

DuPont Commercial Wall² System

Inverted Wall

Installation Bulletin

- Optimizes Thermal Efficiency and Durability Using DuPont™ Styrofoam™ Brand Extruded Polystyrene (XPS) Insulation or Thermax™ brand rigid foam insulation (ISO).
- Maximizes Air and Water Protection Using DuPont™ Tyvek® Mechanically Fastened or Fluid Applied Membranes.
- Meets Fire Performance Requirements of NFPA 285.



Table of Contents

Introduction.....	3
DuPont Commercial Wall ² System Applicable Products.....	3
DuPont Commercial Wall ² System Warranty Information.....	3
DuPont Commercial Wall ² System Exterior Sheathing and/or Exterior Cladding Fastener Considerations.....	3
Inverted Wall.....	4

Introduction

The DuPont Commercial Wall² System in this document is based on in-depth, rigorous testing of enhanced wall assemblies that reflect the “Power of Two” when DuPont™ Tyvek® and DuPont™ Styrofoam™* or DuPont™ Thermax™* are used together to protect the building above and beyond building code minimums. Designers and building owners can enjoy greater peace of mind knowing that DuPont scientists and engineers have done the hard work to ensure assembly robustness when installers follow our guides. Use of this bulletin is limited to construction of the DuPont Commercial Wall² System outlined herein and is designed to serve as a resource for building professionals and installers using DuPont Performance Building Solutions Products in commercial construction. It does not override or change requirements in the DuPont Performance Building Solutions Installation Guidelines or product-specific Warranties, with the exception of using Rodenhouse Thermal-Grip® ci fasteners in lieu of DuPont™ Tyvek® Wrap Cap screws to qualify for the enhanced Commercial Wall² System Warranty. The DuPont Commercial Wall² System Warranty is based on use of the applicable products and components in the manner outlined in this bulletin. Please refer to the applicable DuPont Performance Building Solutions Product Installation Guideline for proper installation and requirements, technical specifications, codes and standards, and safe handling of **DuPont™ Tyvek® Air and Water Barriers, Fluid Applied products, Self-Adhered Flashing Systems products, Styrofoam™ Brand Extruded Polystyrene (XPS)*, or Thermax™ Brand Polyisocyanurate Insulation*** products. Product specific information is available at building.dupont.com/commercial.

DuPont Commercial Wall² System Exterior Sheathing and/or Exterior Cladding Fastener Considerations

It is important to consider minimizing the total number of fasteners used to attach the exterior sheathing, and/or the furring/external cladding attachment systems for optimum thermal efficiency. In many cases a metal furring or metal cladding attachment system will be installed over the exterior sheathing and/or air and water barrier with a defined fastening pattern required to meet structural and attachment requirements for the exterior cladding. All fasteners used for exterior sheathing and/or furring and cladding attachment systems should be securely fastened back to the metal framing structure as per manufacturer recommendations. When furring or cladding attachment systems are used, Project Construction Management may determine if conditions allow the fastening pattern of the exterior sheathing to be reduced with the subsequent required fasteners used to secure the furring/external cladding attachment system. The design requirements for the attachment of gypsum sheathing and/or furring and exterior claddings over exterior insulation on steel wall framing is specifically addressed in Section 2603.12 of the 2015 IBC. For more information about fastening considerations, refer to “*The Use of STYROFOAM™ Brand Insulation in the Commercial Inverted Wall Assembly*” available at building.dupont.com/commercial.

DuPont Commercial Wall² System Applicable Products

DuPont™ Exterior Continuous Insulation

(Up to 3” depending on NFPA 285 approval and IBC)

- Styrofoam™ Brand Extruded Polystyrene (XPS)*
- Thermax™ Brand Polyisocyanurate Insulation*

DuPont™ Mechanically Fastened Air and Water Barriers

- DuPont™ Tyvek® CommercialWrap®
- DuPont™ Tyvek® CommercialWrap® D

DuPont™ Tyvek® Fluid Applied Products

- DuPont™ Tyvek® Fluid Applied WB+™
- DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+
- DuPont™ Sealant for Tyvek® Fluid Applied System

DuPont™ Self-Adhered Flashing Products

- DuPont™ FlexWrap™
- DuPont™ StraightFlash™

Installation Accessories

- DuPont™ Tyvek® Tape 3”
- Rodenhouse Thermal-Grip® ci washers**
- Grip-Deck® ceramic-coated self-drilling screws (#8 or #10)**

DuPont Commercial Wall² System Warranty Information

In order to make a claim under the [DuPont Commercial Wall² Systems Warranty](#), you must have met all of the terms and conditions of the warranty including use of the applicable DuPont Installation Guidelines and this *DuPont Commercial Wall² System - Inverted Wall Installation Bulletin*, and be compliant with local building codes including assembly-specific details for NFPA 285. Please visit building.dupont.com/warranties for more information about the warranty.

*A former product of The Dow Chemical Company.

**Apply per manufacturer’s 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.

Inverted Wall

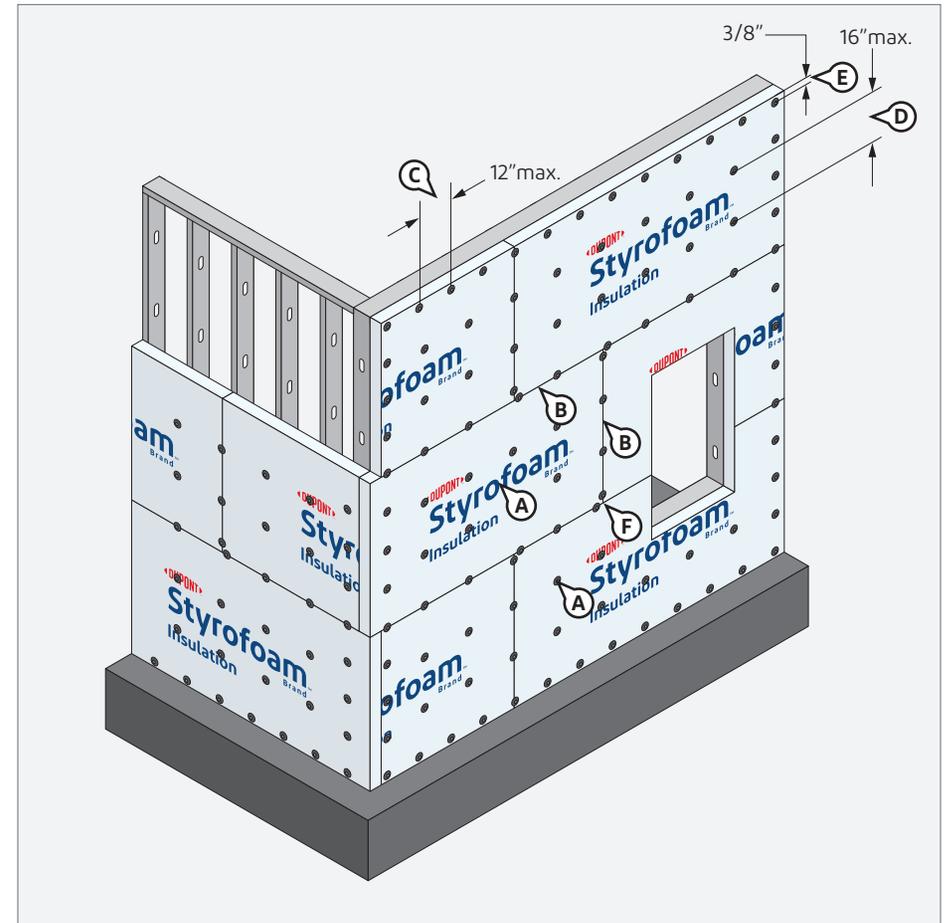
STEP 1

Install **DuPont™ Styrofoam™ Brand Extruded Polystyrene (XPS) Insulation*** or **DuPont™ Thermax™ Brand Rigid Foam Insulation (ISO)*** to Metal Studs.

Note: Insulation boards can be up to 3" thick depending on NFPA 285 approval and IBC.

- A. Secure insulation boards to metal studs with printed side facing to the exterior using Rodenhouse Thermal-Grip® ci fasteners or approved alternate. Please contact DuPont for most current list.
- B. Abut boards tightly together. Common practice is to stagger boards but, it is not required.
- C. Fasten insulation boards @ max. 12" o.c. at wall perimeters.
- D. Fasten insulation boards @ max. 16" o.c. around openings and in field of wall.
- E. Set back perimeter fasteners 3/8" from board edges and ends.
- F. One fastener can be used at intersection of 2 boards but, use at least 2 fasteners at intersection of 3 or more boards.

Note: It is important to consider minimizing the total number of fasteners used to attach the insulation, gypsum sheathing, and mechanically fastened air and water barrier to ensure optimal thermal efficiency. The number of fasteners is based on wall installation sequencing and local weather conditions expected during the wall construction process. The insulation boards need only be fastened with the minimum number of fasteners to hold it in place until the gypsum sheathing is installed. If the elapsed time between insulation installation and gypsum installation is sufficiently brief and weather conditions are sufficiently mild, as determined by Project Construction Management, the insulation boards may be installed with as few as 5 fasteners, one in each corner and one in the middle of the board along a stud line. The gypsum sheathing should be installed before weather conditions arise that would require additional securement for the insulation boards. Please refer to *The Use of Styrofoam™ Brand XPS Insulation in Commercial Inverted Wall Assembly Guide* for additional information.

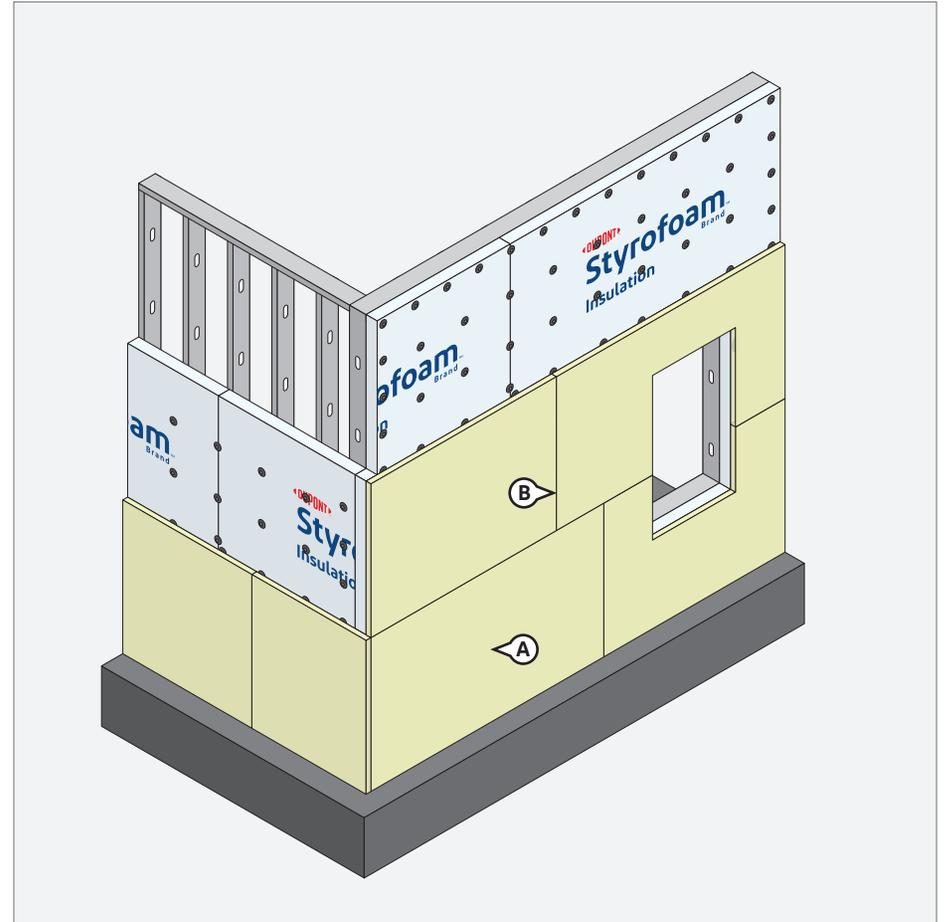


*Styrofoam™ is a former product of The Dow Chemical Company.

STEP 2

Install Exterior Gypsum Sheathing

- A. Secure exterior gypsum sheathing over insulation boards, fastening directly through the insulation boards to the studs according to manufacturer guidelines.
- B. Avoid overlapping vertical seams of the exterior gypsum sheathing with the vertical seams of the insulation boards.



STEP 3

Install **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D Air and Water Barrier**.

(Skip to Alternate Step 3 when installing **DuPont™ Tyvek® Fluid Applied WB+™** over exterior gypsum sheathing).

- A. Starting at a corner of the building, unroll the **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D** keeping the roll plumb. Extend approximately 12" past inside or outside corners.

Note: Install rolls from the bottom of the building up to ensure proper shingling. **DuPont™ Tyvek® CommercialWrap®** may be installed vertically. **DuPont™ Tyvek® CommercialWrap® D** must be installed horizontally with the grooves running vertically.

- B. When starting the next roll of **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D**, overlap the vertical edge of the previous roll by at least 6".

- C. The **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D** should overlap through wall flashing by a minimum of 6". Terminate the **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D** at the bottom of the wall with **3" DuPont™ Tyvek® Tape**, or **DuPont™ self-adhered flashing products**.

- D. Secure the **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D** by fastening into the studs using Rodenhouse Thermal-Grip® ci flat washers with #8 or #10 Grip-Deck® ceramic-coated self-drilling screws of sufficient length to ensure proper attachment. Please contact DuPont for most current list approved alternate fasteners.

Note: **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D** are typically installed with 12" to 18" spacing on center, however, it is acceptable to install recommended fasteners at a reduced schedule of 24" to 48" provided the exterior cladding fasteners (permanent fasteners) are installed as soon as practically possible to maintain the integrity and performance of the DuPont™ Tyvek® air and water barrier.

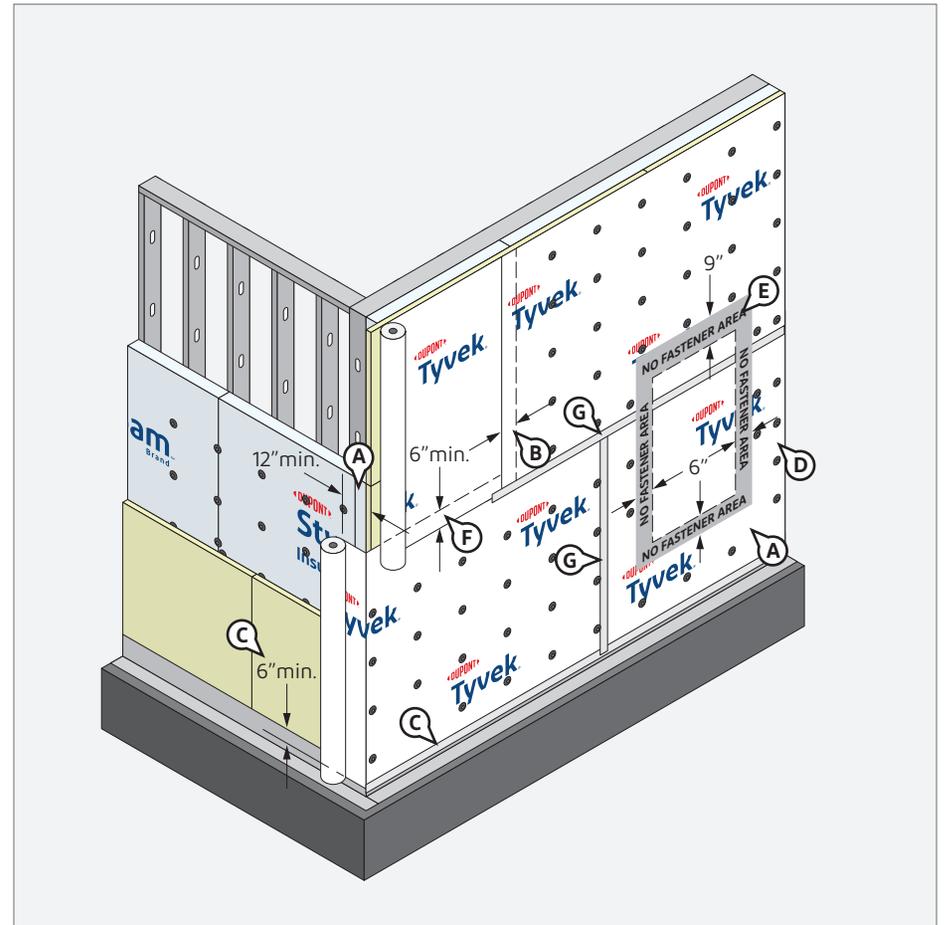
Press the **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D** tightly into any inside corners before fastening to prevent damage by cladding installation.

- E. Unroll directly over window and door rough openings. Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings. The **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D** will be secured at these locations during window flashing installation.

- F. When installing additional courses of **DuPont™ Tyvek® CommercialWrap®** or **CommercialWrap® D**, the upper layer should overlap the bottom layer by a minimum of 6".

- G. Tape all horizontal and vertical seams with **3" DuPont™ Tyvek® Tape**.

Please refer to the *DuPont™ Tyvek® Mechanically Fastened Air and Water Barrier Installation Guidelines* and the *DuPont Self-Adhered Flashing Systems Installation Guidelines for Buildings Greater Than 4 Stories* for additional information.



ALTERNATE STEP 3

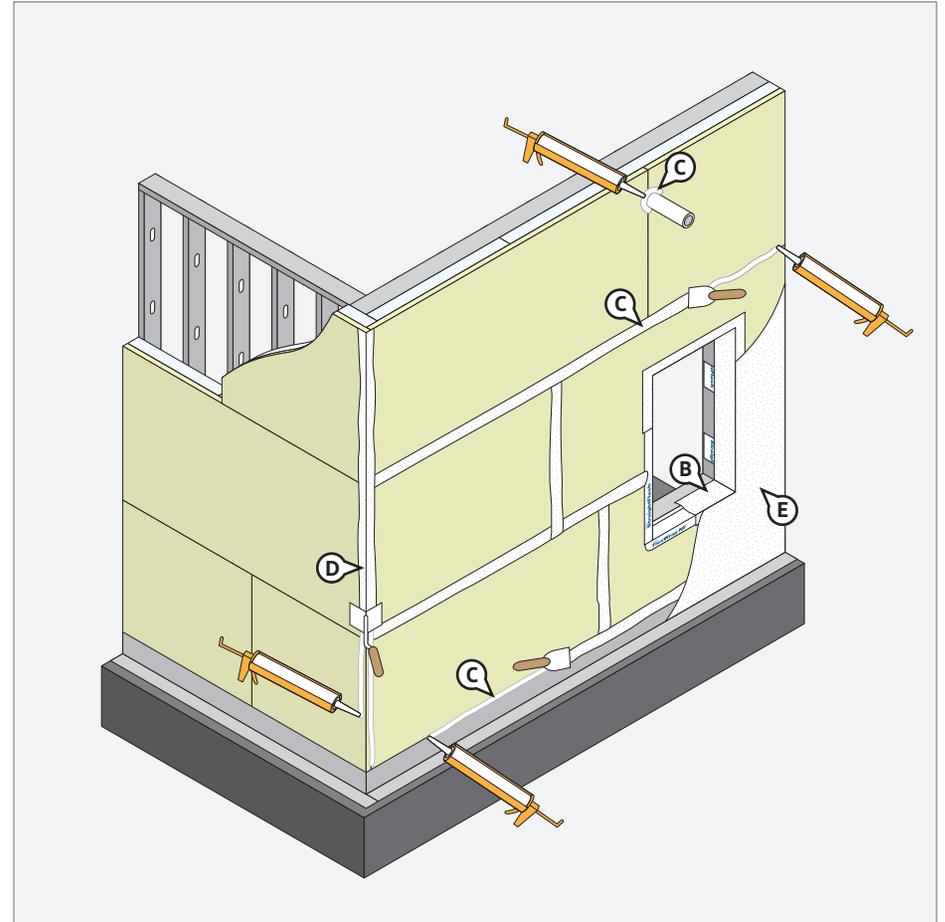
Install DuPont™ Tyvek® Fluid Applied WB+™

- A. Prepare exterior gypsum sheathing by removing any substance that may affect the adhesion of **DuPont™ Tyvek® Fluid Applied products**, such as dirt, dust, frost, oil, grease, and mold.
- B. Install **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** or **DuPont™ Self-Adhered Flashing products** around windows and doors in accordance with the *DuPont™ Tyvek® Fluid Applied Flashing Installation Guidelines*.

Note: For spray applications of **DuPont™ Tyvek® Fluid Applied WB+™**, the outer edge of **DuPont™ Self-Adhered Flashing products** should be treated with **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** tapered to the wall substrate to help ensure installation is free of pinholes and voids.

- C. Treat exterior gypsum seams, edges of through wall flashing, and seal around penetrations, as necessary, using **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** or Sealant for **DuPont™ Tyvek® Fluid Applied System** according to the *DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines*.
- D. Treat all inside and outside corners by applying a 25 mil thick coat of **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+**, 2" onto each adjoining surface. It is recommended that a fillet bead of **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+** be applied to corners to help ensure continuity. Alternately, corners may be treated using **DuPont™ StraightFlash™**. Be sure that **DuPont™ StraightFlash™** is pressed tightly into the inside corners and is fully adhered to substrate.
- E. Apply **DuPont™ Tyvek® Fluid Applied WB+™** by spraying or rolling a 25-mil (0.635 mm) wet coat onto exterior gypsum sheathing. See *DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines* for coverage rates and cure times. Thickness should be controlled by applying the appropriate volume over a marked area and by spot checking with a wet mil gauge. Integrate **DuPont™ Tyvek® Fluid Applied WB+™** with through wall flashing and window/door flashing by overlapping the flashing with **DuPont™ Tyvek® Fluid Applied WB+™** by a minimum of 2". Upon completion, inspect the membrane to ensure that it is continuous and free of any voids or pinholes.

Note: See *DuPont™ Tyvek® Fluid Applied WB+™ Wall and Substrate Guidelines* for substrate priming requirements for **DuPont™ Self-Adhered Flashing products**.



This bulletin is limited to the installation details for construction of the DuPont Commercial Wall² System outlined herein. Please refer to the applicable DuPont Performance Building Solutions Installation Guidelines available at building.dupont.com for details not included in this bulletin. 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.

*It is intended for informational use by persons having technical skill for evaluation and at their own discretion and risk. Since conditions of use are outside our control, **DuPont makes no warranties, express or implied, including, without limitation, no warranties of merchantability or fitness for a particular use and assume no liability in connection with any use of this information. This information is not intended as license to use or infringe any trademark, patent or technical information.** This information is not intended to be used by others for advertising, promotion, or other publication for commercial purposes.*

DuPont[®], the DuPont Oval Logo, CommercialWrap[®], FlexWrap[™], HomeWrap[®], StraightFlash[™], Styrofoam[™], Thermax[™], and Tyvek[®] are trademarks, service marks or registered trademarks of affiliates of DuPont de Nemours, Inc. © 2019 DuPont de Nemours, Inc. All rights reserved.

43-D100370-enUS-0619

DUPONT
Tyvek | **Thermax** | **Styrofoam**
Brand Brand Brand

For more information about DuPont Performance Building Solutions, please call 1-800-448-9835 or visit us at building.dupont.com/commercial