Non-Flanged Window with Wood Bump Out Frame

USING DUPONT™ STRAIGHTFLASH™

FOR BUILDINGS GREATER THAN 4 STORIES AND HIGH PERFORMANCE INSTALLATIONS OF ANY HEIGHT
Non-Flanged Window with Bump Out Frame Using DuPont™ StraightFlash™

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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.
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Applicable Products

**DuPont™ Self-Adhered Flashing Systems products**

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>DIMENSIONS</th>
<th>AREA</th>
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<tbody>
<tr>
<td>DuPont™ StraightFlash™</td>
<td>4 in x 150 ft</td>
<td>50 sq ft</td>
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<tr>
<td></td>
<td>9 in x 125 ft</td>
<td>93.75 sq ft</td>
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**Required Materials Based on Project Requirements, Details, and Specifications**

**PRODUCT**
- DuPont™ Adhesive/Primer
- DuPont™ Tyvek® Tape
- DuPont™ Tyvek® Wrap Cap Fasteners or recommended fastening system
- DuPont™ Window & Door Foam
- Backer Rod
- Brushes for Surface Preparation
- J-Roller

*L* shaped back dam is a 3/4” corner guard (used on interior gypsum)

Sealant*

*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.

Warranty


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 firm hand pressure.

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.
Non-Flanged Window with Bump Out Frame Using DuPont™ StraightFlash™

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 systems 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. Self-adhered flashing 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:
  - 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 Wood Bump Out Frame

Method applies to following products:
DuPont™ StraightFlash™

**STEP 1**
A. Install wood buck bump-out per Architect’s guides. Securely fasten in place.
B. Clean substrate of any material that could negatively affect adhesion as well as any sharp protrusions.

**STEP 2**
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. Do not install fasteners within 6” of the sills and jambs of the openings and within 9” of the head of the openings.
**Non-Flanged Window with Bump Out Frame Using DuPont™ StraightFlash™**

**STEP 3**
Prepare air and water barrier for window installation.

A. Cut an opening in the DuPont™ Tyvek® air and water barrier along the dashed indicated lines. Ensure that the DuPont™ Tyvek® air and water barrier is cut flush with the outside edge of the wood bump out frame.

B. Cut a head flap in the DuPont™ Tyvek® air and water barrier at 45° angle beginning at the outside corners of the wood bump out frame 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 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.
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**STEP 5**
A. Prepare the inner sill flashing by cutting a piece of DuPont™ StraightFlash™ the length of the sill plus an additional 12”.

**NOTE:** Use either 4” or 9” width DuPont™ StraightFlash™ depending on the width necessary to complete an interior perimeter seal with the window frame.

**STEP 6**
A. Install the DuPont™ StraightFlash™ on inside surface of sill and 6” up the jambs. Ensure the DuPont™ StraightFlash™ is aligned along the outer edge of the sill and jamb bump out frame.

**NOTE:** All flashing should be applied with firm hand pressure and/or with J-roller to ensure maximum adhesion.
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STEP 7
A. Prepare the inner jamb flashing by cutting two (2) pieces of DuPont™ StraightFlash™ the length of the inner jambs.
B. Install the flashing on the inside surface of the bump out framing at the jambs. Ensure DuPont™ StraightFlash™ is aligned along the outer edge of the jamb bump out frame.

STEP 8
A. Prepare the inner head flashing by cutting one piece of DuPont™ StraightFlash™ the length of the head plus an additional 12”.
B. Install flashing on the inside surface of the bump out framing at the head. Align DuPont™ StraightFlash™ along the outer edge of the head bump out frame and install onto the inner header along the interior of the bump out and 6” down the jambs as shown.
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STEP 9
A. Prepare sill flashing for the face of the bump out frame by cutting a piece of 9” DuPont™ StraightFlash™ that is 7” longer than the outside width of the bump out frame.

STEP 10
A. Install DuPont™ StraightFlash™ as shown below.
A. Fold the first perforation in the DuPont™ StraightFlash™ and remove the smallest width of release paper.
B. Align the DuPont™ StraightFlash™ underneath the bump out frame to allow the flashing to extend 3-1/2” beyond each edge of the framing. Adhere the exposed butyl to the DuPont™ Tyvek® air and water barrier.
C. Remove the remaining release paper and adhere the DuPont™ StraightFlash™ to the underside and onto the face of the bump out frame.
STEP 11
A. Make vertical cuts in the DuPont™ StraightFlash™ along the inner edges of the bump out frame at the jambs using a utility knife. Be careful not to cut inner jamb flashing.
B. Fold flashing down and firmly press onto the inner sill flashing.
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STEP 12
A. Make a horizontal cut from the edge of the un-adhered DuPont™ StraightFlash™ to the outside corner of the bump out frame to create upper flap.
B. Make a second horizontal cut in the DuPont™ StraightFlash™ from the outside corner back to the DuPont™ Tyvek® air and water barrier to create a lower flap.
C. Adhere the lower flap onto the DuPont™ Tyvek® air and water barrier.
D. Adhere the upper flap by rolling the DuPont™ StraightFlash™ onto the edge of the bump out frame, securing the flashing tightly into the corner and onto the face of the wall.
E. Repeat Step 12 on the opposite corner.
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**STEP 13**
Prepare flashing for face of bump out frame along jambs.

A. Cut a piece of 2” x 4” wood blocking to create guide marks for positioning and making necessary cuts in the DuPont™ StraightFlash™ that will be installed onto the face of the jamb and head bump out frame. Use the 2” x 4” guide for Steps 13 C-D and 20 B-C.

B. Cut two (2) pieces of 9” DuPont™ StraightFlash™ the height of the jamb bump out frame plus 4”.

C. Align the 2” x 4” guide along the long edge of the DuPont™ StraightFlash™. Create a mark along the 2” x 4” guide.

D. Align the 2” x 4” guide along the short edge of the DuPont™ StraightFlash™. Create a mark along the 2” x 4” guide and repeat at the other end.

E. Repeat Step 13 B and C for other piece of flashing.

**STEP 14**
Apply DuPont™ Adhesive/Primer to exposed sheathing.

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STEP 15
A. Remove the two largest pieces of release paper from the first piece of DuPont™ StraightFlash™ and position along the jamb bump out frame so the guide marks are aligned with the outside edges of the bump out frame as shown below. Adhere the DuPont™ StraightFlash™ to the front surface only of the bump out frame.

STEP 16
A. Make a vertical cut in the DuPont™ StraightFlash™ beginning at the top outside corner of the bump out frame to create an upper flap.
B. Adhere flap by rolling the flashing onto the top edge of the bump out frame, securing the flashing tightly into the corner and onto the exposed sheathing.
**STEP 17**

A. Make a vertical cut in the DuPont™ StraightFlash™ from the bottom outside corner of the bump out frame to create a lower flap.

B. Adhere the lower flap onto the bottom edge of the bump out frame, securing the flashing tightly into the corner and onto the face of the wall.

C. **Remove remaining release paper** and adhere the side flap onto the edge of the bump out frame, securing the flashing tightly into the corner and onto the face of the wall.
**STEP 18**

A. Make a horizontal cut in the DuPont™ StraightFlash™ from the bottom outside corner of the bump out frame back to the face of the wall to create a second lower flap.

B. Fold down flap and adhere to DuPont™ StraightFlash™ on face of wall.

C. Make a horizontal cut in the DuPont™ StraightFlash™ beginning at the top outside corner of the bump out frame back to the face of the wall to create a second upper flap.

D. Fold down flap and adhere to DuPont™ StraightFlash™ onto the face of the wall.
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STEP 19

A. Make horizontal cuts in the unadhered DuPont™ StraightFlash™ along the inside edge of the bump out frame at the sill and head. Be careful not to cut inner jamb flashing.

B. Fold DuPont™ StraightFlash™ into rough opening and adhere onto flashing previously installed on inside surface of rough opening.

C. Repeat Steps 15-19 on opposite jamb using the second piece of DuPont™ StraightFlash™ from Step 13.
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**STEP 20**

A. Cut one piece of 9” DuPont™ StraightFlash™ the length of the outer edge of the bump out frame at the head plus an additional length to allow flashing to extend 3-1/2” beyond each side of the bump out frame.

B. Align the 2” x 4” guide along the long edge of the DuPont™ StraightFlash™. Create a mark along the 2” x 4” guide. 

C. Align the 2” x 4” guide along the short edge of the DuPont™ StraightFlash™. Create a mark along the 2” x 4” guide and repeat at the other end.

**STEP 21**

A. Remove release paper and position the 9” DuPont™ StraightFlash™ along the head bump out frame so the guide marks are aligned with the outside edge of the bump out frame as shown below.

B. Adhere the DuPont™ StraightFlash™ to only the front surface of the bump out frame.
**Non-Flanged Window with Bump Out Frame Using DuPont™ StraightFlash™**

**STEP 22**

A. Make a horizontal cut in the DuPont™ StraightFlash™ starting at the top outside corner of bump out frame.

B. Adhere the lower flap of DuPont™ StraightFlash™ by rolling the flashing onto the side edge of the bump out frame, securing the flashing tightly into the corner and onto the face of the wall.

C. Repeat steps A and B on the opposite side.
STEP 23
A. Fold the un-adhered DuPont™ StraightFlash™ onto the outside edge of the head bump out frame, securing the flashing tightly into the corner.
B. Make a cut in the DuPont™ StraightFlash™ from the outside corner of the bump out frame back to the face of the wall to create a lower flap.
C. Fold down lower flap and adhere DuPont™ StraightFlash™ onto the face of wall.
D. Repeat Step 23 B-C on the opposite side.
E. Remove remaining release paper and fold the un-adhered DuPont™ StraightFlash™ onto the face of the wall.
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**STEP 24**
A. Make vertical cuts in the un-adhered DuPont™ StraightFlash™ starting from the upper inside corners of the bump out frame along the inside edges. Be careful not to cut inner jamb flashing.
B. Fold flashing into rough opening and adhere onto DuPont™ StraightFlash™ already installed on inside surface of bump out framing.

**STEP 25**
A. As a best practice for high exposure areas, install metal drip cap tight against the bump out frame.
B. Apply a strip of 4” DuPont™ StraightFlash™ over the vertical leg of the drip cap.
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**STEP 26**
A. Flip down upper flap of DuPont™ Tyvek® air and water barrier so it lays flat across head flashing, then trim 1”- 2” above the window opening.
B. Tape along all cuts in DuPont™ Tyvek® air and water barrier and across head of the window with 3” DuPont™ Tyvek® Tape or 4” DuPont™ StraightFlash™. See General Instructions for when 3” DuPont™ Tyvek® Tape is allowed.
C. Install DuPont™ Tyvek® Wrap Cap Fasteners at appropriate spacing at head.

**NOTE:** For high performance designs or areas of extreme exposure install additional mechanical fasteners through the flashing at the head flap and perimeter of window.

**STEP 27**
A. Seal all inside and outside corner seams of DuPont™ StraightFlash™ with a liberal bead of sealant. Extend sealant approximately 1/2” onto the face of the bump out framing.
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**STEP 28**
A. Install window per manufacturer’s installation instructions.

**STEP 29**
A. Seal around the window opening at the interior with sealant (and backer rod as necessary) or DuPont™ Window and Door Foam. Sealant and backer rod, or foam, will also serve as a back dam.

B. OPTIONAL: If back dam is desired use alternate back dam. 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™ 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™ Flashing Systems products will melt at temperatures greater than 250°F (121°C). DuPont™ Flashing Systems products are combustible and should be protected from flames and other high heat sources. DuPont™ Flashing Systems 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.