Single Family User’s Bulletin for Installation of DuPont Building Envelope Solutions

Introduction

Use of This Residential Single Family User’s Bulletin

This user bulletin is designed to serve as a resource for building professionals and installers using DuPont Building Envelope Solutions products in Residential Single Family applications. It does not override or change requirements in the Installation Guidelines or Warranties and should be used in conjunction with these documents. Always refer back to the applicable Installation Guidelines and Warranties, available at www.tyvek.com, for complete information.

This bulletin applies to single-family residential applications. See the Multi-Family User’s Bulletin for Installation of DuPont Building Envelope Solutions Products for information on multi-family applications including townhomes, four- or five-story apartment buildings, mixed-use apartment buildings, high rise apartment buildings, or other buildings for residential-use as defined by the International Building Code (IBC).

This document will help builders, installers, and other construction professionals understand appropriate product application, proper installation, and warranty requirements when using DuPont Building Envelope Solutions.

DuPont Residential Single Family Definition

While the information included in this bulletin applies to single-family residential homes, it is important to note that the specific requirements for eligibility of the DuPont Weatherization Products 10-Year Limited Builder Warranty for Buildings Less Than 5 Stories and Low-Rise Multi-Family Residential Buildings Less Than 6 Stories are based on a distinction between single-family and multi-family structures. Single-family is defined in the Warranty 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 2012 International Residential Code (IRC) section R101.2, both to the extent they are exclusively Residential-Use building structures. This distinction differs from multi-family applications that include townhomes, four or five story apartment buildings, mixed-use apartment buildings, high rise apartment buildings, or other buildings for residential-use as defined by the International Building Code (IBC).

Product installation for residential single-family homes is described in the DuPont Tyvek® Water-Resistive and Air Barriers Installation Guidelines for Buildings Less Than 5 Stories and Low-Rise Multi-Family Residential Buildings Less Than 6 Stories.
Applicable Products and Product Descriptions for Single-Family Residential Buildings

Applicable DuPont Building Envelope Solutions products for single-family residential homes include Water Resistive Barriers (WRBs), Self-Adhered Flashing Products, Roofing Underlayments, and installation accessories such as fasteners, tapes, primers, and sealants. Below is a description of each DuPont Building Envelope Solutions product that can be used together as part of the complete building envelope.

DuPont Tyvek WRBs
DuPont Tyvek WRBs are made from a tough, spunbonded polyethylene breathable membrane with microscopic pores that resist air penetration while allowing moisture vapor to pass through. When properly installed, these materials also act as a secondary barrier to bulk water that may penetrate the exterior plane to reduce the likelihood of mold/rot/degradation and include:
- DuPont Tyvek HomeWrap® – Helps prevent air and water infiltration, but allows water vapor to escape to prevent rot and mold inside walls.
- DuPont Tyvek StuccoWrap® – Used in applications with a two layer WRB system for traditional stucco or as a single WRB for EIFS applications. Designed with a grooved texture to provide enhanced drainage.
- DuPont Tyvek DrainWrap® – Designed with a grooved texture to provide enhanced drainage.
- DuPont Tyvek® Thermawrap™ LE – Designed with a metallized, low-emission (low-e) surface that reflects solar radiation away from the building to help improve energy efficiency.
- DuPont Tyvek® Thermawrap™ R5.0 – Offers the breathability and water management benefits of DuPont Tyvek WRBs plus an additional 1 ½” insulated batting that delivers an R-value of 5.0.
- DuPont® Tyvek® CommercialWrap™ – Designed for Commercial applications with increased durability, resistance to air, water, and UV exposure.
- DuPont Tyvek® CommercialWrap™ D – Designed for Commercial applications with increased durability, resistance to air, water, and UV exposure. The grooved texture provides enhanced drainage. While DuPont Tyvek® CommercialWrap™ and DuPont Tyvek® CommercialWrap™ D can be used for residential single-family applications, they are typically used on high performance commercial projects.

DuPont Self-Adhered Flashing Products
DuPont Self-Adhered Flashing Products work with DuPont Tyvek WRBs to help seal the building envelope. The flashing is made from a butyl adhesive that performs through extreme temperatures, adheres to most common building materials, and contains no asphalt.
- DuPont FlexWrap™ NF – A moldable and formable self-adhered flashing used for sill applications and round-top windows.
- DuPont® StraightFlash™ – A self-adhered flashing used for heads and jambs of rectangular windows and doors.
- DuPont® StraightFlash™ VF – A self-adhered flashing with a versatile flange used for brick mold and non-flanged windows and doors.
- DuPont® Flashing Tape – An alternative self-adhered flashing membrane used for heads and jambs of rectangular windows and doors.

DuPont Building Envelope Solutions Installation Accessories
DuPont offers a number of accessory products that work with DuPont Tyvek WRBs and DuPont Self-Adhered Flashing Products to provide superior air and water barrier protection for durable, energy-efficient homes.
- DuPont Tyvek® Wrap Cap Fasteners (nails, screws, staples) – Designed to increase holding power and reduce tears when fastening DuPont Building Envelope Solutions products.
- DuPont Tyvek® Tape – Used for sealing the seams of DuPont Building Envelope Solutions products to help provide a continuous barrier against air and water infiltration.
- DuPont® Residential Sealant – A urethane modified acrylic, formulated to bond with DuPont Tyvek Building Envelope Solutions products.
- DuPont® Adhesive/Primer – A high performance adhesive/primer designed to help create a high strength bond between self-adhered flashing products and wall surfaces where either adhesion can be difficult, or for use in cold temperature applications.
- DuPont® Window & Door Foam – A minimal expansion, low pressure polyurethane window and door foam. It works with DuPont® Tyvek® WRBs to help keep air and water out around windows, doors, pipe penetrations, and joints.

Additional information about these and other products such as DuPont® Tyvek® Protec™ and DuPont® RainVent™ Battens are included below.

Water-Resistive Barriers (WRB)

<table>
<thead>
<tr>
<th>Product</th>
<th>Dimensions</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>DuPont Tyvek HomeWrap®</td>
<td>3 ft x 100 ft</td>
<td>300 sq ft</td>
</tr>
<tr>
<td></td>
<td>3 ft x 165 ft</td>
<td>495 sq ft</td>
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<td>9 ft x 150 ft</td>
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<td>10 ft x 100 ft</td>
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<td>DuPont Tyvek StuccoWrap®</td>
<td>5 ft x 200 ft</td>
<td>1,000 sq ft</td>
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<td>DuPont Tyvek DrainWrap®</td>
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<td></td>
<td>10 ft x 125 ft</td>
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<tr>
<td>DuPont Tyvek Thermawrap™ LE</td>
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<td>DuPont Tyvek Thermawrap™ R5.0</td>
<td>4 ft x 40 ft</td>
<td>160 sq ft</td>
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<td>DuPont Tyvek CommercialWrap®</td>
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<td></td>
<td>10 ft x 125 ft</td>
<td>1,250 sq ft</td>
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<td>DuPont Tyvek CommercialWrap® D</td>
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<tr>
<td></td>
<td>10 ft x 125 ft</td>
<td>1,250 sq ft</td>
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DuPont Self-Adhered Flashing Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Width</th>
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<tbody>
<tr>
<td>DuPont® FlexWrap™ NF</td>
<td>6 in</td>
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<tr>
<td>DuPont® StraightFlash™</td>
<td>4 in</td>
</tr>
<tr>
<td>DuPont® StraightFlash™ VF</td>
<td>6 in</td>
</tr>
<tr>
<td>DuPont® Flashing Tape</td>
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Installation Accessories

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<th>Product</th>
<th>Type</th>
<th>Quantity</th>
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<tr>
<td>DuPont® Tyvek® Tape</td>
<td>2” Bulk Pack</td>
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<td></td>
<td>3” Bulk Pack</td>
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<td>DuPont® Tyvek® Metallized Tape</td>
<td>2” x 100’ Rolls</td>
<td>12 rolls/case</td>
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<tr>
<td>DuPont® Tyvek® Wrap Cap staples or other cap staples for Stinger® Cap Stapler</td>
<td>16 gauge, available in 7/8”, 1-1/4”, and 1-1/2” lengths</td>
<td>2,000/box</td>
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<tr>
<td>DuPont® Tyvek® Wrap Cap nails</td>
<td>1” electro-galvanized ring shank nail</td>
<td>2,016/box</td>
</tr>
<tr>
<td>DuPont® Tyvek® Wrap Cap screws</td>
<td>2” Wrap Cap Screws</td>
<td>1,000/box</td>
</tr>
<tr>
<td>DuPont® RainVent® Battens</td>
<td>5/8 in x 3/8 in x 8 ft</td>
<td>40/pack</td>
</tr>
<tr>
<td>DuPont® Adhesive/Primer</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>DuPont® Residential Sealant</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>DuPont® Window &amp; Door Foam</td>
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</tr>
</tbody>
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DuPont® Tyvek® Protec™ Engineered Synthetic Roofing Underlayments

<table>
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<th>Roll Weight</th>
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</tr>
<tr>
<td>Tyvek® Protec™ 160</td>
<td>6 Months</td>
<td>48” x 250’</td>
<td>31 lbs</td>
</tr>
<tr>
<td>Tyvek® Protec™ 200</td>
<td>6 Months</td>
<td>48” x 250’</td>
<td>36 lbs</td>
</tr>
</tbody>
</table>

General DuPont® Tyvek® WRB and Flashings Systems

Installation Principles

The primary elements of proper weather barrier system installation for building envelopes are Continuity, Overlap, and Fastening.

- **Overlap** refers to the proper shingling of the building envelope components on the wall. Much in the same way shingles are installed on a roof, it is important that the weather barrier membrane and flashing be properly overlapped so bulk water is directed down and away from the wall.

- **Cap Fasteners** are important for both overall durability of the weather barrier system, and also for reducing the potential for water penetration or air leakage at fastening points.

If these basic principles are compromised, bulk water may enter the wall system and cause damage over time. The areas around windows or other wall penetrations are extremely vulnerable. Therefore, proper window and door flashing and integration with the WRB is critical to water management. The plane where the WRB is placed is considered the drainage plane, and windows and doors should be flashed in a method that enables water to shed to the exterior of the drainage plane.

In addition to shedding water properly, the DuPont Flashing Installation Guidelines are designed to provide protection of the sill with DuPont® Tyvek® FlexWrap™ NF. This product is installed at the sill to protect the vulnerable bottom corners of the sill where water damage is most likely to occur. Installing head and jamb flashing with DuPont® StraightFlash™ or DuPont® Flashing Tape after integral flanged windows are installed helps provide proper continuity between the window flange and the DuPont® Tyvek® WRB or sheathing. The window flange at the sill is not sealed to the WRB in this method, thus providing a mechanism for water to drain to the exterior so that it penetrates the air barrier and accumulates at the sill.

The same approach is used for non-flanged windows such as brick mold installations, i.e. DuPont® FlexWrap™ NF is first installed at the sill prior to installing the window. In this case, DuPont® StraightFlash™ VF is installed directly to the brick mold at the window jambs and head prior to window installation in order to create a flange on the window that can be subsequently integrated to the sheathing and WRB to establish continuity of the drainage plane.

The ability to design a continuous and durable air barrier plane despite transitions such as roof assemblies intersecting exterior walls, windows, and other service penetrations ultimately contributes to the air leakage of the whole building. DuPont offers the components necessary to construct an exterior air barrier assembly which includes a collection of compatible products that can be tied together to provide air tightness for the entire home.

Each of the DuPont® Tyvek® Water-Resistive and Air Barriers Installation Guidelines for Buildings Less Than 5 Stories and Low-Rise Multi-Family Residential Buildings Less Than 6 Stories provide requirements for air barrier installations. In addition, there are a series of Installation Bulletins to provide additional information about when installing the DuPont™ Tyvek® WRB as an air barrier. All these documents are reviewed below.
Description of DuPont Building Envelope Solutions 10-Year Limited Builder Warranty for Buildings Less Than 5 Stories and Low-Rise Multi-Family Residential Buildings Less Than 6 Stories

Overview of Warranty Offering
Manufacturers’ warranties vary; some offer Product warranty, others a Product and Labor warranty. While not customary, a Product and Labor warranty can include the cost of restoring affected construction if the product contributed to the root cause of the problem. Both the Product Warranty and the Product and Labor Warranty offered by DuPont are Limited Warranties effective for a period of 10 years. The Product Warranty covers repair or replacement of defective DuPont Building Envelope Solutions products only and does not cover repair and replacement of other damaged materials. In addition to replacement of defective weather barrier materials, the Product and Labor Warranty covers reasonable construction repair costs to correct any problem that arises solely from the failure of the DuPont Building Envelope Solutions products.

The DuPont 10-Year Limited Warranties are directly tied to the DuPont Installation Guidelines. The applicable Installation Guidelines must be followed in order to be eligible for the Product and Labor component of the Limited Warranty. This section provides guidance on establishing eligibility for both the Product and Labor Components of the 10-Year Limited Warranties.

In order to be eligible for the Product and Labor components of the Warranty, DuPont Building Envelope Solutions products must be used in all applicable areas of the structure, as indicated in the Installation Guidelines. For example, if a home has multiple claddings and one portion of is constructed using an EIFS product while the rest is constructed with fiber cement cladding, it is not necessary for the DuPont™ Tyvek® WRB to be installed under the EIFS portion of the wall, but would be required on the remainder of the building. This is because EIFS manufacturers often require the use of a specific WRB as a part of the EIFS system; and therefore, DuPont™ WRBs would not be applicable behind these EIFS products. However, if a combination of DuPont™ Tyvek® WRBs and other manufacturer’s building wraps were otherwise used on the same home, the home would not be eligible for the Product and Labor components of the Warranty.

If a home is constructed with a flashing detail not covered in the Installation Guidelines, general drainage principles should be used. The DuPont™ Tyvek® Specialist Network (described below) is available to help evaluate whether or not a detail meets the criteria for the applicable DuPont™ Weatherization System Installation Guide.

The Warranty for a home may cover the DuPont™ Tyvek® WRB, or both the DuPont™ Tyvek® WRB Products and DuPont Self-Adhered Flashing Products.

• In order to be eligible for the Product and Labor component of the Warranty for the DuPont™ Tyvek® WRB, the DuPont™ Tyvek® WRB must be installed in accordance with the applicable Installation Guidelines, including the proper overlap, shingling, taped seams, fasteners, fastener schedule, terminations, etc. and all other terms of the DuPont™ Weatherization Products 10-Year Limited Warranty process must be followed.

• In order to be eligible for the Product and Labor component of the Warranty for the DuPont™ Tyvek® Self-Adhered Flashing Systems Products, DuPont™ Tyvek® Building Wrap Products must be used and installed in accordance with the applicable Installation Guidelines. The DuPont Self-Adhered Flashing Products must be installed in accordance with the applicable Installation Guidelines and all other terms of the DuPont™ Weatherization Products 10-Year Limited Warranty process must be followed.

DuPont™ Tyvek® WRB Selection
When considering the Product and Labor component of the Warranty, DuPont™ Tyvek® HomeWrap®, DuPont™ Tyvek® StuccoWrap®, DuPont™ Tyvek® DrainWrap® are typically used when following the Installation Guidelines for Buildings Less than 5 Stories and Low-Rise Multi-Family Residential Buildings Less than 6 Stories. DuPont™ Tyvek® CommercialWrap® and DuPont™ Tyvek® CommercialWrap® D can be used with any of the installation guidelines described above and for Warranty eligibility, but these products are typically used on high performance commercial products and follow the Installation Guidelines for Buildings Greater than 4 Stories and High Performance Installations of any Height.

For more information and complete details about the Warranty process and terms, refer to the applicable Installation Guidelines and the applicable Warranty documents.

Other Considerations for the Building Envelope
Air Barrier Installation
Regardless of insulation type, a wall’s thermal performance drops proportionately with increases in air flow through the wall. Sheathing alone cannot sufficiently reduce air flow to improve the thermal performance of walls. DuPont™ Tyvek® WRBs have unique air barrier properties, and if additional installation steps are followed, air leakage can be further reduced to increase energy savings. Stopping air leaks also significantly reduces moisture penetration in the walls, and increases the overall comfort in a home.
The Home Energy Rating System (HERS) Index is a common industry method of rating the energy efficiency of new and existing homes. As a part of the HERS Index rating process, a blower door test is completed, which determines the air tightness of a home. As air tightness of a home increases, the home’s energy efficiency will increase, resulting in a lower HERS Index Score. An air tight home prevents cold air infiltration in the winter months, and moist warm air infiltration in the summer months. DuPont™ Tyvek® WRBs create an exterior air barrier that contributes to overall air tightness and energy efficiency and helps the conditioned air to stay inside of the home, minimizing energy loss.

For these reasons, air barrier installations are becoming increasingly important. The Installation Guidelines for Buildings Less than 5 Stories and Low-Rise Multi-Family Residential Buildings Less than 6 Stories do not require the WRB to be installed as an air barrier; however, it is a recommended best practice. In addition to standard installations that include proper fastening, sealing of vertical seams, and proper integration with window and door flashing, air barrier installations include the following:

- Sealing both vertical and horizontal seams of the DuPont™ Tyvek® WRB.
- Terminating the DuPont™ Tyvek® WRB at the top and bottom of the wall.
- Sealing the DuPont™ Tyvek® WRB at all other transitions.

There are a series of air barrier specific Installation Bulletins listed in the section below which should be reviewed if installing the DuPont™ Tyvek® WRB as an air barrier.

**Fastening**

Typical fasteners used for installation of the DuPont™ Tyvek® WRB include 1” DuPont™ Tyvek® Wrap Cap staples, nails or other manufacturer’s equivalent cap fasteners. In addition, temporary means of attachment are included in the Temporary Fastening section of the Installation Guidelines. Temporary fasteners are sometimes installed when the permanent fasteners – the cladding fasteners – are installed very soon after the DuPont™ Tyvek® WRB is installed. If temporary means of attachment are used, it is important to note there is an increased risk of blow off or damage to the WRB. Therefore, DuPont requires installing the permanent fasteners as soon as practically possible.

Temporary fastening methods can include adhesive/primer installed in vertical strips along stud lines, recommended fasteners installed at a reduced schedule, or other methods. Flashing patches can be installed behind cladding fasteners for increased air barrier and water holdout performance.

DuPont™ Tyvek® Wrap Cap Fasteners should not be installed where DuPont Self-Adhered Flashing Products or DuPont™ Tyvek® Tape will be applied to avoid interference with the adhesion of these products. DuPont™ Tyvek® Wrap Cap Fasteners can be installed over DuPont Self-Adhered Flashing Products or DuPont™ Tyvek® Tape.

**UV Exposure**

DuPont™ Tyvek® CommercialWrap® and DuPont™ Tyvek® CommercialWrap® D must be covered within nine months (270 days) of installation and all other DuPont™ Tyvek® WRBs must be covered within four months (120 days) of installation. DuPont Flashing products also have a UV exposure limit. DuPont® FlexWrap® NF and DuPont® StraightFlash™ products should be covered within nine months (270 days) and DuPont® Flashing Tape products should be covered within four months (120 days).

**Primer**

Adverse weather conditions or cold temperatures (below 25°F, -4°C) 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. Primer is not required when DuPont™ Self-Adhered Butyl Flashing Products are being applied to wood, except when there are cold temperatures as described above.

**Sealants**

DuPont™ Residential Sealant is a high-quality water-based sealant with minimal fillers like calcium carbonate that can reduce shrinkage at the expense of lowering sealant adhesion performance. DuPont™ Residential Sealant cures by evaporation of water; and therefore, must be tooled flat (not concave) to result in a concave manner after curing. Other sealants like silicones and hybrid chemistries are tooled in a concave manner to result in the proper concave shape desired for joint design. Highly filled acrylics may also shrink less at the expense of lower performance. For information about additional sealants used with DuPont Building Envelope Solutions products, refer to the Technical Bulletin Chemical Compatibility of Representative Building Sealants, DuPont™ Tyvek® Commercial Weatherization Systems Products (K-27282).

**Installation Guideline Applicability**

There are a variety of DuPont™ Tyvek® WRB and Flashing Systems Installation Guidelines for Buildings Less Than 5 Stories and Low-Rise Multi-Family Residential Buildings Less Than 6 Stories available for various conditions. Each of the Guidelines and associated applicability is included below.

**DuPont™ Tyvek® WRB Installation Guidelines**

2. DuPont™ Tyvek® Installation Guide for Water Resistive Barriers for Residing (K-22331) – Installation instructions for installing DuPont™ Tyvek® WRBs on residing projects that include integration of the WRB with existing window flashing.
DuPont Self-Adhered Flashing Installation Guidelines
1. *DuPont®* Self-Adhered Flashing Systems Installation Guidelines—Installation Instructions for Windows and Doors After Water-Resistant Barrier (WRB) is Installed (K-17934)
2. *DuPont®* Self-Adhered Flashing Systems Installation Guidelines—Installation Instructions for Windows and Doors Before Water-Resistant Barrier (WRB) is Installed (K-17933)
3. DuPont Self-Adhered Flashing Systems Alternate Flanged Window Detail Aligned with FMA/AAMA 100-12 (Methods A, B, & C) (K-27329) – Describes 3 alternate window flashing methods that are aligned with FMA/AAMA 100-12 which includes procedures for the installation of windows into wood frame buildings subject to extreme wind and water climate exposure.
4. Installation of Integral Flanged Windows in Recessed Openings After Water-Resistant Barrier (WRB) Is Installed for up to 4" Recess Using Single and Double Stud Window Framing (K-27349) – Describes methods for installing windows into shallow recessed window conditions after the WRB has been installed. This condition is more common in the Southwest.
5. Installation of Integral Flanged Windows in Recessed Openings Before Water-Resistant Barrier (WRB) is Installed for up to 4" Recess Using Single and Double Stud Window Framing (K-27340) – Describes methods for installing windows into shallow recessed window conditions before the WRB has been installed. This condition is more common in the Southwest.
6. Installation of Integral Flanged Windows in Recessed Openings After Water-Resistant Barrier (WRB) is Installed for Greater Than 4" Recess Using Single and Double Stud Window Framing (K-27358) – Describes methods for installing windows into deep recessed window conditions after the WRB has been installed. This condition is more common in the Southwest.
7. Installation of Integral Flanged Windows in Recessed Openings Before Water-Resistant Barrier (WRB) is Installed for Greater Than 4" Recess Using Single and Double Stud Window Framing (K-27358) – Describes methods for installing windows into deep recessed window conditions before the WRB has been installed. This condition is more common in the Southwest.
8. *DuPont®* Flashing Tape for Inside and Outside Wall Corners (K-27372) – Describes methods for providing enhanced protection of both inside and outside corners created by intersecting walls using 12" wide *DuPont®* Flashing Tape.

Air Barrier Installation Bulletins
There are also a series of Installation Bulletins available that describe details for establishing an air barrier for selective conditions within a home.
1. *DuPont®* Tyvek® Weatherization Systems, Air Barrier Installation Detail: Top and Bottom of Wall (K-27367)
2. *DuPont®* Tyvek® Weatherization Systems, Air Barrier Installation Detail: Garage to Attic Interface (K-27368)
3. *DuPont®* Tyvek® Weatherization Systems, Air Barrier Installation Detail: Cantilever Interface (K-27369)
4. *DuPont®* Tyvek® Weatherization Systems, Air Barrier Installation Detail: Attic Knee Wall Interface (K-27370)

Educational Materials
In addition to the installation guidelines listed above, DuPont offers the following publications related to building envelope products, installations, and building science.

Tech Talk
*Weather Barriers are a Must with Exterior Foam Sheathing* (K-25107)

Building Science Bulletins
- *The Truth About Vapor Permeability* (K26358)
- *DuPont® Tyvek® HomeWrap®* (K-16325)
- *Understanding High Perm vs. Low Perm* (K-01472)
- *Chemical Compatibility of Representative Building Sealants, DuPont® Tyvek® Commercial Weatherization Systems Products* (K-27282)

White Paper
- *DuPont Building Innovations White Paper – Vapor Permeable or Impermeable Building Envelope Materials, Does it Matter?* (K-26352)

ADDITIONAL RESOURCES

Specialist Network
The DuPont® Tyvek® Specialist Network is an elite team of more than 180 highly-trained field representatives dedicated to keeping up with trends and supporting installations before, during and after construction. From the latest updates on building codes to keeping up with current challenges, local DuPont® Tyvek® Specialists can provide on-site consulting and training to help make sure the job gets done right.

Certified Installer
DuPont offers a program to train installers on the basics of building science, product knowledge, and proper installation of DuPont Weatherization products. These installers receive classroom and on-site training on proper installation techniques and safety practices from a DuPont® Tyvek® Specialist and must pass written and hands-on installation tests to become part of the Certified Installer network.

Building Envelope CEU: AIA/CES Learning Units
DuPont is a participant in the American Institute of Architects’ Continuing Education Systems (AIA/CES) Registered Provider program and offers a range of AIA/CES Learning Units designed to help building professionals stay up-to-date on best building practices and specifications. These units cover a wide range of weatherization-related topics, ranging from Better Design of Buildings to Moisture Management Systems Review to Commonly Made Energy Mistakes. Within the AIA/CES system, a Learning Unit (LU) is earned for each 60-minute increment of instruction or study. A Continuing Education Unit (CEU) is earned for each 10 hours of instruction or study. Each of these CEUs can be presented by your local Tyvek® Certified Specialists.
Sealing Penetrations – Non-Flanged Products

**DuPont Tyvek WRB Installation**

Fasteners installed directly to studs and spaced 6-18” per schedule.
- DuPont Tyvek Wrap Cap, nails, screws, or staples
- Other cap staples for Stinger Cap, or other manufacturers’ equivalent fasteners
- No fasteners within 6” of window sill and jambs and 9” of window head.

Vertical overlaps 6”-12” and horizontal overlaps min. 6”
- All vertical seams taped with DuPont Tyvek Tape.
- DuPont Tyvek WRB at bottom of wall
- Extends over sill plate interface by 2” or
- Extends to bottom of sill plate for slab on grade foundations, or
- Integrates with metal flashing or weep screed when present, or
- Extends over sill plate interface by min. 1” when sealed or skip-sealed with DuPont Tyvek Tape, DuPont Building Envelope Solutions products, or DuPont Residential Sealant

**Integral Flanged Window Installed After WRB**

Step 1: DuPont Tyvek WRB cut back 1” around penetration with head flap cut above.
- First piece of DuPont FlexWrap™ NF installed around bottom of penetration before second piece installed around top of penetration, overlapping bottom layer by 2”.
- Head flap sealed using DuPont Tyvek Tape or DuPont Self-Adhered Flashing products.

Step 2: DuPont Tyvek WRB installed to overlap piece below by min. 6”.

**Bottom of Wall Examples**

**Option 1:**
- Seal DuPont Tyvek™ WRB onto foundation with DuPont™ Self-Adhered Flashing product
- 3” Tape for DuPont™ Tyvek® StuccoWrap®, DrainWrap®, CommercialWrap® and CommercialWrap® D
- 2” Tape for DuPont™ Tyvek® HomeWrap®

**Steps:**
- Seal all terminations at top and bottom of wall.
- Install 1” to 2” bead of DuPont® Residential Sealant 2-3” from edges, or
- Terminate with DuPont™ Tyvek® Tape, DuPont® StraightFlash®, or DuPont® Flashing Tape
- (DuPont® Residential Sealant, DuPont® StraightFlash® or DuPont® Flashing Tape with DuPont® Adhesive/Primer for concrete and wood, or other rough surfaces)

**Option 2:**
- Seal DuPont Tyvek™ WRB onto DuPont Self-Adhered Flashing product using DuPont™ Tyvek® Tape

For Air Barrier installations:
- All horizontal seams taped
- Install 1/4” bead of DuPont® Residential Sealant 2-3” from edges, or
- Terminate with DuPont™ Tyvek® Tape, DuPont® StraightFlash®, or DuPont® Flashing Tape
- (DuPont® Residential Sealant, DuPont® StraightFlash® or DuPont® Flashing Tape with DuPont® Adhesive/Primer for concrete and wood, or other rough surfaces)

**Sealant Application Examples**

For flanges:
- Terminate with DuPont® Tyvek® Tape, DuPont® StraightFlash®, or DuPont® Flashing Tape
- or DuPont® Self-Adhered Flashing products

For flat surfaces:
- Terminate with Duraplay® Adhesive/Primer for concrete and wood, or other rough surfaces

**For Skips**
- Skip sealing at the sill
- Skip sealing at the bottom
- Skip sealing at the top

**Residential User’s Bulletin – Field Installation Examples**

This document is designed to serve as a resource. The examples provided do not override or change any requirement in the currently published Installation Guidelines or Warranties. Always refer back to the applicable Installation Guidelines and Warranties, available at www.tyvek.com, for complete information.
Residential User’s Bulletin – Field Installation Examples

Sealing Penetrations – Beam Penetration

DuPont® Tyvek® WRB installed across wall so top edge of WRB is at bottom of beam.

Two pieces of DuPont® Tyvek® WRB installed on either side of beam and sealed with DuPont® Tyvek® Tape. The two pieces extend min. 3" above top of beam and overlap lower WRB course min. 6".

First piece of DuPont® FlexWrap® NF installed around bottom of penetration before second piece installed around top of penetration, overlapping bottom layer by 2".

DuPont® Tyvek® WRB installed above beam, overlapping lower courses with 1" gap above beam.

All horizontal and vertical seams taped with DuPont® Tyvek® Tape.

Metal Flashing at Cladding Transitions

Option 1: DuPont® Tyvek® WRB Installed Before Metal Flashing

- "Z" or "L" metal flashing installed over lower façade and fastened onto DuPont® Tyvek® WRB with mechanical fasteners or DuPont® Adhesive/Primer.
- Vertical leg of metal flashing terminated to DuPont® Tyvek® WRB with DuPont Self-Adhered Flashing products with min. 2" adhesion to WRB and no WRB fasteners under metal flashing.

Option 2: Metal Flashing Installed During Installation of DuPont® Tyvek® WRB “Z” or “L” metal flashing fastened over lower façade and directly onto sheathing with mechanical fasteners or DuPont® Adhesive/Primer. Vertical leg of metal flashing terminated to sheathing with DuPont Self-Adhered Flashing products with min. 2” adhesion onto sheathing. Next course of DuPont® Tyvek® WRB installed with min. 2” overlap of self-adhered flashing. WRB terminated to self-adhered flashing using DuPont® Tyvek® Tape or DuPont® Residential Sealant.

Adjacent Integral Flanged Windows Installed After WRB

"I" cut WRB at rough openings with continuous horizontal cuts at head and sill. 45" cuts at window head extending min. 8" from corners. Flaps at jams folded into the opening and secured. Head flap flipped up and secured.

DuPont® FlexWrap® NF installed at each sill extending min. 6" up jams.

9" DuPont® StraightFlash® or DuPont® Flashing Tape installed onto vertical framing, bottom edge aligned with sill, top edge extending 4" above head.

Horizontal cuts in flashing along top of head to edge of vertical flashing. Flashing flaps folded into rough opening and adhered to inside framing. Sealant applied to three sides of the window opening at jams and head.

Optional: Skip sealing at the sill for drainage. Window installed per manufacturer’s specifications.

DuPont® StraightFlash® or DuPont® Flashing Tape applied over flanges at jams and head.

Head flap trimmed 1/2" and secured over head flashing with DuPont® Tyvek® Tape or DuPont® Self-Adhered Flashing products.

Full interior perimeter seal applied.

Brick Mold Window Installed After WRB

DuPont® StraightFlash® VF applied to interior side of window frame along jams and head (head piece installed first).

"I" cut WRB at rough opening. 45" cuts at window head extending 8" from corners. Head flap flipped up and secured. Flaps at jams folded into the opening and secured.

DuPont® FlexWrap® NF installed at the sill extending min. 6" up jams. Integrated back dam as applicable.

Release paper removed from DuPont® StraightFlash® VF and flashing adhered at jams and head.

Building installed per manufacturer’s specifications.

Head flap trimmed 1/2" and secured over head flashing with DuPont® Tyvek® Tape or DuPont® Self-Adhered Flashing products. Optional: drip cap installed with head flap lapped over drip cap.

Optional: high pressure skirt installed to door frame prior to door installation for higher performance requirements.

Full interior perimeter seal applied.

Brick Mold Door Installed After WRB

DuPont® StraightFlash® VF applied to interior side of door frame along jams and head (head piece installed first).

"I" cut WRB at rough openings with continuous horizontal cuts at head and sill. 45" cuts at window head extending min. 8" from corners. Flaps at jams folded into the opening and secured. Head flap flipped up and secured.

DuPont® FlexWrap® NF installed at each sill extending min. 6" up jams.

9" DuPont® StraightFlash® or DuPont® Flashing Tape installed onto vertical framing, bottom edge aligned with sill, top edge extending 4" above head.

Horizontal cuts in flashing along top of head to edge of vertical flashing. Flashing flaps folded into rough opening and adhered to inside framing. Sealant applied to three sides of the window opening at jams and head.

Optional: Skip sealing at the sill for drainage. Window installed per manufacturer’s specifications.

DuPont® StraightFlash® or DuPont® Flashing Tape applied over flanges at jams and head.

Head flap trimmed 1/2" and secured over head flashing with DuPont® Tyvek® Tape or DuPont® Self-Adhered Flashing products.

Full interior perimeter seal applied.

Repairing Tears/Holes in the WRB

Small Tears

Tears covered with DuPont® Tyvek® Tape or DuPont® Self-Adhered Flashing System products.

Holes Greater than 1"

Sil cut 2" above hole and extending 2" on each side of hole. Piece of DuPont® Tyvek® WRB tucked into the slit to maintain proper shingling. Seams around DuPont® Tyvek® WRB taped, working from bottom to top.

For more information visit building.dupont.com or call 1-866-583-2583

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