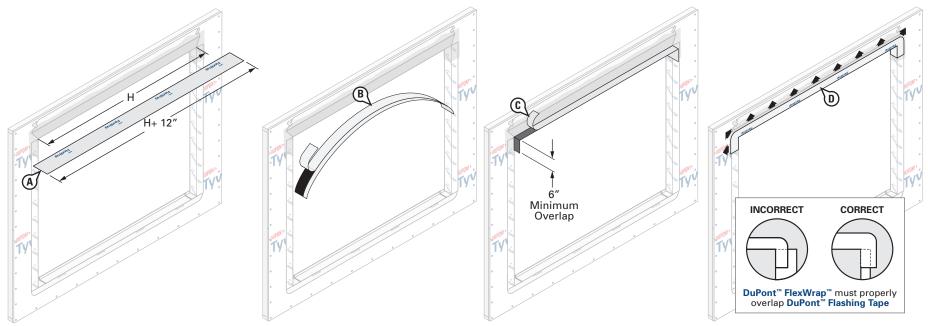
- A. Wrap DuPont[™] Flashing Tape or DuPont[™] StraightFlash[™] into the rough opening at each jamb and onto wall face. Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window will be located, ensuring minimum 2"- 3" adhesion onto the face of the wall.
- B. Jamb flashing should be long enough to overlap the sill flashing by at least 2" and be overlapped by future head flashing by at least 2".



STEP 9

A. For exterior sheathing, apply a recommended adhesive/primer to the top of the jambs and exposed sheathing.

NOTE: A recommended adhesive/primer is not required for wood-based sheathing, except when applying flashing during adverse weather conditions.

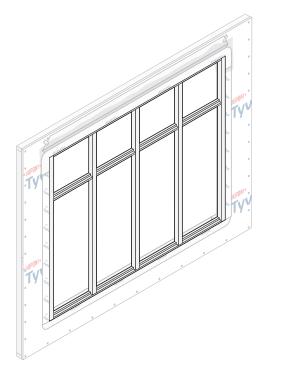


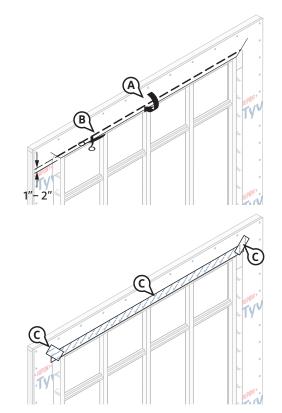
STEP 10

Install DuPont[™] FlexWrap[™] at Head

- A. Cut FlexWrap[™] at least 12" LONGER than width of rough opening head (H). Use roll widths sufficient to achieve a minimum of 1" adhesion BEYOND where the window frame will be located, ensuring 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper, and repeat at opposite corner.
- C. Remove narrow release paper.
- D. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.
- E. Use sufficient width of **FlexWrap**[™] to avoid reverse shingling of flashing at the jamb and head interface. See detail above.

NOTE: DuPont[™] Tyvek[®] Certified Installers may install a 3-piece head (and sill) detail for window openings less than 6 ft. wide. For windows greater than 6 ft. wide, see the <u>Special</u> <u>Considerations</u> section for more information regarding the 3-piece head/sill detail. Contact your local DuPont Building Envelope Specialist for more information about the Certified Installer program.





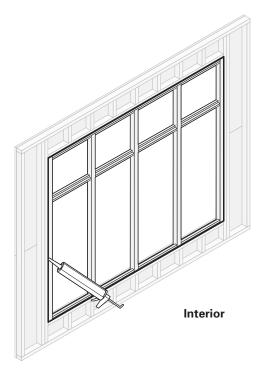
STEP 11

- A. Install storefront window per manufacturer's installation instructions.
- B. Glaze windows per manufacturer's instructions.

STEP 12

- A. Flip down upper flap of **DuPont[™] Tyvek[®] WRB** so it lays flat across head flashing.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB at lower horizontal edge of the head flap.
 NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or DuPont[™] StraightFlash[™].

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.

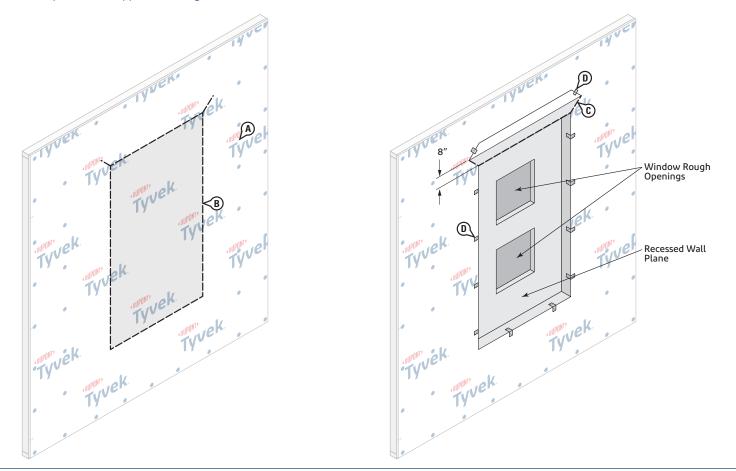


STEP 13

A. Install recommended sealant* (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant, or recommended foam. When using recommended sealant, be sure that the sealant penetrates the grooves of the DuPont[™] FlexWrap[™] around the sill. When using Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant in perimeter openings less than 1/2", apply using the plastic extension tip for the Great Stuff Pro[™] Dispensing Gun during installation.

***NOTE**: Tower[®] Residential Sealant should **not** be used as the interior perimeter seal for storefront/non-flanged units. Refer to <u>Chemical Compatibility of Representative</u> <u>Building Sealants and Adhesives/Primers</u> for more information on recommended sealants.

Complex wall and window flashing conditions may require the use of **Tyvek**[®] **Fluid Applied Products** for part of a wall or window flashing. While there are many variations of this condition, it is important to properly integrate the **Tyvek**[®] **WRB** with the **Tyvek**[®] **Fluid Applied Products** using **StraightFlash**[™] and **FlexWrap**[™]. The following example shows a recessed wall plane treated with **DuPont**[™] **Tyvek**[®] **Fluid Applied WB**+[™] with a window flashed with **Tyvek**[®] **Fluid Applied Products** and integrated with the **Tyvek**[®] **WRB** on the face of the wall. Refer to the *DuPont*[™] *Tyvek*[®] *Fluid Applied Flashing Installation Guidelines* for more information.

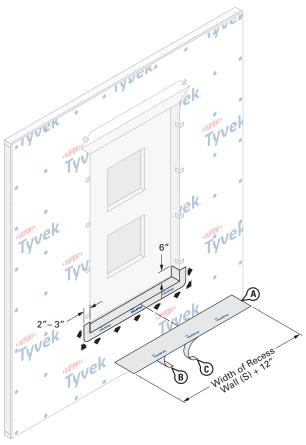


STEP 1

OPTIONAL: Refer to the <u>Alternative Installation Considerations</u> section for guidance regarding trimming the head flap while preparing the **Tyvek**[®] **WRB** if desired instead.

- A. Install Tyvek[®] WRB on wall per <u>DuPont[™] Tyvek[®] Mechanically-Fastened Water-</u> <u>Resistive and Air Barrier (WRB) Installation Guidelines for Buildings Greater Than 4</u> <u>Stories</u> that can be found at <u>building.dupont.com</u>. Do not install fasteners within 6" of the bottom and sides of the openings and within 9" of the top of the recessed wall.
- B. Cut along perimeter of recessed wall plane.

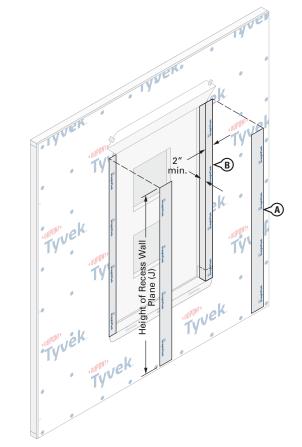
- C. Cut a flap at top of recessed wall plane at a 45° angle to expose 8" of sheathing to allow for installation of transition flashing in Step 4. Flip up to expose the sheathing and temporarily secure flap with **DuPont**[™] **Tyvek**[®] **Tape**..
- D. Temporarily secure **Tyvek**[®] **WRB** with **Tyvek**[®] **Tape** at perimeter of recessed wall plane to facilitate transition flashing installation.



STEP 2

Install FlexWrap[™] at Recessed Wall Sill

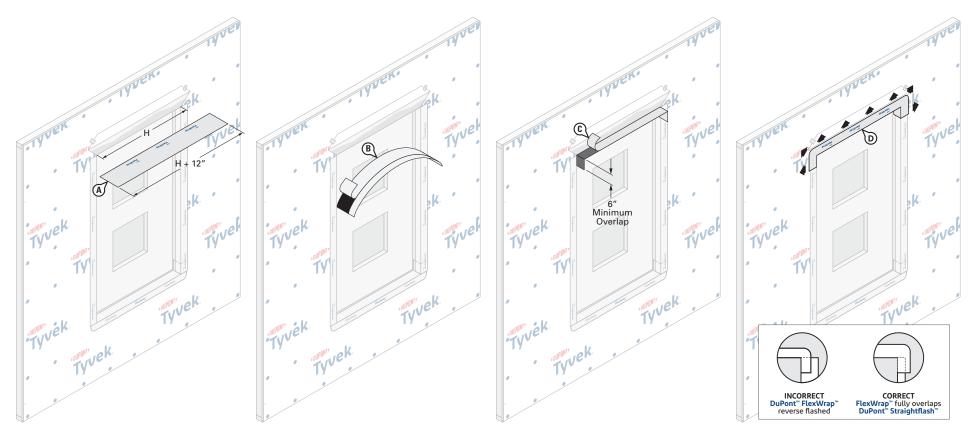
- A. Cut the **FlexWrap**[™] at least 12" **LONGER** than width of recessed wall plane (S).
- B. Remove wide piece of release paper and adhere on horizontal ledge by aligning the inside edge of the narrow release paper with the face of the wall to ensure 2"-3" of the FlexWrap[™] will be adhered to the face of the wall with a minimum of 6" up each side.
- C. Remove narrow piece of release paper. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along sill. Coverage of FlexWrap[™] should be 2"- 3" onto the face of the wall.*



STEP 3

- A. Cut (2) pieces of StraightFlash[™] the height of the recessed wall plane (J) or long enough to overlap the bottom of recessed wall flashing by at least 2" and be overlapped by future top of recess wall flashing by at least 2".
- B. Terminate the **Tyvek[®] WRB** along each side of recessed wall, ensuring the StraightFlash[™] extends 2" onto the face of the wall and 2" into the recess.

*A 3-piece transition flashing method can also be used with **StraightFlash**[™] in combination with **FlexWrap**[™] corners. The **StraightFlash**[™] in installed the width of the bottom or top of recessed wall plane prior to placing the **FlexWrap**[™] corners. The **FlexWrap**[™] corners should be at least 12″ long allowing for 6″ overlap onto the **StraightFlash**[™] at bottom, top, and sides of recessed wall plane.



STEP 4

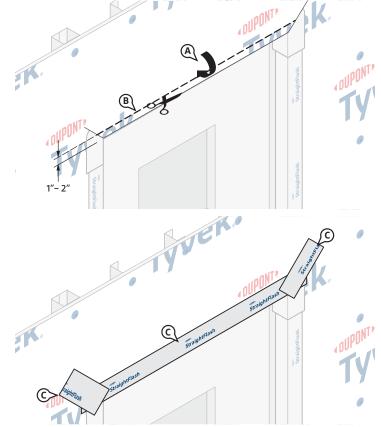
Install DuPont[™] FlexWrap[™] at Top of Recessed Wall

- A. Cut FlexWrap[™] at least 12" LONGER than width of recessed wall plane (H). Use roll widths sufficient to achieve 2"- 3" adhesion onto the face of the wall.
- B. Fold the FlexWrap[™] in half lengthwise to create a slight crease at the center. Remove the wide piece of release paper on one side of the fold. Align the inside edge of the narrow release paper with the face of the wall to ensure 2"- 3" of the FlexWrap[™] will be adhered to the face of the wall. Starting at the crease, adhere the FlexWrap[™] at the center of the horizontal portion of the head framing to ensure

a minimum of 6" down each jamb. Adhere into rough opening at one corner and down the jamb. Remove the remaining release paper, and repeat at opposite corner.

- C. Remove narrow release paper.
- D. Fan out the FlexWrap[™] at corners and adhere onto face of wall. Continue adhering onto face of wall along the head.
- E. Use sufficient width of **FlexWrap**[™] to avoid reverse shingling of flashing at the jamb and head interface. See detail above.

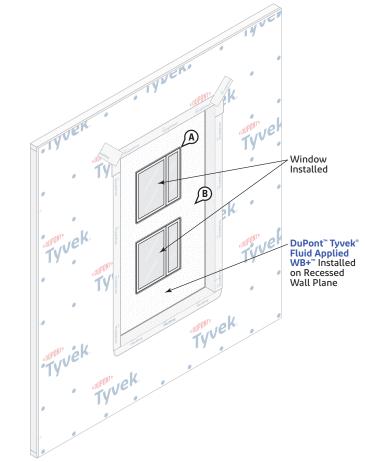
*A 3-piece transition flashing method can also be used with StraightFlash[™] in combination with FlexWrap[™] corners. The StraightFlash[™] in installed the width of the bottom or top of recessed wall plane prior to placing the FlexWrap[™] corners. The FlexWrap[™] corners should be at least 12" long allowing for 6" overlap onto the StraightFlash[™] at bottom, top, and sides of recessed wall plane.



STEP 5

- A. Flip down **Tyvek[®] WRB** flap so it lays flat above the top edge of the recessed wall plane.
- B. Cut 1"- 2" strip of the Tyvek[®] WRB above the top edge of the recessed wall plane. NOTE: Skip this step if the head flap was trimmed while preparing the Tyvek[®] WRB per the <u>Alternative Installation Considerations</u> section.
- C. Terminate head flap as shown by continuously sealing the horizontal and then the diagonal seams with DuPont[™] Tyvek[®] Tape, DuPont[™] Flashing Tape, or StraightFlash[™].

NOTE: For a more robust head flap termination, seal with **DuPont[™] Flashing Tape** or **StraightFlash[™]**. Install mechanical fasteners through flashing as needed for increased holding power. See the table in the <u>Applicable Structures and Performance Criteria</u> section for more information on air barrier requirements and head flap terminations.



STEP 6

A. Install DuPont[™] Tyvek[®] Fluid Applied Flashing and Joint Compound+ and/or DuPont Self-Adhered Flashing Products and window per the <u>DuPont[™] Tyvek[®] Fluid Applied</u> <u>WB+[™] and DuPont Flashing Products Installation Guidelines</u>.

NOTE: Window/flashing installation sequence will vary by project and window type. All installations must allow for drainage at window sill.

B. Install DuPont[™] Tyvek[®] Fluid Applied WB+[™] per the <u>DuPont[™] Tyvek[®] Fluid Applied</u> <u>WB+[™] and DuPont Flashing Products Installation Guidelines</u>. Overlap the Tyvek[®] Fluid Applied WB+[™] onto the StraightFlash[™] and FlexWrap[™] at recess wall transition by a minimum of 2".

Façade Considerations

Water-resistive barrier performance is dependent upon the ability of the facade to drain. **DuPont[™] Tyvek[®] HomeWrap[®]** and **Tyvek[®] CommercialWrap[®]** provide >90% drainage efficiency, and **Tyvek[®] DrainWrap[™]**, **Tyvek[®] StuccoWrap[®]**, and **Tyvek[®] CommercialWrap[®] D** provide >98% drainage efficiency when tested in accordance with ASTM E2273. The following must be considered for specific facades:

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 water resistive barrier complying with ASTM E 2556, Type I, or a water resistive barrier which is separated from the stucco by an intervening, substantially nonwater-absorbing layer or drainage space. "The individual layers shall be installed independently such that each layer provides a separate continuous plane and any flashing intended to drain to the water-resistive barrier is directed between the layers." **DuPont™ Tyvek® WRBs** used behind stucco should be separated from the stucco by a second layer of **Tyvek**[®] **WRB**, a layer of Grade D building paper, felt, rigid foam board or the paper backing of paper-backed lath. **DuPont[™] Tyvek[®] DrainVent[™] Rainscreen** can also be used as the intervening layer over the WRB. The first layer (directly over sheathing or studs) serves as the wall system's water-resistive barrier and is integrated with window and door flashings, the weep screed at the bottom of the wall and any through wall flashings or expansion joints. Lath shall be installed over the intervening layer in accordance with ASTM C1063 Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster and applicable codes. Rigid foam board, when installed over Tyvek[®] WRB as an intervening layer, will provide enhanced structural support to the **Tyvek**[®] **WRB** and may reduce the required number of fasteners used for the attachment of the **Tyvek**[®] **WRB** if installed as soon as practically possible. Tyvek[®] StuccoWrap[®], Tyvek[®] DrainWrap[™] or Tyvek[®] CommercialWrap[®] D is recommended for this application, since these products provide >98% drainage efficiency when tested in accordance with ASTM E2273.

Tyvek[®] **HomeWrap**[®] and **Tyvek**[®] **CommercialWrap**[®] provide >90% drainage efficiency when tested in accordance with ASTM E2273. **DuPont Self-Adhered Flashing Products** or recommended alternate may be required for high performance installations.

Brick (or Other Stacked/Anchored Masonry Veneers)

The Brick Industry Association recommends a 1-inch air-space in front of wood stud construction and a 2 inch air-space in front of steel stud construction. Consistent with these requirements and recommendations, **Tyvek® WRBs** shall be separated from the brick veneer by a nominal 1 inch air-space. Window and door flashing, and throughwall flashing shall be integrated with the **Tyvek® WRB** layer ensuring proper shingling. For maximum moisture management and drying of the wall system, the airspace in front of the **Tyvek® WRB** shall be vented to the exterior at the top and bottom of the wall. Some types of brick ties will act as additional fasteners for **Tyvek® WRBs**, and if installed as soon as practically possible after the **Tyvek**[®] **WRB**, may reduce the required number of fasteners used for the initial attachment of the **Tyvek**[®] **WRB**. **DuPont Self-Adhered Flashing Products** or recommended alternate patch is required for high performance installations.

Stone Veneer (or Other Adhered Masonry Veneers)

The 2018 International Building Code (Section 1404.7) requires two layers of air and water barrier behind stone veneers over wood frame construction. When used behind stone veneer, Tyvek[®] WRBs shall be installed in a similar manner as they are installed behind stucco. The **Tyvek**[®] **WRB** should be separated from the stone and mortar by a second layer of **Tyvek**[®] **WRB**, a layer of grade D building paper, felt, exterior continuous foam insulation or the paper backing of paper-backed lath. Tyvek[®] DrainVent[™] Rainscreen can also be used as the intervening layer over the WRB. The first layer (directly over sheathing or studs) serves as the wall system's air and water barrier and shall be integrated with window and door flashings, the weep screed at the bottom of the wall and any through wall flashing or expansion joints. Lath shall be installed over the intervening layer (second layer) in accordance with ASTM C1063 Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster and applicable codes. When exterior continuous foam insulation is used as the second layer, it is installed over the **Tyvek**[®] **WRB**. **Tyvek**[®] StuccoWrap[®], Tyvek[®] DrainWrap[™] or Tyvek[®] CommercialWrap[®] D is recommended for this application, since these products provide >98% drainage efficiency when tested in accordance with ASTM E2273. Tyvek[®] HomeWrap[®] and Tyvek[®] CommercialWrap[®] provide >90% drainage efficiency when tested in accordance with ASTM E2273. DuPont Self-Adhered Flashing Products or recommended alternate patch is required for high performance installations.

Wood Siding

Tyvek® WRBs and 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. When installed over exterior continuous insulation, the Western Red Cedar Lumber Association and other wood siding manufacturers recommend that furring strips are used to create an air space between foam sheathing and siding. Other recommendations that should be followed to minimize potential problems are:

- Use thicker siding patterns in widths of 8 inches or less. Thick, narrow siding is more stable than thinner, wider patterns and better able to resist dimensional changes.
- Use kiln-dried siding over rigid foam sheathing.
- Proper pre-finishing is essential.
- Use light color finish coats to maximize heat reflection and reduce dimensional

Façade Considerations

movement.

 DuPont[™] Tyvek[®] StuccoWrap[®], DuPont[™] Tyvek[®] DrainWrap[™] or DuPont[™] Tyvek[®] CommercialWrap[®] D applied over the foam sheathing is recommended for this application.

In high exposure installations, enhanced drainage and water management may be provided by using **Tyvek**[®] **StuccoWrap**[®], **Tyvek**[®] **DrainWrap[™]** or **Tyvek**[®] **CommercialWrap**[®] **D**, by installing **DuPont[™] Tyvek**[®] **DrainVent[™] Rainscreen** or other drainage mesh over the water-resistive barrier, or by creating rainscreen cladding with a larger air space behind the siding using furring strips. If furring is installed over the **DuPont[™] Tyvek**[®] **WRB** to create a rainscreen, the primary fastener spacing can exceed 18". **DuPont[™] Tyvek**[®] **HomeWrap**[®] and **Tyvek**[®] **CommercialWrap**[®], and **Tyvek**[®] **CommercialWrap**[®] **D** provide >98% drainage efficiency when tested in accordance with ASTM E2273.

Fiber Cement Siding

Tyvek[®] WRBs and 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[®] StuccoWrap[®], Tyvek[®] DrainWrap[™] or Tyvek[®] CommercialWrap[®] D, by installing Tyvek[®] DrainVent[™] Rainscreen or other drainage mesh over the water-resistive barrier, or by creating rainscreen cladding with a larger air space behind the siding using furring strips. If furring is installed over the Tyvek[®] WRB to create a rainscreen, the primary fastener spacing can exceed 18″. In high wind areas at gable end walls, FEMA recommends fiber cement siding be installed over wood sheathing rather than over plastic foam sheathing. Tyvek[®] WRBs and fiber cement siding shall be installed according to manufacturer's instructions, industry standards and applicable codes. Tyvek[®] HomeWrap[®] and Tyvek[®] StuccoWrap[®], and Tyvek[®] CommercialWrap[®] D provide >98% drainage efficiency when tested in accordance with ASTM E2273.

Vinyl Siding

Vinyl Siding is installed directly over **Tyvek**[®] **WRBs**. Vinyl siding shall be installed in accordance with manufacturer's instructions, industry standards and applicable codes, including ASTM D4756-15 *Standard Practice for Installation of Rigid Poly* (*Vinyl Chloride*) (*PVC*) *Siding and Soffit*. In high wind areas at gable end walls, FEMA recommends vinyl siding be installed over wood sheathing rather than over plastic foam sheathing.

EIFS

Tyvek[®] WRBs and EIFS cladding shall be installed according to manufacturer's instructions and industry standards. In order to promote drainage, it is recommended that **Tyvek[®] StuccoWrap[®]**, **Tyvek[®] DrainWrap[™]** or **Tyvek[®] CommercialWrap[®] D** be installed behind the exterior insulation. Window and door flashing, and through wall flashing shall be integrated with the **Tyvek[®] WRB** layer ensuring proper shingling. The successful installation and performance of EIFS cladding is dependent upon the proper design and construction of the adjacent materials and systems of the structure.

Tyvek[®] HomeWrap[®] and **Tyvek[®] CommercialWrap[®]** provide >90% drainage efficiency, and **Tyvek[®] DrainWrap[™]**, **Tyvek[®] StuccoWrap[®]**, and **Tyvek[®] CommercialWrap[®] D** provide >98% drainage efficiency when tested in accordance with ASTM E2273.

Metal Panel

Tyvek® WRBs and metal panel cladding systems shall be installed according to manufacturer's instructions and industry standards. **DuPont™ StraightFlash™**, **DuPont™ Flashing Tape**, or recommended alternate patch can be installed behind all metal installation brackets and hat-channels fasteners for additional air and water infiltration resistance.

NOTE: The maximum in-service temperature for Tyvek[®] WRBs, DuPont Self- Adhered Flashing Products, and DuPont[™] Tyvek[®] Fluid Applied Products is 180°F.

Exterior Insulation

When using **Tyvek**[®] **WRBs** with **DuPont Exterior Continuous Insulation Products**, please refer to the Installation Bulletin: <u>Integrating DuPont Building Envelope Solutions</u>. <u>Products with DuPont Exterior Continuous Insulation</u> for guidance on fasteners and product installation. **Tyvek**[®] **WRBs** and exterior continuous insulation shall be installed according to the manufacturer's instructions and industry standards.

Tyvek[®] WRBs can be installed either over the rigid exterior continuous insulation or underneath between the sheathing and the exterior insulation. In order to promote drainage, it is recommended that Tyvek[®] StuccoWrap[®], Tyvek[®] DrainWrap[™] or Tyvek[®] CommercialWrap[®] D be used when installing the Tyvek[®] WRB layer between the sheathing and exterior continuous insulation. Window flashing, door flashing, and through wall flashing shall be integrated with the Tyvek[®] WRB layer ensuring proper shingling. The successful installation and performance of exterior continuous insulation is dependent upon the proper design and construction of adjacent materials and systems of the structure.

NOTE: **Tyvek[®] DrainVent[™] Rainscreen** and **DuPont[™] RainVent[™] Battens** can be used to improve the ventilation and draining space behind wood, stucco or stone masonry, vinyl, and fiber cement cladding types.

Product Composition and UV Stability

DuPont[™] Tyvek[®] WRBs used in

construction products are made from 100% flash spunbonded high density polyethylene fibers which have been bonded together by heat and pressure, without binders or fillers, into a tough durable sheet structure. Additives have been incorporated into the polvethylene to provide ultraviolet light resistance. DuPont requires that **DuPont[™] Tyvek**[®] HomeWrap[®], Tyvek[®] DrainWrap[™], Tyvek[®] StuccoWrap[®], and Tyvek[®] ThermaWrap[®] LE be covered within 4 months (120 days) of installation. DuPont requires that **DuPont[™] Tyvek[®] CommercialWrap[®]** and Tyvek[®] CommercialWrap[®] D be covered within 9 months (270 days) of installation.

DuPont Self-Adhered Flashing Products are made from a synthetic rubber adhesive, and a top sheet of flash spunbonded high density polyethylene fibers or polypropelene film. Additives have been incorporated into these materials to provide ultraviolet light resistance. DuPont requires that DuPont[™] FlexWrap[™], DuPont[™] FlexWrap[™] EZ, DuPont[™] StraightFlash[™] and DuPont[™] VersaFlange[™] be covered within nine months (270 days) of installation. DuPont requires that DuPont[™] Flashing Tape be covered within 4 months (120 days) of installation.

DuPont[™] Tyvek[®] Fluid Applied Products

are silyl-terminated polyether based. They 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+** are to be covered within 9 months (270 days) of installation.

Design Considerations

DuPont Building Envelope Solutions Products are to be used as outlined in this installation guideline. **DuPont Self-Adhered Flashing** and **Tyvek**[®] **Fluid Applied Flashing and Joint Compound+** should only be used to seal penetrations and flash openings in buildings. **Tyvek**[®] **WRBs, Tyvek[®] Fluid Applied Products**, and **DuPont Self-Adhered Flashing Products** are not to be used in roofing applications.

When installed in conjunction with other building materials, **Tyvek® WRBs, DuPont Self-Adhered Flashing Products**, and **Tyvek® Fluid Applied Products** must be properly shingled with these materials such that water is diverted to the exterior of the wall system. **Tyvek® WRBs** and **Tyvek® Fluid Applied WB+**[™] are secondary weather barriers. The outer facade is the primary barrier.

Follow facade manufacturer's installation and maintenance requirements for all facade systems in order to maintain water holdout properties and ensure performance of **Tyvek[®] WRBs** and **Tyvek[®] Fluid Applied WB+**[™].

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. Use of additives, coatings or cleaners on or in the facade system may impact the performance of **Tyvek[®] WRBs** and **Tyvek[®] Fluid Applied WB+**[™].

For superior protection against bulk water penetration, DuPont suggests a system combining a quality exterior facade, a good secondary air and water barrier and exterior sheathing, high quality windows and doors, and appropriate flashing materials paying attention to proper installation of each component.

In a system where no exterior sheathing is used and **Tyvek**[®] **WRBs** are installed directly over the wall studs, exterior facade materials should be selected to ensure maximum protection against water intrusion. Careful workmanship and proper installation of each component is very important.

Depending on job site conditions, stains may appear on the **Tyvek**[®] **Fluid Applied Products**, these discolorations will not alter the products' performance.

Safety and Handling Warning

Tyvek[®] WRBs are slippery and should not be used in any application where they will be walked on. In addition, because they are slippery, DuPont recommends using kickjacks, scaffolding, or lifts for exterior work above the first floor. If ladders must be used, extra caution must be taken to use them safely by following the requirements set forth in ANSI Standards 14.1, 14.2, and 14.5 for ladders made of wood, aluminum, and fiberglass, respectively. **DuPont[™] Tyvek[®]** is combustible and should be protected from flames and other high heat sources. **DuPont[™] Tyvek**[®] will melt at 275°F (135°C) and if the temperature of **DuPont[™] Tyvek[®]** reaches 750°F (400°C), it will burn and the fire may spread and fall away from the point of ignition. For more information, call 1-833-338-7668.

DuPont Self-Adhered Flashing 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** will melt at temperatures greater than 250°F (121°C). **DuPont Self-Adhered Flashing Products** are combustible and should be protected from flames and other high heat sources. **DuPont Self-Adhered Flashing Products** will not support combustion if the heat source is removed. However, if burning occurs, ignited droplets may fall away from the point of ignition. For more information, call 1-833-338-7668.

Tower[®] Residential Sealant (formerly DuPont[™] Residential Sealant) is irritating to skin, eyes, and respiratory tract. For proper usage, follow directions stated on the product label. For health information, refer to the Safety Data Sheet (SDS) or call Chemtrec at 1-800-424-9300.

Tyvek[®] Fluid Applied Products may cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause irritation of respiratory tract. Tyvek[®] Fluid Applied Products are mixtures. Safety and Handling information is based on the products' components. Refer to each product's Safety Data Sheet (SDS) for further information.

Safety and Handling (continued)

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.

Use only as directed. Avoid inhalation of vapor aerosol.

Caution

DuPont[™] Tyvek[®] Fluid Applied Products are FOR PROFESSIONAL USE ONLY. Do

not handle until all safety precautions have been read and understood. Avoid breathing dust/fumes/gas/mist/vapors/ spray. Vapor and aerosols are harmful when using a spray application. If airborne particles are inhaled while spraying, immediately, immediately move from exposure to fresh air and contact a physician. Use in a well-ventilated area. A 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 ust be used when spraying. NIOSH-approved N95 disposable safety mask with splash impact goggles can be used for manual application such as troweling or rolling, and for clean-up. If vapors are inhaled, immediately move from exposure to fresh air and contact a physician.

Contaminated work clothing should not be allowed out of the workplace. Wear protective aloves/protective clothing/eve 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. Avoid contact with eyes and skin.

When cured, Great Stuff Pro[™] Window & Door Polyurethane Foam Sealant is

combustible and will burn if exposed to open flame or sparks from highenergy sources. Do not expose to temperatures above 240°F (116°C). For more information, consult the Safety Data Sheet (SDS), call DuPont at 1-866-583-2583. When air sealing buildings, ensure that combustion appliances, such as furnaces, water heaters, wood burning stoves, gas stoves and gas dryers are properly vented to the outside. See website: <u>https://www.nrel.gov/docs/</u> fy14osti/61326.pdf.

In Canada visit: <u>https://nrc-publications.</u> <u>canada.ca/eng/view/ft/?id=96acba7c-</u> <u>afd4-4ea1-94b0-1f8f3500c582</u>. **Great Stuff Pro**[™] polyurethane foam sealant and adhesive products contain isocvanate and a flammable blowing agent. Read all instructions and the Safety Data Sheet (SDS), carefully before use. Eliminate all sources of ignition before use. Cover all skin. Wear long sleeves, gloves, and safety glasses or goggles. Not for use in aviation, or food/beverage contact, or as structural support in marine applications. Provide adequate ventilation or wear proper respiratory protection. Contents under pressure. Not to be used for filling closed cavities or voids such as behind walls and under tub surrounds; this improper use of the product could result in the accumulation of flammable vapors and/or uncured material. Failure to follow the warnings and instructions provided with the product, and/or all applicable rules and regulations, can result in injury or death.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplied by DuPont can give assurance that mold will not develop in any specific system.

Read all instructions and the Safety Data Sheet (SDS) carefully before use.

For more information, visit greatstuffpro.com or building.dupont.com

Hazard Statement

Tyvek[®] Fluid Applied Products may cause

an allergic skin reaction. May cause serious eye damage. May cause genetic defects. May damage fertility or the unborn child. As it relates to California Prop 65, Tyvek® Fluid Applied Products can expose you to substances including Crystalline silica, which is /are known to the State of California to cause cancer. For more information, visit p65Warnings.ca.gov.

For More Information

Visit the Quick Links section of our website (https://www.dupont.com/building/ resources.html) where you'll find links to essential documents and resources to help you get the job done right:

- Installation Guidelines
- Safety Data Sheets (SDS)
- CAD Drawings
- DuPont Performance Building Solutions Document Library

For complete warranty information please call 1-833-338-7668 or visit us at <u>building.dupont.com</u>.

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For more information about DuPont Performance Building Solutions, please call 1-833-338-7668 or visit us at <u>building.dupont.com</u>