



DuPont™
FlexWrap

DuPont™
StraightFlash VF

DuPont™
StraightFlash

DuPont™
Commercial Sealant

DuPont™
FlexWrap™ NF

DuPont Flashing Systems Commercial Installation Guidelines

FOR STOREFRONT WINDOW ON A KNEE WALL
AFTER WRB IS INSTALLED



Tyvek

DuPont Flashing Systems Commercial Installation Guidelines

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Applicable Products

DuPont Flashing Systems products

PRODUCT	DIMENSIONS	AREA
DuPont™ FlexWrap™	7 in x 75 ft	43.7 sq ft
	9 in x 75 ft	56.2 sq ft
	9 in x 250 ft	187.5 sq ft
DuPont™ FlexWrap™ NF	6 in x 75 ft	37.50 sq ft
	9 in x 75 ft	56.20 sq ft
DuPont™ StraightFlash™	4 in x 150 ft	50 sq ft
	9 in x 125 ft	93.75 sq ft
DuPont™ StraightFlash™ VF	6 in x 125 ft	62.5 sq ft
DuPont™ Thru-Wall Flashing	12 in x 75 ft	75 sq ft
	18 in x 75 ft	112.5 sq ft
	24 in x 75 ft	150 sq ft
	36 in x 75 ft	225 sq ft

Accessories

PRODUCT	TYPE	PER BOX
DuPont™ End Dams	4"	50 (25 left/25 right)
DuPont™ End Dams	6"	50 (25 left/25 right)
DuPont™ Corners	Inside	25
DuPont™ Corners	Outside	25

Necessary Materials

- DuPont Flashing
- DuPont™ Tyvek® Tape
- DuPont™ Thru-Wall Flashing
- DuPont™ Corners (Inside and Outside)
- DuPont™ End Dams
- DuPont™ StraightFlash™, DuPont™ FlexWrap™, or DuPont™ Tyvek® Tape

Recommended Materials

- DuPont™ Tyvek® Wrap Cap Fasteners
- Backer Rod
- Brushes for Surface Preparation
- J-Roller
- Recommended Primers and Sealants
- DuPont™ Commercial Sealant
- “L” shaped back dam is a 3/4” corner guard (used on interior gypsum)

Warranty

Please refer to the DuPont Weatherization Products 10-Year Limited Warranty for Multi-Family, Mixed Use and Light Commercial Buildings Under Five Stories, for buildings less than 5 stories. For buildings greater than 5 stories, please refer to the DuPont Weatherization Products 10-Year Limited Warranty for Multi-Family, Mixed Use and Light Commercial Buildings Over Four Stories.

DuPont Recommended Primers* (Flashing Only)

MANUFACTURER	PRODUCT NAME
3M	Hi-Strength 90
Denso	Butyl Primer (spray or can)
Henkel	SIA 655
Henkel	Permagrip® 105™

* Apply per manufacturers’ guidelines. DuPont assumes no liability in use of recommended products; installers need to evaluate suitability of recommended products in their end-use applications.

DuPont Recommended Fasteners*

MANUFACTURER	PRODUCT NAME
DuPont	DuPont™ Tyvek® Wrap Cap nails
DuPont	DuPont™ Tyvek® Wrap Cap screws
DuPont	DuPont™ Tyvek® Wrap Cap staples (for Stinger™)**

* 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.

** Not recommended with foam sheathing board or exterior gypsum.

General Instructions

DuPont Flashing Systems 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.

When flashing the sill area for windows and doors, DuPont recommends the use of 7” wide DuPont™ FlexWrap™ for 2”x 4” framing and 9” wide DuPont™ FlexWrap™ for 2” x 6” framing. When rigid back dams are required or desired, an option would be to use a ¾” 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 DuPont™ FlexWrap™. Then install DuPont™ FlexWrap™ over sill and corner guard back dam.

DuPont Flashing Systems Commercial Installation Guidelines

Door and window rough sill framing must be level or slightly sloped to the exterior to ensure proper drainage to the exterior. Please contact your local DuPont™ Tyvek® Specialist for additional information and installation instructions.

DuPont™ Commercial Sealant should be tooled flat to allow the natural curing process to create a concave joint.

DuPont™ Corners and DuPont™ End Dams are recommended as a best practice to be used with DuPont™ Thru-Wall Flashing. Alternatives can be used if it meets the design intent of the building.

DO NOT STRETCH DuPont™ FlexWrap™ when installing along sills or jambs. DuPont™ FlexWrap™ is only intended to be stretched when covering corners or curved sections.

DuPont™ Flashing Systems products perform best when installed at temperatures above 25°F (-4°C).

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

Where buildings could be exposed to extreme weather conditions, building envelope design requirements exceed ASTM 1677, 65 mph equivalent structural load and 15 mph equivalent wind-driven rain water infiltration it is recommended to install a high pressure skirt to help prevent water intrusion at the sill or threshold.

For high pressure design loads, the use of DuPont™ Tyvek® StraightFlash™ with wrap cap screws is required to secure the head flap of the windows.

Priming is generally not required for adhering DuPont Flashing Systems products to most common building materials. However, adverse weather conditions or cold temperatures may require use of a primer to promote adhesion. Additionally, concrete, masonry, and fiber-faced exterior gypsum board require the use of recommended primers. For primer recommendations, see page 3.

Priming is required for DuPont™ Thru-Wall Flashing.

For window or door openings greater than 6 feet long (commercial installations only)

A 3-piece sill and head detail is allowed using DuPont™ StraightFlash™ and DuPont™ FlexWrap™ corners. DuPont™ 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 StraightFlash™ sill flashing. When applying the 3-piece flashing detail to the head of the opening, the StraightFlash™ head piece should be applied prior to installing the FlexWrap™ corner Flashing. Minimum overlapping of the StraightFlash™ head flashing and jamb flashing should be a minimum of 6".

Surface Preparation for DuPont™ Thru-Wall Flashing

Substrate surface must be smooth, clean, dry, and free from voids, loose substrate, protrusions, or any material that would hinder adhesion of the flashing.

Clean the surface with a clean dry cloth or brush.

Follow primer manufacturers' guidelines for appropriate coverage and drying times.

Storage for DuPont™ Thru-Wall Flashing

DuPont™ Thru-Wall Flashing should be protected from rain and physical damage under cover at the job site.

Optimum storage temperature 50°F to 90°F.

Freeze-thaw durable. Storage temperatures should not exceed 120°F.

Environmental Conditions for DuPont™ Thru-Wall Flashing

DuPont™ Thru-Wall Flashing should not be applied to moist or damp surfaces.

DuPont™ Thru-Wall Flashing can be applied with an air and surface temperature of 32°F or higher.

For additional guidelines and suggested sealants, please call 1-800-44-Tyvek (800-448-9835), visit our website at www.Weatherization.Tyvek.com, or consult your local DuPont™ Tyvek® Specialist.

Installation Methods for DuPont Flashing Systems products AFTER DuPont™ Tyvek® Weather Barrier is Installed

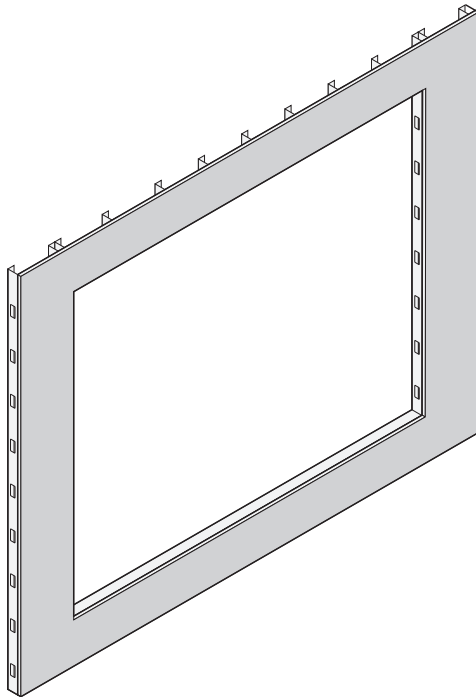
Store front Window on Knee Wall

Method applies to following products:

- DuPont™ StraightFlash™
- DuPont™ FlexWrap™
- DuPont™ FlexWrap™ NF

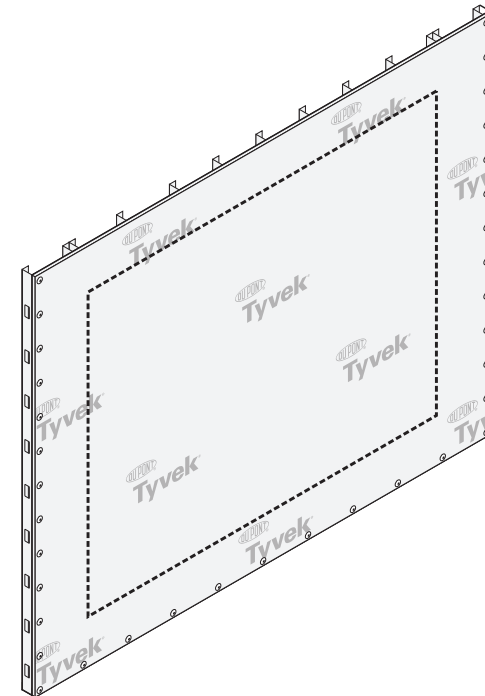
STEP 1

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 Installation Guidelines for DuPont™ Tyvek® weather barrier that can be found at www.Weatherization.Tyvek.com.

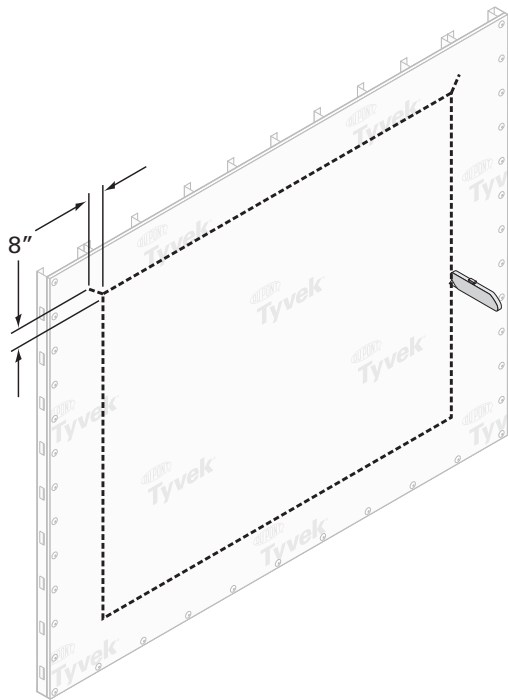


DuPont Flashing Systems Commercial Installation Guidelines

STEP 3

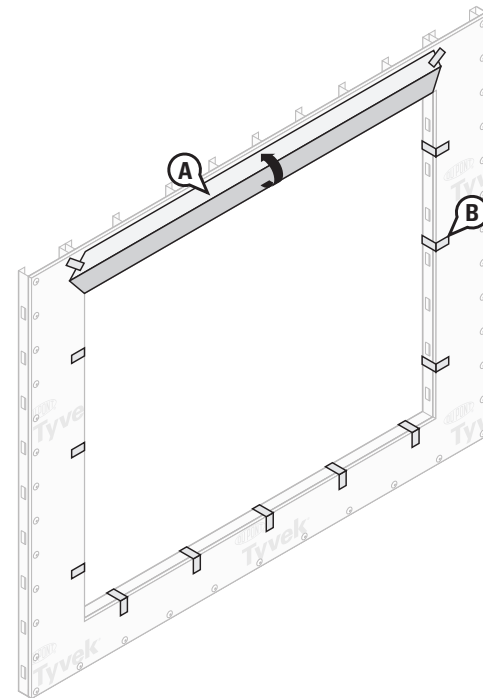
Prepare weather barrier for window installation.

- Cut an opening in the DuPont™ Tyvek® weather barrier using a square cut around the perimeter of the rough opening.
- Cuts should be made along the dashed indicated lines. (Ensure that the DuPont™ Tyvek® weather barrier is cut flush with the sheathing and is not wrapped into the rough opening.)
- Cut a head flap at 45° angle to expose 8" of sheathing to allow for head flashing installation.



STEP 4

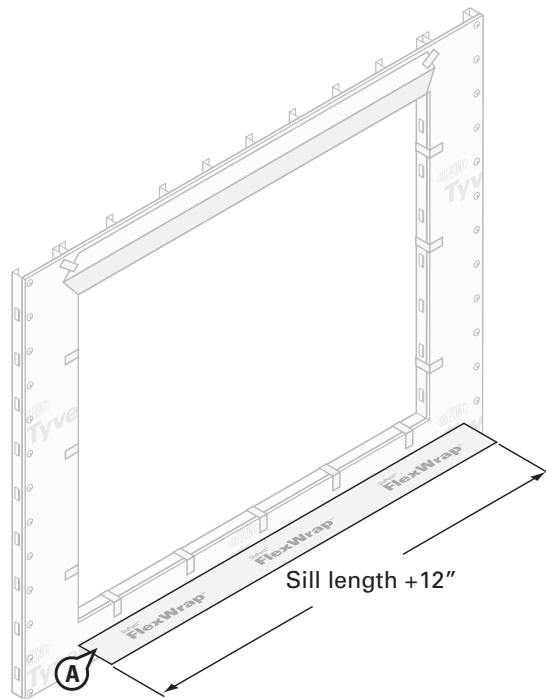
- Flip the head flap up to expose the sheathing and temporarily secure with tape.
- Temporarily secure DuPont™ Tyvek® Weather Barrier with DuPont™ Tyvek® Tape around rough opening before flashing is installed to help facilitate flashing installation.



DuPont Flashing Systems Commercial Installation Guidelines

STEP 5

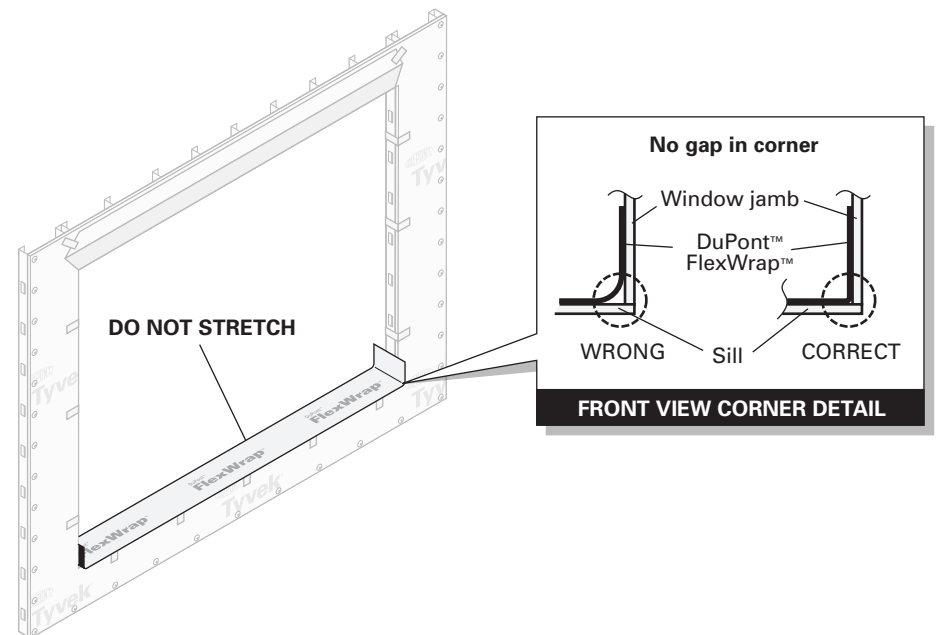
- A. Prepare the sill flashing by cutting a piece of DuPont™ FlexWrap™ that is at least 12" longer than sill length. Use 7" DuPont™ FlexWrap™ or 6" DuPont™ FlexWrap™ NF for 2 x 4 framing and 9" DuPont™ FlexWrap™ or 9" DuPont™ FlexWrap™ NF for 2 x 6 framing.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.



STEP 6

- A. Install the sill flashing. Remove the largest strip of release paper, align the flashing with the interior edge of sill, and install into rough opening across sill and up jambs (min 6"). Apply working from the middle of the sill towards the sides. Secure DuPont™ FlexWrap™ tightly into the corners by first working in along the sill before adhering up the jambs.

DO NOT STRETCH MATERIAL ALONG THE SILL OR JAMBS.

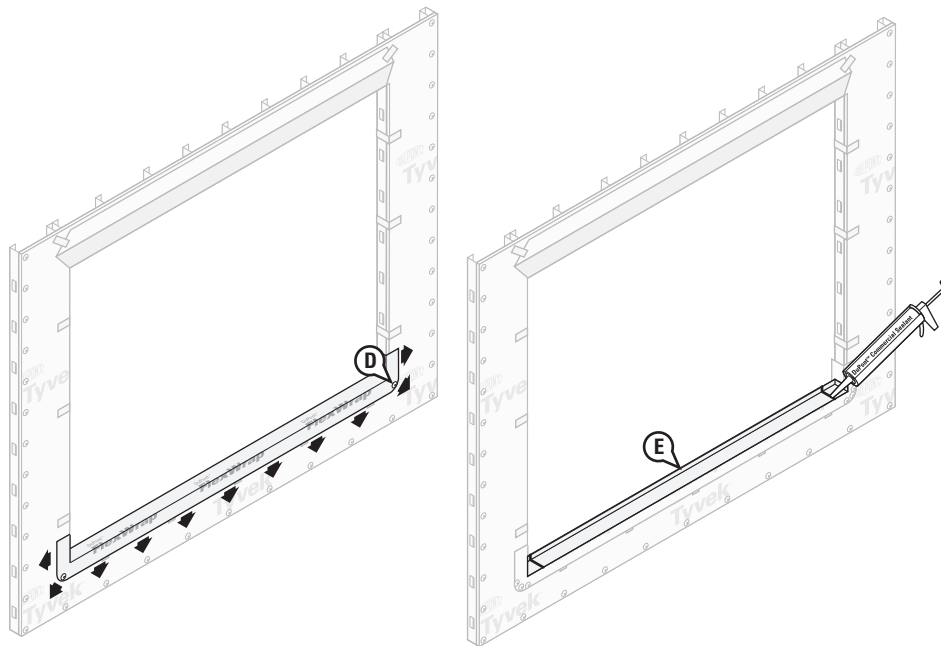


DuPont Flashing Systems Commercial Installation Guidelines

STEP 7

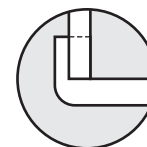
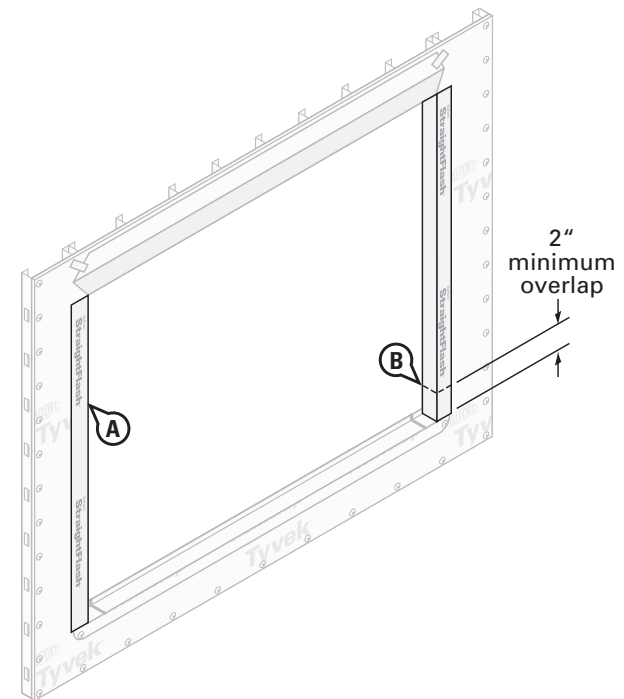
- A. Remove second half of the release paper.
- B. Fan DuPont™ FlexWrap™ or DuPont™ FlexWrap™ NF at bottom corners and adhere onto face of wall.
- C. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.
- D. Use DuPont™ Tyvek® Wrap Cap fasteners to temporarily secure the outer edge of the flashing at the lower corners. (Self tapping Wrap Cap screws are recommended for steel stud framing.) Flashing bond will strengthen over time. If using DuPont™ FlexWrap™ NF fasteners are not required.
- E. Shim, level and anchor sill pan flashing and seal corner seams per manufacturer's instructions with DuPont™ Commercial Sealant or recommended sealant.

Option 2: An alternate approved flashing method is to install DuPont™ StraightFlash™ using installation method outlined in "Non-Flange Aluminum Window Using DuPont™ StraightFlash™ VF" on page 41.

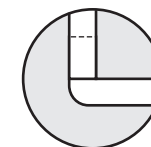


STEP 8

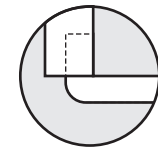
- A. Wrap 9" DuPont™ StraightFlash™ into the rough opening at each jamb and onto wall face. The flashing should align with the interior edge of the jamb framing. Cut the jamb flashing the vertical length of the rough opening.
- B. Jamb flashing should be long enough to overlap the sill flashing by at least 2" and be overlapped by future head flashing by at least 2" .



INCORRECT
DuPont™ FlexWrap™
reverse flashed



INCORRECT
DuPont™ StraightFlash™
flush with DuPont™
FlexWrap™

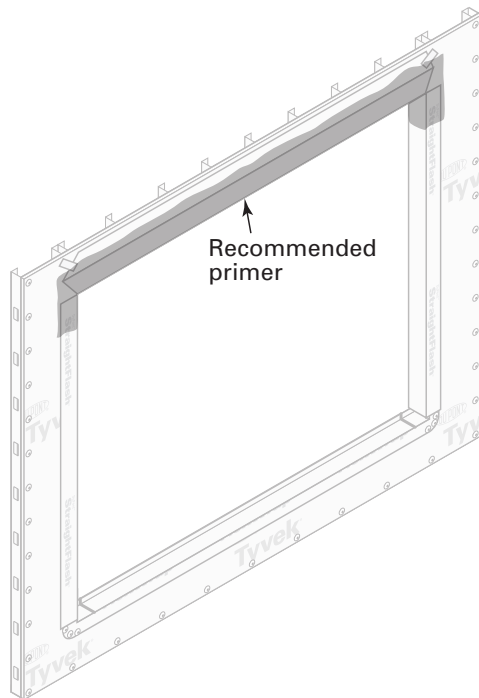


CORRECT
DuPont™ StraightFlash™
overlaps DuPont™
FlexWrap™

DuPont Flashing Systems Commercial Installation Guidelines

STEP 9

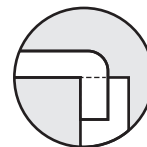
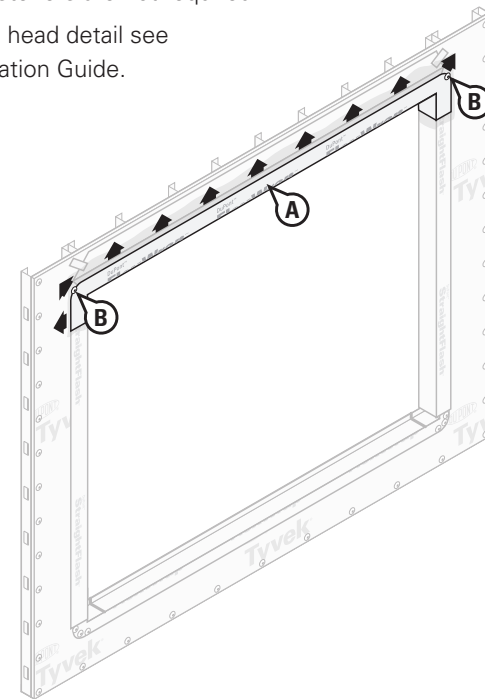
- A. Spray the top of the jambs and exposed sheathing with recommended primer.



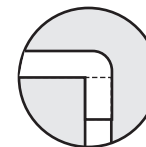
STEP 10

- A. Adhere DuPont™ FlexWrap™ or DuPont™ FlexWrap™ NF to the head using the same installation process as shown in steps 6 and 7 for the sill flashing. Make sure the DuPont™ FlexWrap™ is cut long enough to overlap the jamb flashing by at least 2".
- B. Use DuPont™ Tyvek® Wrap Cap fasteners to temporarily secure the outer edge of the flashing at the upper corners. (Commercial Wrap Cap screws are recommended for steel stud framing.) Flashing bond will strengthen over time. If using DuPont™ FlexWrap™ NF fasteners are not required.

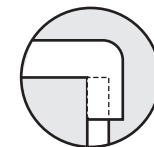
NOTE: For alternate head detail see Step 6 of this Installation Guide.



INCORRECT
DuPont™ FlexWrap™
reverse flashed



INCORRECT
DuPont™ StraightFlash™
flush with DuPont™
FlexWrap™

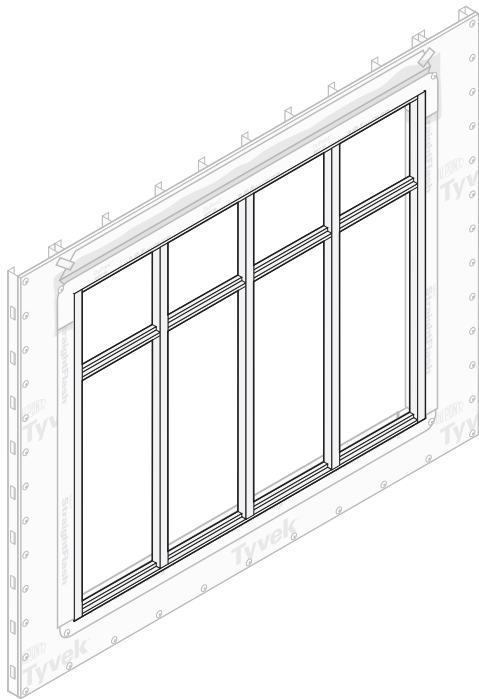


CORRECT
DuPont™ StraightFlash™
overlaps DuPont™
FlexWrap™

DuPont Flashing Systems Commercial Installation Guidelines

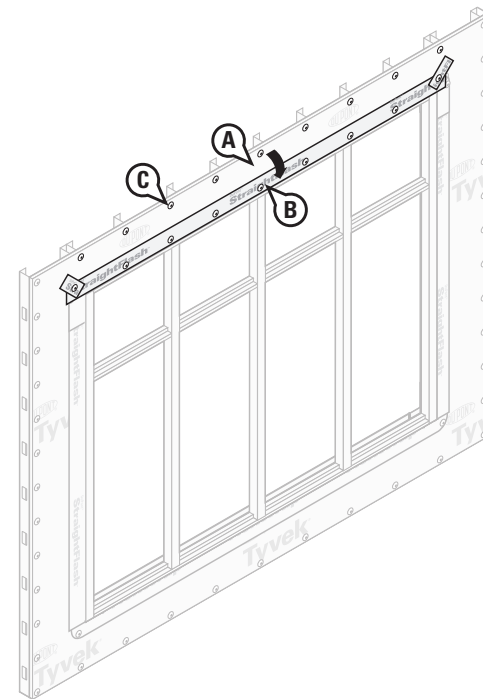
STEP 11

- A. Install storefront window per manufacturer's installation instructions.
- B. See steps 12–16 if the optional skirt flashing is desired. (Installation methods for DuPont Flashing Systems AFTER DuPont™ Tyvek® weather barriers is installed – for non-flanged windows.)



STEP 12

- A. Flip down the head flap and adhere 4" DuPont™ StraightFlash™ over the diagonal seams.
- B. Tape along the top of the window with DuPont™ Tyvek® Tape or 4" DuPont™ StraightFlash™.
- C. Install remaining DuPont™ Tyvek® Wrap Caps at head per the recommended spacing (every 12" to 18" depending on the vertical stud line).

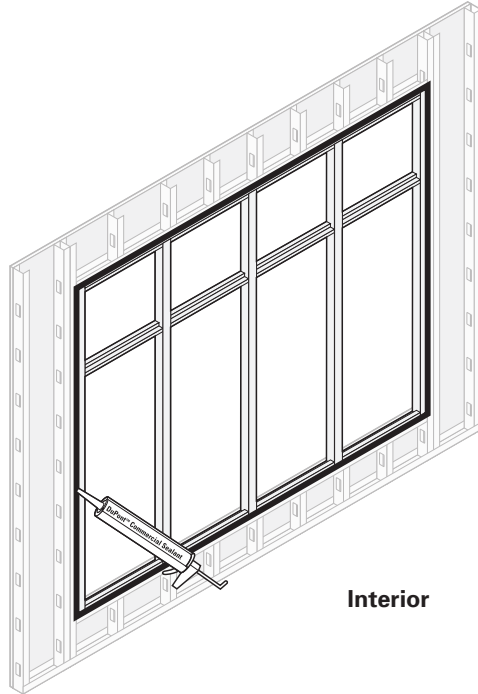


DuPont Flashing Systems Commercial Installation Guidelines

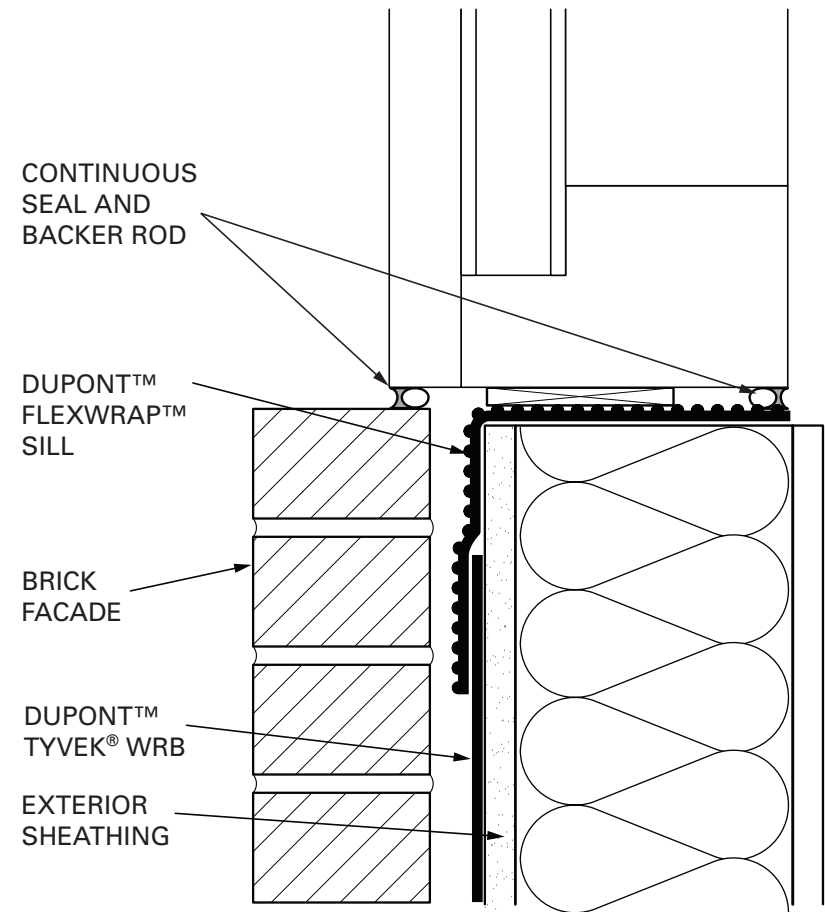
STEP 13

Interior view

- A. Create a continuous perimeter seal with backer rod and DuPont™ Commercial Sealant or recommended sealant on window interior to resist air and water infiltration. DuPont™ Commercial Sealant should be tooled flat to allow the natural curing process to create a concave joint.
- B. When the facade is complete, place a continuous sealant bead integrating the window to the facade.



SIDE VIEW DETAIL



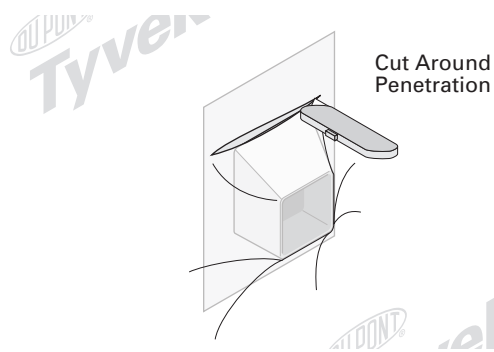
DuPont Flashing Systems Commercial Installation Guidelines

Penetrations

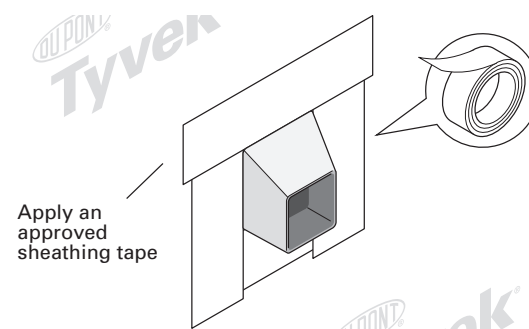
Seal the DuPont™ Tyvek® around all electrical, HVAC and plumbing penetrations with sealant and DuPont™ Tyvek® Tape, DuPont™ FlexWrap™ or DuPont™ FlexWrap™ NF. When using DuPont™ FlexWrap™ NF fasteners are not required. Products that have flanges should be integrated into the weather barrier using DuPont™ Tyvek® Tape or DuPont Flashing Systems products. DuPont™ StraightFlash™ or DuPont recommended alternate patches should be applied behind brick tie base plates and other metal fastening plates.

DuPont™ Tyvek® Tape should first be applied around penetration. DuPont™ Tyvek® Tape is used to reinforce the DuPont™ Tyvek® weather barrier. It is important that the tape be installed tight to the penetrating object. Next apply an adequate amount of DuPont™ Commercial Sealant or DuPont recommended sealant around the penetration.

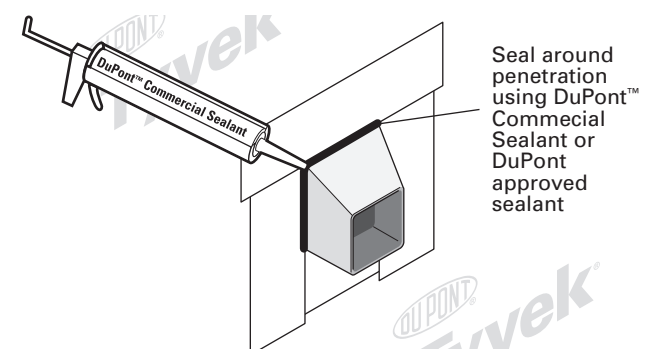
STEP 1



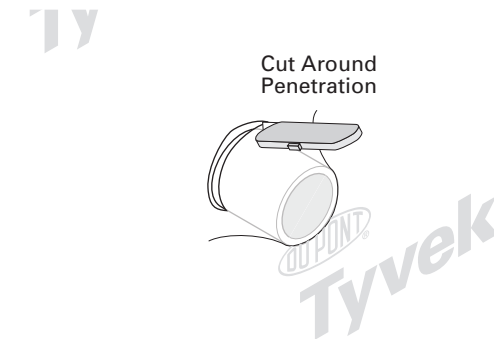
STEP 2



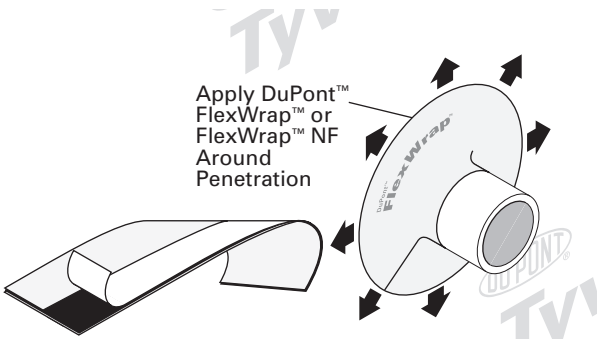
STEP 3



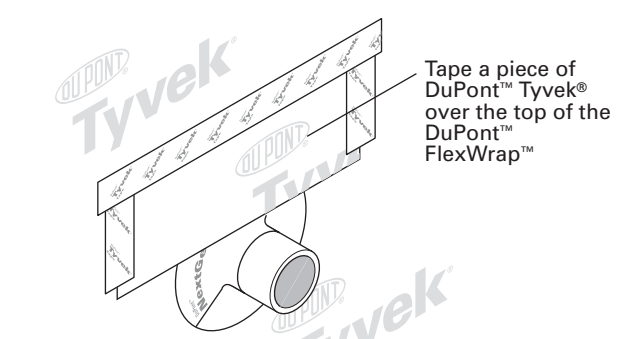
STEP 1



STEP 2



STEP 3



Technical Specifications

DuPont™ Tyvek® weather 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 and DuPont™ Tyvek® ThermaWrap™ covered within four (4) months (120 days) of installation.

DuPont™ Thru-Wall Flashing is a 40 mil, self-adhesive composite flashing membrane. The top sheet is composed of DuPont™ Elvaloy® and thermoplastic ingredients that are reinforced with polyester fibers. A synthetic rubber adhesive is applied to the bottom surface of the membrane. A 1-1/2" edge of the top sheet does not have the synthetic rubber adhesive applied to it in order to provide a suitable surface for sealant adhesion and to use as a drip edge. Corners and end dams are made from DuPont™ Elvaloy® and thermoplastic ingredients. Additives have been incorporated to provide extended UV light resistance.

DuPont™ FlexWrap™ and StraightFlash™ flashing products are made from a synthetic rubber adhesive and a top sheet of flash spunbonded high density polyethylene fibers. Additives have been incorporated into these materials to help provide UV light resistance. DuPont requires that DuPont™ FlexWrap™ and DuPont™ be covered within four (4) months (120 days) of installation.

Warning

DuPont™ Tyvek® weather 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™ Thru-Wall Flashing, DuPont™ FlexWrap™, and DuPont™ StraightFlash™ products and their release paper are slippery and should not be walked on. Remove release paper from work area immediately. DuPont™ Thru-Wall Flashing will melt at temperatures greater than 480°F (250°C). DuPont™ FlexWrap™ and StraightFlash™ will melt at temperatures greater than 250°F (121°C). DuPont Flashing Systems products are combustible and should be protected from flame and other high heat sources. If burning occurs, ignited droplets may fall away from the point of ignition. For more information, call 1-800-44-Tyvek.

DuPont™ Weatherization 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 Material Safety Data Sheet or call Chemtrec at 1-800-424-9300.

Note

When installed in conjunction with other building materials, DuPont Flashing Systems products must be properly shingled with these materials such that water is diverted to the exterior of the wall system. DuPont™ Tyvek® products are WRBs 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®. Use of additives, coatings or cleansers on or in the facade system may impact the performance of DuPont™ Tyvek® water-resistive barriers. DuPont™ Tyvek® Weatherization Systems products are to be used as outlined in this installation guideline. DuPont Flashing Systems products should only be used to seal penetrations and flash openings in houses or buildings. DuPont Flashing Systems 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 weather 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® weather 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



Tyvek®