DUPONT SELF-ADHERED FLASHING SYSTEMS INSTALLATION GUIDELINES
NON-FLANGED WINDOW WITH STRUCTURAL STEEL ALONG THE SILL AND HEAD
USING DUPONT™ STRAIGHTFLASH™
FOR BUILDINGS GREATER THAN 4 STORIES AND HIGH PERFORMANCE INSTALLATIONS OF ANY HEIGHT
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### Note
This installation guideline outlines recommended installation techniques and details for DuPont™ self-adhered flashing products and where applicable, DuPont™ Tyvek® CommercialWrap® and/or DuPont™ Tyvek® CommercialWrap® D, referred to in this document as DuPont™ Tyvek® air and water barriers.
Non-Flanged Window with Structural Steel along the Sill and Head Using DuPont™ StraightFlash™

Applicable Products

DuPont Self-Adhered Flashing Systems

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>WIDTH</th>
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</thead>
<tbody>
<tr>
<td>DuPont™ StraightFlash™</td>
<td>4 in</td>
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<td>9 in</td>
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</tbody>
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Required Materials Based on Project Requirements, Details, and Specifications*

<table>
<thead>
<tr>
<th>PRODUCT</th>
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<tbody>
<tr>
<td>DuPont™ Adhesive/Primer</td>
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<tr>
<td>DuPont™ Tyvek® Tape</td>
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<tr>
<td>DuPont™ Tyvek® Wrap Cap Fasteners</td>
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<tr>
<td>DuPont™ Window &amp; Door Foam</td>
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<tr>
<td>Backer Rod</td>
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<tr>
<td>Brushes for Surface Preparation</td>
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<tr>
<td>J-Roller</td>
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<tr>
<td>“L” shaped back dam is a 3/4” corner guard (used on interior gypsum)</td>
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<tr>
<td>Sealant*</td>
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</tbody>
</table>

General Instructions

DuPont™ self-adhered flashing products should be installed on clean, dry surfaces that are free of frost. Wipe surfaces to remove moisture, dirt, grease and other debris that could interfere with adhesion.

Apply pressure along entire surface for a good bond using a J-roller or alternate tool without sharp edges (such as a plastic carpet tuck tool) to assist with application of uniform pressure during installation of DuPont™ self-adhered flashing products.

Remove all wrinkles and bubbles by smoothing surface and repositioning as necessary.

Before applying 3” DuPont™ Tyvek® Tape, surfaces should be dry and clean. During installation apply firm, even pressure with hand or “J” roller.

In lieu of temporarily taping, DuPont™ Tyvek® flaps at window head and jambs can be tucked under the DuPont™ Tyvek® air and water barrier.

3” DuPont™ Tyvek® Tape should not be used to terminate DuPont™ Tyvek® flaps at window jambs and head when the building envelope design requirements exceed ASTM E1677, 65 mph equivalent structural load and 15 mph equivalent wind-driven rain water infiltration resistance.

Door and window rough sill framing must be level or slightly sloped to the exterior to ensure proper drainage to the exterior.

DuPont™ Window & Door Foam can be used in lieu of sealant and backer rod to create a continuous seal around the interior perimeter of the window openings. Refer to the DuPont™ Window & Door Foam FAQ posted on www.weatherization.tyvek.com for additional usage information.

DuPont™ self-adhered flashing products perform best when installed at temperatures above 25°F (–4°C).

Avoid placing DuPont™ Tyvek® Wrap Cap Fasteners where flashing will be installed; however, DuPont™ Tyvek® Wrap Cap Fasteners can be applied over the flashing.

For high performance requirements, the use of DuPont™ StraightFlash™ with DuPont™ Tyvek® Wrap Cap screws is required to secure the head flap of the windows.

Adverse weather conditions or cold temperatures may require use of a 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 DuPont™ Adhesive/Primer.

Please call 1-800-44-Tyvek (800-448-9835), visit www.weatherization.tyvek.com, or consult your local DuPont™ Tyvek® Specialist for additional information and installation support.

Warranty


*Apply 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.
Key Installation Requirements for Drainable Window/Door Installation Under the Limited Product and Labor Warranty

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

- **When properly installed, DuPont™ StraightFlash™ provides nail sealability at window/door openings to help protect critical window-wall interfaces. Metal sill pan flashing may be used, but must not replace DuPont™ StraightFlash™ sill flashing that provides nail sealability.**
- **DuPont™ self-adhered flashing products comply with AAMA 711-13, Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products, which has a modified version of ASTM D 1970 and it is more representative for vertical wall applications.**
- **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 DuPont™ Tyvek® air and water barrier in accordance with the with the details in this installation guideline. DuPont™ self-adhered flashing products must be applied with a minimum 2” lap onto the air and water barrier.**
- **Review the sealant manufacturer’s literature or label to confirm that the products used have the chemical and adhesive properties necessary for use with the DuPont flashing materials. Refer to Chemical Compatibility of Representative Building Sealants (K-27282) for more information about chemical compatibility.**
- **DuPont requires that DuPont™ StraightFlash™ be covered within nine months (270 days) of installation.**
- **Ensure the sealant materials meet the installation temperature requirements of the sealant manufacturer.**
- **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, bump-outs), 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 DuPont™ Tyvek® air and water barrier products visit www.weatherization.tyvek.com**
- **Field testing the window / door and wall installation as a complete system is a recommended best practice.**
- **Use of trained installers is highly recommended.**

**NOTE:** In order to make a claim under the DuPont Weatherization Products 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. In the event that a specific detail or installation technique is not covered in the DuPont Installation Guidelines at the time you are building, then the general principles and Key Installation Requirements outlined in this document must have been followed in order to make a claim under the warranty. Compliance prior, during and post construction with the Key Installation Requirements are at the sole discretion of DuPont. Please contact DuPont or a DuPont™ Tyvek® Specialist if you have any questions in connection with any DuPont Installation Guideline.
Non-Flanged Window with Structural Steel along the Sill and Head After DuPont™ Tyvek® Air and Water Barrier is Installed

Method Applies to DuPont™ StraightFlash™

**STEP 1**

A. Wrap wall with DuPont™ Tyvek® air and water barrier as shown in the DuPont™ Tyvek® Mechanically Fastened Air and Water Barrier Installation Guidelines (For Buildings Greater Than 4 stories and High Performance Installations of Any Height) that can be found at www.weatherization.tyvek.com.

B. If necessary, cut slits above and below the structural steel at the window head and sill, respectively so the Tyvek® air and water barrier lays flat against the sheathing prior to installing fasteners.

C. Do not install fasteners within 6” of the sills and jambs of the openings and within 9” of the head of the openings.

**NOTE:** If additional protection is desired, install DuPont™ StraightFlash™ over the vertical leg of the structural steel at window sill, extending a minimum of 2” onto the sheathing, prior to installation of the Tyvek® air and water barrier.
Non-Flanged Window with Structural Steel along the Sill and Head Using DuPont™ StraightFlash™

**STEP 2**
A. Cut the DuPont™ Tyvek® air and water barrier flush with the rough opening at jambs. Continue cut above and below the structural steel at the window head and sill, respectively, if cuts were not made in STEP 1.
B. Cut a head flap in the DuPont™ Tyvek® air and water barrier at 45° to expose 8” of sheathing to allow for head flashing installation.

**STEP 3**
A. Flip the head flap up to expose the steel angle and sheathing and temporarily secure with DuPont™ Tyvek® Tape.

**NOTE:** In lieu of temporarily taping, DuPont™ Tyvek® flaps at window head can be tucked under the DuPont™ Tyvek® air and water barrier.
**Non-Flanged Window with Structural Steel along the Sill and Head Using DuPont™ StraightFlash™**

**STEP 4**
A. Cut a piece of 9” DuPont™ StraightFlash™ the length of the sill (S) plus an additional 4”.

**STEP 5**
Install DuPont™ StraightFlash™ onto bottom of structural steel at sill.

A. Fold DuPont™ StraightFlash™ along the most narrow piece of release paper to break perforations, then remove the most narrow piece to expose butyl.

B. Center the folded DuPont™ StraightFlash™ under the structural steel so it extends 2” beyond each edge of the steel. Adhere the exposed butyl tightly into the corner along the structural steel and onto the DuPont™ Tyvek® air and water barrier. Use the remaining release papers to guide the StraightFlash™ tight into the corner.

C. Starting with the middle piece, remove the remaining release papers, one at a time, and adhere the exposed butyl to the underside of the structural steel.

D. If necessary, trim any DuPont™ StraightFlash™ that extends beyond the front edge of the structural steel.
**Non-Flanged Window with Structural Steel along the Sill and Head Using DuPont™ StraightFlash™**

**STEP 6**

A. Cut the DuPont™ StraightFlash™ along the side edges of the structural steel to the bottom corners of the rough opening to create flaps.

B. Adhere the resulting DuPont™ StraightFlash™ flaps to the DuPont™ Tyvek® air and water barrier.

**STEP 7**

A. Prepare the inner sill flashing by cutting a piece of 9” DuPont™ StraightFlash™ the length of the sill plus an additional 12”. 
Non-Flanged Window with Structural Steel along the Sill and Head Using DuPont™ StraightFlash™

STEP 8

A. Align the DuPont™ StraightFlash™ along the inside edge of the window sill framing and adhere onto framing surface and structural steel, extending 6" up the jambs.
B. Make vertical cuts in the DuPont™ StraightFlash™ along the edges of the window jamb to the corners of the sill rough opening.
C. Fold the resulting StraightFlash™ flap around the structural steel and adhere onto the StraightFlash™ installed at the underside of the structural steel.

NOTE: All flashing should be applied with firm hand pressure and/or with J-roller to ensure maximum adhesion.

STEP 9

A. If necessary, trim any DuPont™ StraightFlash™ that extends beyond the front edge of the structural steel.

NOTE: Be careful not to cut the previously installed StraightFlash™ or DuPont™ Tyvek® air and water barrier.
Non-Flanged Window with Structural Steel along the Sill and Head Using DuPont™ StraightFlash™

**STEP 10**

A. Prepare the inner jamb flashing by cutting two (2) pieces of DuPont™ StraightFlash™ the height (J) of the jamb rough opening.

B. Align the StraightFlash™ with the interior edge of the jamb framing. Adhere onto inside surface of jamb framing, extending a minimum of 2” onto the DuPont™ Tyvek® air and water barrier on the face of the wall.

**NOTE:** The StraightFlash™ on the face of the wall must extend beyond the side edges of the StraightFlash™ installed at the sill.

**STEP 11**

A. Prepare the inner head flashing by cutting a piece of 9” DuPont™ StraightFlash™ the length of the head rough opening plus 4”.

B. Align the StraightFlash™ along the inside edge of the window head framing and adhere onto framing surface and underside of structural steel, extending 2” down each jamb.
**Non-Flanged Window with Structural Steel along the Sill and Head Using DuPont™ StraightFlash™**

**STEP 12**
A. Make cuts in the DuPont™ StraightFlash™ along each jamb of the rough opening to the corner of the window head.
B. Adhere the resulting StraightFlash™ flaps onto the top of the structural steel.

**STEP 13**
A. If necessary, trim any DuPont™ StraightFlash™ that extends beyond the front edge of the structural steel.
Non-Flanged Window with Structural Steel along the Sill and Head Using DuPont™ StraightFlash™

**STEP 14**
A. Apply DuPont™ Adhesive/Primer to the top of the jambs and exposed sheathing.

**STEP 15**
A. Prepare flashing for the top of the structural steel by cutting a piece of 9” DuPont™ StraightFlash™ the length of the head rough opening plus 4”.
B. Align the StraightFlash™ along the front edge of the structural steel and adhere onto the top surface and vertical leg of the structural steel, extending onto sheathing above. The StraightFlash™ should extend beyond the flashing at each jamb.
**STEP 16**

A. Cut the DuPont™ StraightFlash™ along the outside edges of the structural steel to the top corners of the rough opening.

B. Adhere the resulting StraightFlash™ flaps onto the jamb flashing.

**STEP 17**

A. Flip down upper flap of DuPont™ Tyvek® air and water barrier so it lays flat across head flashing.

B. Trim 1”- 2” above the window opening.

C. Terminate the DuPont™ Tyvek® air water barrier with 4” DuPont™ StraightFlash™.

D. Apply 4” DuPont™ StraightFlash™ over the diagonal seams.

E. Install DuPont™ Tyvek® Wrap Cap Fasteners into sheathing at appropriate spacing above window head

**NOTE:** For high performance designs or areas of extreme exposure install additional mechanical fasteners through the flashing at the perimeter of window.
Non-Flanged Window with Structural Steel along the Sill and Head Using DuPont™ StraightFlash™

**STEP 18**
A. Seal all inside and outside corner seams of DuPont™ StraightFlash™ with a liberal bead of sealant.

**STEP 19**
A. Install window per manufacturer’s installation instructions.
STEP 20
Interior View
A. Create a continuous perimeter seal using backer rod and sealant or DuPont™ Window and Door Foam on window interior to resist air and water infiltration.

STEP 20-A
(OPTIONAL Alternate Back Dam Part 1)
While the sealant is still wet, as a best practice, install an “L” shaped back dam cut the width of the rough opening so that it contacts the sealant bead and rear of window. Seal by applying recommended sealant along four sides of the exposed back dam. **OPTIONAL**: Apply sealant along all four sides in lieu of back dam.

STEP 20-B
(OPTIONAL Alternate Back Dam Part 2)
A. Install retention clips around the window to permanently secure it in the rough opening as recommended by window manufacturer to complete installation.
Technical Specifications
DuPont™ Tyvek® air and water barriers 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 polyethylene to provide ultraviolet light resistance. DuPont requires that DuPont™ Tyvek® CommercialWrap® and CommercialWrap® D be covered within nine months (270 days) of installation.

DuPont™ self-adhered flashing products are made from a synthetic rubber adhesive and a laminate of polyethylene film, polypropylene film, elastic fiber, synthetic rubber adhesive, polyurethane adhesive, and a top sheet of flash spunbonded high density polyethylene fibers or polypropylene film. Additives have been incorporated into these materials to provide ultraviolet light resistance. DuPont requires that DuPont™ StraightFlash™ be covered within nine months (270 days) of installation.

Warning
DuPont™ Tyvek® air and water barriers 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 1-800-44-Tyvek.

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 1-800-44-Tyvek.

Note
When installed in conjunction with other building materials, DuPont™ self-adhered flashing products must be properly shingled with these materials such that water is diverted to the exterior of the wall system. DuPont™ Tyvek® products are air and water barriers and not the primary water barrier. The outer facade is the primary barrier. You must follow facade manufacturer’s installation and maintenance requirements for all facade systems in order to maintain water holdout properties and ensure performance of DuPont™ Tyvek® air and water barriers. Use of additives, coatings or cleansers on or in the facade system may impact the performance of DuPont™ Tyvek® air and water barriers. DuPont™ Tyvek® Weatherization Systems products are to be used as outlined in this installation guideline. DuPont™ self-adhered flashing products should only be used to seal penetrations and flash openings in houses or buildings. DuPont™ self-adhered flashing products are not to be used in roofing applications. For superior protection against bulk water penetration, DuPont suggests a system combining a quality exterior facade, a good secondary 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 DuPont™ Tyvek® air and water barrier is 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.

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

For complete warranty information please call 1-800-44-Tyvek.

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

For more information about DuPont Weatherization Systems, please call 1-800-44-Tyvek or visit us at www.weatherization.tyvek.com