

Building & Construction



Protection for all six sides

Water, air and thermal solutions for building & construction



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Better buildings start with better construction technology

The future of building begins now and DuPont Performance Building Solutions is committed to being in step with where the construction industry is going. Our robust portfolio of proven and compatible products brings together decades of technology, expertise and innovation to provide water, air and thermal protection for all six sides of your building envelope.

And it's all backed by the expertise of building science leaders who are dedicated to your success and warranties from a name you trust. Protecting all six sides of your building, from foundation to walls to roof and the transitions in between, is our commitment to you.

Protection for all six sides

There are no insignificant details on a building project. It's critical to ensure full building envelope protection from water, air and thermal intrusion, at every level, and at every transition. DuPont has the solutions you need to ensure complete, lasting coverage.

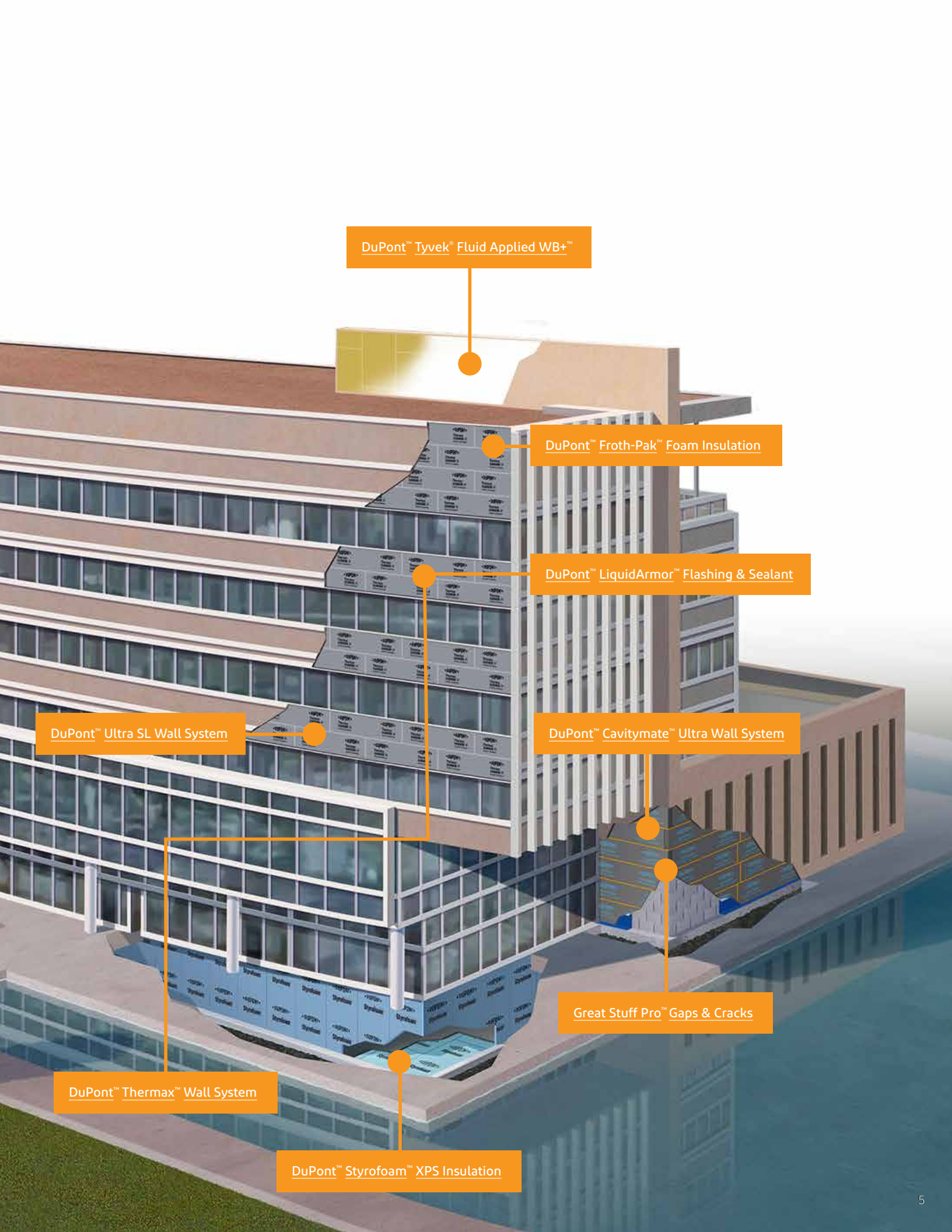


DuPont™ Insta Stik™ Roofing Adhesive

DuPont™ Tyvek® Commercial Wrap® D
DuPont™ FlexWrap™ EZ Adhesive Tape
DuPont™ StraightFlash™ Premium
Self-Adhered Flashing Material

DuPont™ Styrofoam™ Roofmate™ XPS Insulation

DuPont™ Styrofoam™ Highload XPS Insulation



DuPont™ Tyvek® Fluid Applied WB+™

DuPont™ Froth-Pak™ Foam Insulation

DuPont™ LiquidArmor™ Flashing & Sealant

DuPont™ Ultra SL Wall System

DuPont™ Cavitymate™ Ultra Wall System

Great Stuff Pro™ Gaps & Cracks

DuPont™ Thermax™ Wall System

DuPont™ Styrofoam™ XPS Insulation

Energy-efficient structures are built from the ground up

Foundation and slab

DuPont's science-based insulation materials are durable and easy to install, making them ideal for slab foundations and interior and exterior below-grade walls.



DuPont™ Styrofoam™ Perimate™ XPS Foam Insulation

R-value 5.0/inch

- Sturdy, moisture-resistant foam board insulation for exterior foundations
- Covered with patented dovetail grooves on one face to channel water down to footing drains or weeping tiles
- Manufactured with shiplap edges on the long edges



DuPont™ Styrofoam™ Square Edge XPS Foam Insulation

R-value 5.0/inch

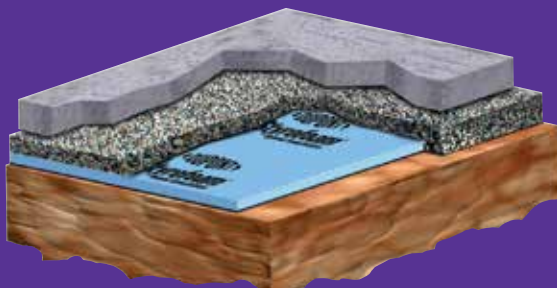
- Water-resistant insulation for foundations and crawlspaces
- Minimum compressive strength of 25 psi and a flexural strength of 50 psi
- Designed to ensure energy efficiency and minimize onsite cutting and waste

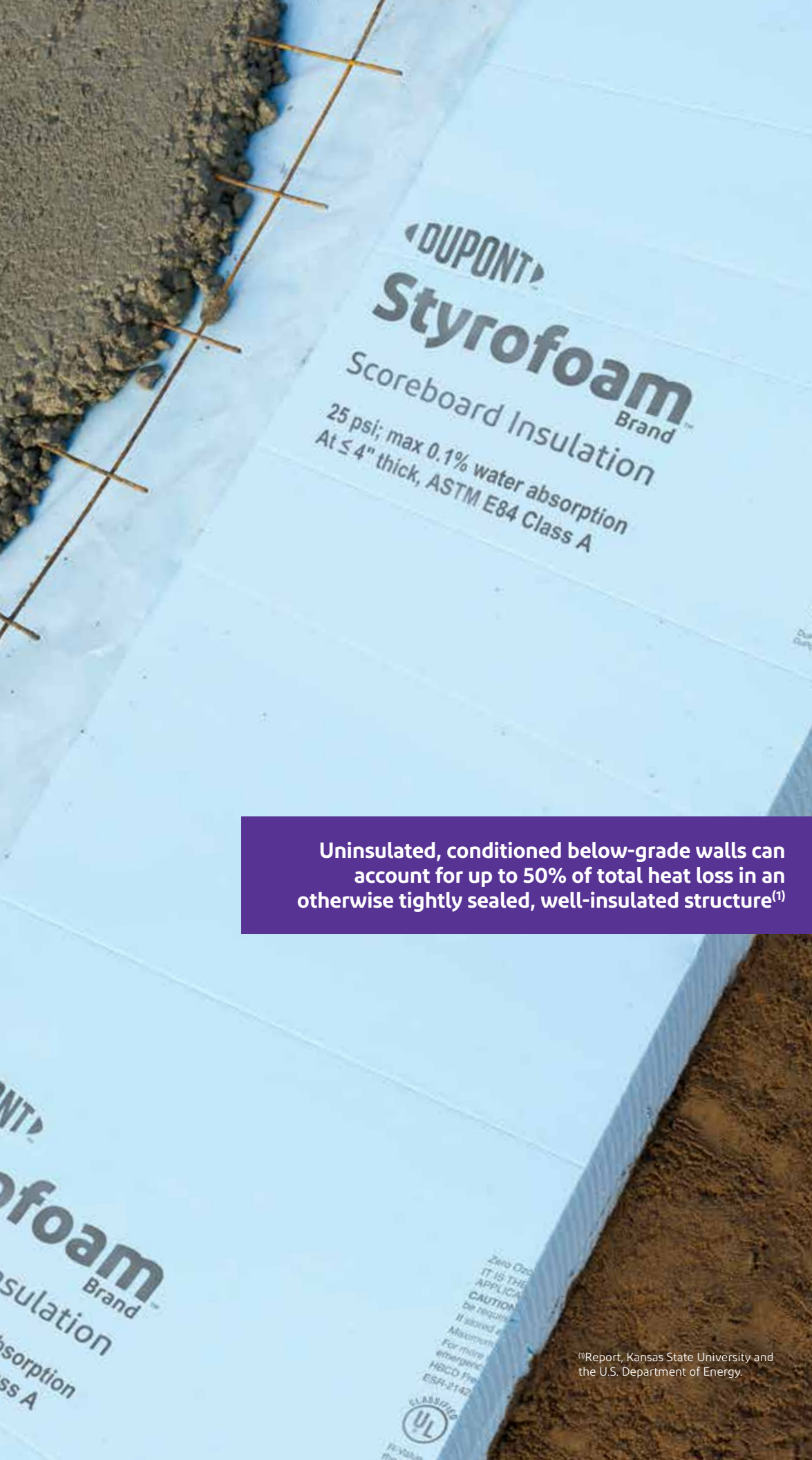


DuPont™ Styrofoam™ High Load XPS Foam Insulation

R-value 5.0/inch

- Tough, versatile insulation for commercial high-load, low-temperature and geotechnical applications
- Superior resistance to water absorption, water vapor transmission and freeze/thaw cycling
- Long-term compressive strength in load-bearing applications
- Exceptional R-value retention
- Resists compressive creep and fatigue





Uninsulated, conditioned below-grade walls can account for up to 50% of total heat loss in an otherwise tightly sealed, well-insulated structure⁽¹⁾

Advantages of insulating the exterior of foundation walls



Thermal bridging

A block or concrete wall insulated on the exterior surface is not subjected to large temperature differences, so it will not act as a thermal bridge.

Temperature fluctuations

Block walls insulated on the exterior undergo less air convection in block cavities. At nearly room temperature, the basement walls act as a heat reservoir, buffering interior temperature fluctuations. In some instances, adfreezing forces are prevented from acting directly on the basement wall.

Living space

Unlike interior insulation applications, no usable space is lost.

DuPont™ Styrofoam™ – the performance choice

DuPont™ Styrofoam™ insulation products from DuPont have unique properties that enable them to outperform other products in exterior foundation insulation applications.

⁽¹⁾Report, Kansas State University and the U.S. Department of Energy.

Systemic solutions for complete building envelope protection

Exterior walls

Exterior wall solutions from DuPont provide a systematic approach that works for your entire building envelope. Innovative, yet easy-to-install, our exterior insulation systems and sealants help architects and contractors deliver high-performance buildings.

DuPont™ Styrofoam™ Cavitymate™ XPS Foam Insulation

R-value 5.0/inch

- Moisture-resistant, durable and lightweight
- Extruded polystyrene foam board specifically designed for use in wet cavity wall environments in commercial applications



DuPont™ Thermax™ XARMOR™ (ci) Exterior Insulation

- Optimized for use behind rainscreen exteriors
- Toughest insulation available for the DuPont™ Thermax™ Wall System
- 4.0-mil embossed exterior foil facer provides durability and long-term performance



DuPont™ Thermax™ Sheathing Foam Insulation

- Engineered for concealed and exposed applications
- A nonstructural rigid board material consisting of a fiberglass-infused foam core that helps improve fire performance and dimensional stability



DuPont™ Tyvek® CommercialWrap®

- Engineered to provide excellent performance as a weather barrier
- 270 days of UV resistance delivers added strength and durability needed in commercial construction
- Provides weather protection, air and moisture management, and energy savings



DuPont™ Tyvek® CommercialWrap® D

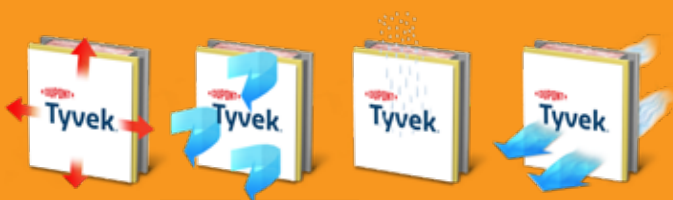
- Premium, durable weather barrier
- Specially engineered surface texture for superior water drainage
- High tear and wind-load resistance
- 270 days of UV resistance
- Provides weather protection, air and moisture management, and energy savings



DuPont™ Tyvek® Fluid Applied WB+™

High vapor permeability (22 perm @ 25 mil)

- Fluid-applied weather barrier solution with excellent low-temperature crack-bridging
- 300% elongation and 99% recovery
- Fast rain resistance; tack-free in 2 hours
- 99% solids content for single-coat coverage with less pinholing
- 2-3 times the coverage of other fluid-applied WRBs when used at recommended application thickness





The most environmentally sustainable building in Virginia



The Chesapeake Bay Foundation's Brock Environmental Center

Goal

Set the standard for enduring, sustainable construction by achieving LEED® Platinum and Living Building Challenge™ certification. Be the first building in the state to embrace a net-zero energy and net-zero water approach.

Challenges

The site is in a coastal floodplain located in an area prone to intense storms, hurricanes and high humidity. What's more, the building's design features complicated geometries intended to take advantage of seasonal breezes and to limit sunlight penetration in summer while maximizing it in winter.

Solution

Protect the new wall assembly with the DuPont™ Tyvek® Fluid Applied System – a complete, integrated weather barrier system designed to perform in any climate and under a wide variety of commercial façades.

Wall systems

More than just products, DuPont offers fully integrated wall systems that leverage our proven technologies, compatible materials and construction expertise, all backed by industry-leading warranties.



DuPont™ Commercial Wall²

The Power of Two brings together trusted DuPont™ Tyvek® materials with DuPont™ Styrofoam™ and DuPont™ Thermax™ insulation products to create high-performance wall assemblies.

- Wide portfolio enables flexibility to choose the right assembly for the job – including wrap over foam, WRB under foam and inverted wall assemblies
- Assemblies are tested above and beyond code requirements for exceptional water holdout, air holdout and thermal performance
- Industry-leading system warranty includes product and labor



DuPont™ Thermax™ Wall System

- Features DuPont™ Thermax™ Brand Insulation with DuPont™ LiquidArmor™ Flashing & Sealant for enhanced warranty protection in Gold, Silver and Bronze levels



DuPont™ Cavitymate™ Ultra Wall System

- Features DuPont™ Styrofoam™ Cavitymate™ Ultra Insulation and Great Stuff Pro™ Gaps & Cracks Foam Sealant

Integrated insulation and barrier solutions

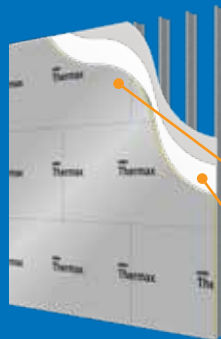
Wall systems

Rigid foam insulation coupled with innovative barrier sealing and flashing technologies helps your building perform more efficiently. These wall systems offer excellent long-term thermal performance, ease of use, moisture resistance and – in some situations – reusability.



DuPont™ Thermax™ Wall System (TWS)

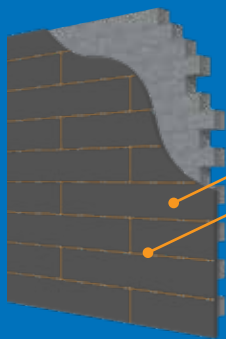
- DuPont™ Thermax™ XARMOR™ (ci) Exterior Insulation
- Choice of DuPont™ LiquidArmor™ QS, CM or LT Flashing & Sealant



DuPont™ Commercial Wall² System

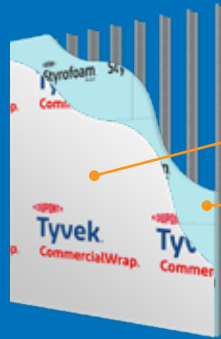
Wall² – Tyvek® WRB Under Exterior CI

- DuPont™ Styrofoam™ XPS or DuPont™ Thermax™ insulation
- DuPont™ Tyvek® Fluid Applied WB+™ or DuPont™ Tyvek® CommercialWrap® or CommercialWrap® D



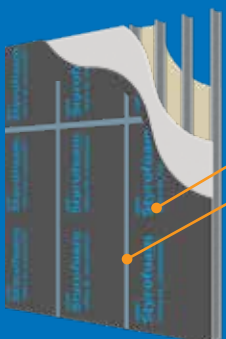
DuPont™ Cavitymate™ Ultra Wall System (on CMU)

- DuPont™ Styrofoam™ Cavitymate™ Ultra
- Great Stuff Pro™ Gaps & Cracks



Wall² – Tyvek® WRB Over Exterior CI

- DuPont™ Tyvek® CommercialWrap® or CommercialWrap® D
- DuPont™ Styrofoam™ or DuPont™ Thermax™ insulation



DuPont™ Ultra SL Wall System (on steel stud)

- DuPont™ Styrofoam™ Ultra SL
- Choice of DuPont™ LiquidArmor™ QS, CM or LT Flashing & Sealant



Wall² – Inverted Wall

- DuPont™ Tyvek® Fluid Applied WB+™ or DuPont™ Tyvek® CommercialWrap® or CommercialWrap® D
- Exterior gypsum
- DuPont™ Styrofoam™ or DuPont™ Thermax™ insulation

Learn more at building.dupont.com/warranties



Wall system overcomes winter construction challenges



Goal

Keep construction of The Headlands International Dark Sky Park's new visitor center and observation tower on schedule as weather conditions threatened progress.

Challenge

Spray foam insulation – ideal for rounded structures – was specified for the tower. However, continuing high winds, cold temperatures, rain and snow made it impossible to apply.

Solution

Apply the DuPont™ Cavitymate™ Ultra Wall System to the entire structure. The system, which combines moisture protection and thermal performance in one integrated package, consists of DuPont™ Styrofoam™ Cavitymate™ Ultra – continuous rigid insulation with an integrated water barrier – and Great Stuff Pro™ Gaps & Cracks – an insulating foam sealant for use on seams and penetrations.

Simply changing the orientation of the insulation panels from horizontal to vertical enabled them to conform to the curved wall of the tower – a creative, high-performance fix that put the project back on schedule.

Wall systems backed by industry-leading warranties

DuPont™ Thermax™ Wall System	Warranty term	Warranty coverage
DuPont™ Thermax™ Wall System GOLD DuPont™ Thermax XARMOR™ (ci) used with choice of DuPont™ LiquidArmor™ QS, CM, or LT Flashing & Sealant	15-year thermal 10-year system with labor	Thermal Water 6-month UV
DuPont™ Thermax™ Wall System SILVER DuPont™ Thermax™ (ci) used with choice of DuPont™ LiquidArmor™ QS, CM, or LT Flashing & Sealant	15-year thermal 10-year system with labor	Thermal Water 6-month UV
DuPont™ Thermax™ Wall System BRONZE DuPont™ Thermax™ Sheathing used with choice of DuPont™ LiquidArmor™ QS, CM, or LT Flashing & Sealant	15-year thermal 5-year system with labor	Thermal Water 3-month UV
DuPont™ Wall² System		
Wall² – Tyvek® WRB Under Exterior CI DuPont™ Styrofoam™ Brand Insulation or DuPont™ Thermax™ Brand Insulation installed over DuPont™ Tyvek® CommercialWrap® or CommercialWrap® D or DuPont™ Tyvek® Fluid Applied WB+™	10-year product 10-year labor	Air Water Thermal 6-month UV
Wall² – Tyvek® WRB Over Exterior CI DuPont™ Tyvek® CommercialWrap® or CommercialWrap® D installed over DuPont™ Styrofoam™ Brand Insulation or DuPont™ Thermax™ Brand Insulation	10-year product 10-year labor	Air Water Thermal 9-month UV
Wall² – Inverted Wall DuPont™ Tyvek® CommercialWrap® or CommercialWrap® D or DuPont™ Tyvek® Fluid Applied WB+™ installed on exterior gypsum over DuPont™ Styrofoam™ Brand Insulation or DuPont™ Thermax™ Brand Insulation	10-year product 10-year labor	Air Water Thermal 9-month UV
DuPont™ Ultra Wall System (UWS)		
DuPont™ Cavitymate™ Ultra Wall System DuPont™ Styrofoam™ Cavitymate™ Ultra and Great Stuff™ Pro Gaps & Cracks insulating foam sealant	50-year thermal	Thermal
DuPont™ Ultra SL Wall System DuPont™ Styrofoam™ Cavitymate™ Ultra SL and Great Stuff™ Pro Gaps & Cracks insulating foam sealant	50-year thermal	Thermal

Integrated protection from the inside out

Interior walls

Eliminate air leakage and increase thermal performance with well-integrated systems of insulation and weatherization solutions from DuPont.

Interior insulation solutions

Continuous building insulation that is easy to cut, handle and install; covers entire wall surfaces; and reduces the potential for condensation within the wall assembly.

DuPont™ Thermax™ White Finish (WF) Insulation

- Easy-to-install continuous insulation
- Features an easy-to-clean white embossed surface
- Combines high R-value with dimensional stability and moisture resistance



DuPont™ Thermax™ Heavy Duty Foam Insulation

- Insulation and interior finish system for walls and ceilings
- High durability in difficult conditions – stands up to the elements with a fiberglass core and thermoset-coated aluminum facing



DuPont™ Thermax™ Light Duty Foam Insulation

- Continuous insulation
- Fiberglass-reinforced foam core
- Long-term thermal resistance
- Facing prevents water and water vapor intrusion



Air-sealing insulating foam sealants

Quick, convenient solutions for effectively blocking air leaks, dirt, moisture, allergens and pests.

Great Stuff Pro™ Gaps & Cracks

- Ideal for gaps and penetrations up to 3"
- Recognized as a fireblock sealant
- Airtight, water-resistant seal



Great Stuff Pro™ Gasket

- Low expansion to seal gaps without bowing or bending frame
- Bonds to vinyl, wood and metal frames
- Airtight, water-resistant seal



DuPont™ Enerfoam™ Professional Foam Sealant

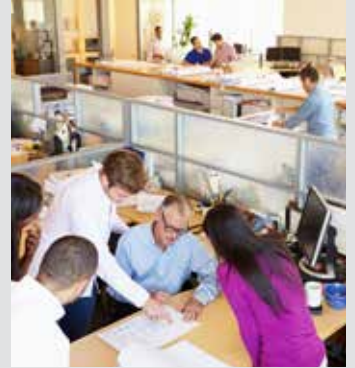
- Flexible foam sealant bonds to most building substrates to seal cracks and voids
- Minimally expanding for effective, airtight seal
- Fireblock rating (U.S.)
- Water-resistant seal



DuPont™ Thermax™, Styrofoam™ and Froth-Pak™ materials are low-emitting materials⁽¹⁾



Smart building design for offices



According to researchers at Harvard University and Syracuse University, people who work in well-ventilated offices with below-average levels of indoor pollutants and carbon dioxide have significantly higher cognitive functioning scores in crucial areas – such as responding to a crisis or developing strategy – than those who work in offices with typical levels.

Ways designers can improve employee productivity and performance through more sustainable design include:

- 1. Ensure building enclosures are airtight.** Employing moisture-resistant continuous insulation along with air sealing minimizes moisture intrusion, improving indoor air quality and reducing the potential for rot and mildew.
- 2. Meet or exceed minimum R-values.** Better R-values correlate with improved occupant comfort.
- 3. Build for productivity and efficiency.** Efficient buildings with improved air quality and other comforts benefit people, the planet and profitability.



DuPont™ Thermax™ products deliver R-6.5/inch thermal resistance



Boards and sheathing

Nonstructural rigid board materials with a fiberglass-infused foam core that helps improve fire performance and dimensional stability.



DuPont™ Thermax™ Metal Building Board

- Ideal for metal structures as well as standing-seam metal roofs
- Interior finish system that provides insulation with long-term R-value
- Listed in 1-, 2-, 3- and 4-hour UL fire-rated wall assemblies.
- 1.25-mil embossed aluminum facers on both sides
- Low perm rating to help prevent water and water vapor intrusion



DuPont™ Thermax™ Sheathing Foam Insulation

- Engineered for both concealed and exposed applications
- Nonstructural rigid board material
- Fiberglass-infused foam core helps improve fire performance and dimensional stability



Insulating and sealing for windows, doors and penetrations

Fenestrations and openings

Enhance the long-term performance of your building's openings. Prevent air leaks and moisture infiltration around the rough openings of windows, doors and other penetrations with insulation and weatherization solutions from DuPont.

DuPont™ FlexWrap™ EZ Adhesive Tape



- Versatile self-adhered flashing for nonflanged objects
- Flexible, easy-to-apply adhesive tape
- Stops small air leaks that diminish a structure's energy efficiency and durability
- Withstands up to 270 days of UV exposure

DuPont™ StraightFlash™ Premium Self-Adhered Flashing Material



- Ideal for helping to protect heads and jambs of windows and doors
- Protects vulnerable areas between the fenestration and the water-resistive barrier often subject to potential water damage
- Superior durability – tear-resistant and withstands up to 270 days of UV exposure
- Excellent adhesion
- Performs through extreme temperatures



DuPont™ LiquidArmor™ Flashing & Sealant



- Spans up to ¼" gap
- Available in three formulations to meet your exact needs:

DuPont™ LiquidArmor™ QS Flashing & Sealant

- Acrylic-based
- Spray- or brush-applied
- Dries to touch in 1-4 hours; rain-resistant in ~5 hours
- Meets AAMA 714

DuPont™ LiquidArmor™ CM Flashing & Sealant

- Acrylic-based
- Spray- or brush-applied
- Dries to touch in 1-4 hours; rain-resistant in ~24 hours

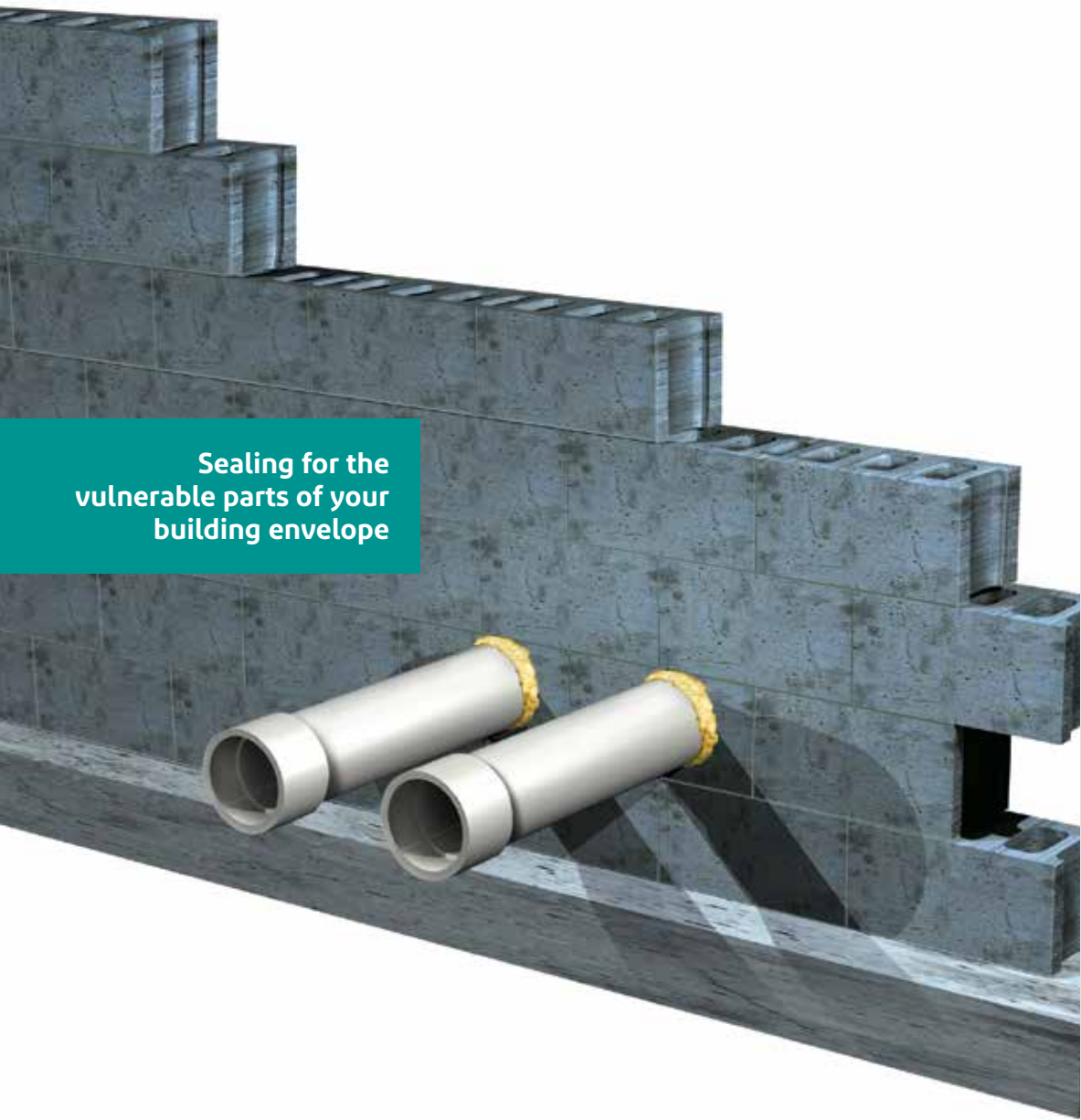
DuPont™ LiquidArmor™ LT Flashing & Sealant

- Silicone-based
- Trowel- or sausage-gun-applied
- Strong abrasion resistance
- Skins over in ~45 minutes
- Meets AAMA 714
- Long-term UV resistance

DuPont™ Tyvek® Fluid Applied Flashing & Joint Compound



- STPE-based
- Trowel- or caulk-gun-applied
- Skins over in 1-2 hours
- Meets AAMA 714



Sealing for the vulnerable parts of your building envelope

Insulating foam sealants

Professional-grade, easy-to install-sealants that reduce unwanted airflow, lower energy costs and improve comfort



Great Stuff Pro™ Window & Door

- Bonds to vinyl, wood and metal frames
- Low expansion to appropriately seal gaps without bowing or bending frame
- Airtight, water-resistant seal
- Tack-free within 3-10 minutes; ready to trim within 60 minutes



Great Stuff Pro™ Gaps & Cracks

- Ideal for gaps and penetrations up to 3"
- Recognized as a fireblock sealant
- Airtight, water-resistant seal



Hilton takes energy efficiency to new heights



At Homewood Suites in Arlington, Virginia, Hilton Worldwide and DuPont teamed up to help Hilton achieve higher levels of energy efficiency in its new hotels.

They chose the DuPont™ Thermax™ Wall System with DuPont™ LiquidArmor™ LT Flashing & Sealant for the job. The DuPont™ Thermax™ Wall System helps streamline design and construction, while DuPont™ LiquidArmor™ LT Flashing & Sealant reduces air leakage to help building owners save money and provide a more comfortable environment to occupants.

Results

- Estimated \$200,000 in cost savings
- 17% increase in R-value
- 18% R-value improvement over code

The success doesn't stop here. The plans are being shared with Hilton franchise members to help them envision better building options that yield a more profitable operating model and better customer experience.

Ensure complete protection at critical interfaces

Transitions

Modern building materials are enabling structures that are more energy-efficient, comfortable and durable. It's now more important than ever to ensure sealing between building elements to eliminate air and moisture penetration to maintain continuous protection.



DuPont™ Froth-Pak™ Foam Insulation – Two-Component Spray Foam

R-value 5.6/inch

Air infiltration accounts for 25-40% of a building's energy loss. Reduce those losses by air-sealing with DuPont™ Froth-Pak™.

The professional insulation kit is available in many convenient sizes from 210 board feet to more than 2,000 board feet and larger, depending on your job needs.

- Intended for filling larger cavities, providing both insulation and air-sealing properties
- Class A rating (flame spread of 25 or less) allows use in a wide range of interior and exterior industrial, commercial, institutional and residential settings
- Meets NFPA 286 for roof-wall juncture (2" x 6" x unlimited length)



DuPont™ LiquidArmor™ Flashing & Sealant

- Spans up to ¼" gap
- Available in three formulations to meet your exact needs:

DuPont™ LiquidArmor™ QS Flashing & Sealant

- Acrylic-based
- Spray- or brush-applied
- Dries to touch in 1-4 hours; rain-resistant in ~5 hours
- Meets AAMA 714

DuPont™ LiquidArmor™ CM Flashing & Sealant

- Acrylic-based
- Spray- or brush-applied
- Dries to touch in 1-4 hours; rain-resistant in ~24 hours

DuPont™ LiquidArmor™ LT Flashing & Sealant

- Silicone-based
- Trowel- or sausage-gun-applied
- Strong abrasion resistance
- Skins over in ~45 minutes
- Meets AAMA 714
- Long-term UV resistance



DuPont™ StraightFlash™ Premium Self-Adhered Flashing Material

- Ideal for helping to protect heads and jambs of windows and doors
- Protects vulnerable areas between the fenestration and the water-resistive barrier often subject to potential water damage
- Superior durability – tear-resistant and withstands up to 270 days of UV exposure
- Excellent adhesion
- Performs through extreme temperatures

DuPont™ Tyvek® Fluid Applied Flashing & Joint Compound

- STPE-based
- Trowel- or caulk-gun-applied
- Skins over in 1-2 hours
- Meets AAMA 714





**Protection from roof
to wall, wall to wall,
and wall to foundation**

Increasing energy efficiency



Creating an airtight and watertight building envelope contributes to energy efficiency in three important ways:

- 1. Making ventilation more effective** – HVAC represents the largest share of energy use in buildings. DuPont Building Envelope systems can reduce air leakage through the wall assembly – especially at critical transitions – to help HVAC systems work more efficiently.
- 2. Maintaining R-value** – At wind speeds as low as 5 mph, cavity batt insulation without an air barrier retains less than 40% of its original R-value. DuPont Building Envelope systems help control unwanted airflow, helping insulation maintain its installed R-value.
- 3. Protecting against moisture** – Wet insulation retains less than 40% of its effective R-value. DuPont Building Envelope systems help protect against bulk water intrusion and allow water vapor to escape to help keep insulation dry.

Protection all the way to the top

Roofing

Your roof is a critical factor in the overall performance of the building envelope. Ensure a longer-lasting, energy-efficient and sustainable roof with moisture-resistant insulation and adhesive solutions from DuPont.

Roofing solutions from DuPont

Whatever your roof type – conventional, inverted, steep-slope, tile or clay – DuPont has insulation, sealing and adhesive solutions engineered to deliver superior performance.

DuPont™ Froth-Pak™ Foam Insulation – Two-Component Spray Foam

R-value 5.6/inch



Available in many different sizes for your convenience on the job site, these professional insulation kits prevent air infiltration and reduce energy losses.

- Intended for filling larger cavities, providing both insulation and air-sealing properties
- Class A rating (flame spread of 25 or less) allows use in a wide range of interior and exterior industrial, commercial, institutional and residential settings



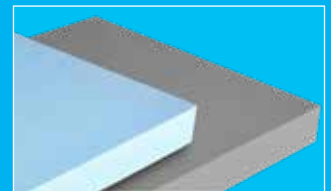
DuPont™ Styrofoam™ Extruded Polystyrene (XPS) Rigid Insulation Products

R-value 5.0/inch



The full range of DuPont™ Styrofoam™ products brings a solution for every building application. For roofing, **DuPont™ Styrofoam™ Roofmate™**, **Plazamate™** and **Highload XPS Foam Insulation** products offer ideal, water-resistant thermal protection for inverted or protected membrane-roof systems in a range of compressive strengths to suit your design needs.

- Strong, yet lightweight
- Easy to fabricate into various sizes and shapes to meet specific design needs
- Water- and rot-resistant – ideal for insulating green and blue roofs
- Reusable





Insulation is key to inverted-roof performance



While traditional roofs place the insulation under the protective membrane, inverted roofs are designed with the waterproofing layer, usually a liquid-applied membrane, beneath the insulation. Insulation boards are loose-laid on top of the membrane and then weighted down with paving slabs, gravel ballast or soil medium in the case of “green” or vegetative roofs.

Inverted roofs offer:

1. Lower total roof-life costs
2. Improved environmental performance
3. Better storm water management
4. Greater occupant satisfaction
5. Habitat preservation
6. Potential storm water management when used in a “blue roof” design assembly

They require insulation that resists water absorption, provides excellent thermal performance, is unaffected by freeze/thaw cycles, withstands surface traffic, and is protected from UV and mechanical damage.

DuPont™ Styrofoam™ XPS Insulation has long been a top choice for insulating green and blue roof assemblies.



DuPont™ Insta Stik™ Quik Set Commercial Roofing Adhesive

- Polyurethane adhesive for attaching insulation boards to roof decks and substrates
- Works in a wide range of temperatures to extend the working season
- Easy-to-use, single-part formulation
- Maintains adhesion during freeze/thaw cycles
- Maximizes wind uplift resistance; secures insulation boards in high-wind conditions in loose-laid and ballasted applications
- Low thermal conductivity



DuPont™ Tile Bond™ Roof Tile Adhesive

- Minimally expanding foam for clay and concrete roof tiles
- Quicker and easier to install compared to traditional attachment methods such as screws, mortar, wire ties and clips
- Provides greater attachment strength while minimizing nail penetrations and reducing roof weight loads



DuPont™ Tyvek® fluid-applied products

Properties*	Percent solids	Skin-over time @ 50% R.H. and 70°F, hr	Air penetration resistance, cfm/ft ² @ 75 Pa, (1.57 psf)	Air penetration resistance, sec/100 cc	Wall assembly air penetration resistance, cfm/ft ² @ 75 Pa	Wall assembly air penetration resistance, cfm/ft ² @ 75 Pa	Wall assembly air & water leakage	Water penetration resistance, cm	Wall assembly water penetration resistance, tested to 15 psf	Water vapor transmission, method B, perms	Low-temperature crack-bridging, no cracking at 25 mil thickness
Test method	ASTM D2369	ASTM C679	ASTM E2178	Gurley Hill (Tappi T-460)	ASTM E2357	ASTM E283	ASTM E1677	AATCC 127	ASTM E331	ASTM E96-00	ASTM C1305
DuPont™ Tyvek® Fluid Applied WB+™	99	1 to 2	0.0002	>10,000	<0.0002	<0.0002	Type I	>1,000	No leakage	22 @ 25 mils	Pass
DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+	99	—	0.0002	>10,000	<0.0002	<0.0002	Type	>1,000	No leakage	25 @ 25 mils	Pass

DuPont™ Tyvek® weather-resistive barrier products

Properties*	Air penetration resistance, cfm/ft ² @ 1.57 psf	Air penetration resistance, sec/100 cc	Air penetration resistance, cfm/ft ² @ 1.57 psf	Air penetration resistance, cfm/ft ² @ 1.57 psf	Wall assembly air penetration resistance, cfm/ft ² @ 1.57 psf	Water vapor transmission, method B, g/m ² -24 hr	Water vapor transmission, method B, perms	Water penetration resistance, cm	Wall assembly water penetration resistance, tested to 15 psf	Basis weight, oz/yd ²
Test method	ASTM E2357	Gurley Hill (TAPPI T-460)	ASTM E1677	ASTM E2178	ASTM E283	ASTM E96-00	ASTM E96-00	AATCC 127	ASTM E331	TAPPI T-410
DuPont™ Tyvek® CommercialWrap®	<0.01	>1,500	Type 1	0.001	<0.01	200	28	280	No leakage	2.7
DuPont™ Tyvek® CommercialWrap® D	<0.04	>750	Type 1	0.001	<0.04	212	30	235	No leakage	2.4

DuPont™ Styrofoam™ extruded polystyrene (XPS) foam insulation products

Properties*	Thermal resistance ⁽¹⁾⁽²⁾ aged R-value per inch @ 75°F mean temp	Compressive strength, minimum, lb/in ² ⁽³⁾	Flexural strength, minimum, lb/in ²	Water absorption, maximum, % by volume	Water vapor permeance ⁽⁴⁾ , maximum, perm	Dimensional stability, maximum, % linear change	Coefficient of linear thermal expansion, x10 ⁻⁵ in/in·°F	Complies with ASTM C578, Type ⁽⁵⁾	Maximum use temperature, °F
ASTM method	C518	D1621	C203	C272	E96	D2126			
DuPont™ Styrofoam™ Cavitymate™	5.0	15	40	0.1	1.5	2.0	3.5	X	165
DuPont™ Styrofoam™ Cavitymate™ SC	5.0	15	40	0.1	1.5	2.0	3.5	X	165
DuPont™ Styrofoam™ Cavitymate™ Plus	5.0	25	50	0.1	1.5	2.0	3.5	IV	165
DuPont™ Styrofoam™ Cavitymate™ Ultra	5.6	25	50	0.1	1.5	2.0	3.5	IV	165
DuPont™ Styrofoam™ Cavitymate™ Ultra SL	5.6	25	50	0.1	1.5	2.0	3.5	IV	165
DuPont™ Styrofoam™ Deckmate™ Plus	5.0	25	50	0.1	1.5	2.0	3.5	IV	165
DuPont™ Styrofoam™ Deckmate™ Plus FA (Flat and Tapered)	5.0	25	50	0.1	1.5	2.0	3.5	IV	165
DuPont™ Styrofoam™ Perimate™	1.063": R-5.0 2.125": R-10.0	30	50	0.1	1.5	2.0	3.5	IV	165
DuPont™ Styrofoam™ Plazamate™	5.0	60	75	0.1	0.8	2.0	3.5	VII	165
DuPont™ Styrofoam™ Roofmate™	5.0	40	60	0.1	1.0	2.0	3.5	VI	165
DuPont™ Styrofoam™ Ribbed Roofmate™	5.0	40 ⁽⁷⁾	60	0.1	1.0	2.0	3.5	VI	165
DuPont™ Styrofoam™ Highload 40	5.0	40	60	0.1	1.0	2.0	3.5	VI	165
DuPont™ Styrofoam™ Highload 60	5.0	60	75	0.1	0.8	2.0	3.5	VII	165
DuPont™ Styrofoam™ Highload 100	5.0	100	100	0.1	0.8	2.0	3.5	V	165
DuPont™ Styrofoam™ Scoreboard ⁽⁸⁾	5.0	25	50	0.1	1.5	2.0	3.5	IV	165
DuPont™ Styrofoam™ Square Edge ⁽⁸⁾	5.0	25	50	0.1	1.5	2.0	3.5	IV	165
DuPont™ Styrofoam™ Tongue and Groove	5.0	25	50	0.1	1.5	2.0	3.5	IV	165
DuPont™ Styrofoam™ UtilityFit™ XPS 15 PSI Insulation	5.0	15	40	0.1	1.5	2.0	3.5	X	165

*These are typical physical properties. Not to be construed as sales specifications.

Adhesion strength – concrete, psi	Adhesion strength – exterior gypsum (delaminates fiber glass top sheet), psi	Peel strength, lbf/in (aluminum)	Adhesion-in-peel, lbf/in (mortar)	Tensile, psi	Elongation at break, %	Recovery (held at 300% elongation), %	Hardness, Shore A	Ultraviolet (UV) light exposure, months	Nail sealability, no leakage	Flame propagation, multiple assemblies	Surface burning characteristics, class, flame spread index, smoke developed index	VOC, % by wt (g/L)	Acceptance criteria for water-resistive barriers over exterior sheathing
ASTM D7234	ASTM D4541	ASTM D903	ASTM C794	ASTM D412	ASTM D412	ASTM D412	ASTM D2240	Accelerated Weathering (ASTM G155)	ASTM D1970	NFPA 285	ASTM E84	ASTM C1250	AC 212
>33	>25	13 cohesive failure	Pass	140	320	99	34	9	Pass	Pass	Class A 15 flame 10 smoke	<2 (25-30)	Pass
NA	NA	19 cohesive failure	Pass	245	400	>99	69	9	Pass	Pass	NA	<2 (25-30)	—

Breaking strength, lb/in	Tear resistance, lb	Surface burning characteristics, flame spread index class	Surface burning characteristics, smoke developed index class	Flame propagation/multiple assemblies	Ultraviolet (UV) light exposure, days	Ultraviolet (UV) light exposure, months	Drainage efficiency, %
ASTM D882	ASTM D1117	ASTM E84	ASTM E84	NFPA 285	—	—	ASTM E2273
38/35	12/10	15 Class A	25 Class A	Pass	270	9	—
33/41	6/9	15 Class A	25 Class A	Pass	270	9	>98

Flame spread ⁽⁶⁾	Smoke developed	Width, in	Length, in	Typical thickness range, in
E84	E84			
15	165	16	96	1.0, 1.5, 2.0, 3.0
15	165	48	96	1.0, 1.5, 2.0, 2.5
15	165	16	96	1.0, 1.5, 2.0
10	155	15.75	96	1.75, 2.125, 2.5, 3.0
10	155	48	96	1.75, 2.125, 2.5, 3.0
15	165	24	96	1.0, 1.5, 2.0, 2.5, 3.0, 4.0
15	165	48	96	1.0, 1.5, 2.0, 2.5, 3.0, 4.0
15	165	24	96	1.5, 2.0, 2.5, 3.0, 4.0
15	165	24	96	1/8", 1/4", 1/2" slopes
15	165	24	96	1.063, 2.125
15	165	24	96	2.0, 3.0
15	165	24	96	1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0
15	165	24	96	2.0
15	165	24	96	2.0, 3.0
15	165	24	96	2.0
15	165	48	96	0.75, 1.0, 1.5, 2.0, 2.5, 3.0
15	165	24	96	0.75, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0
15	165	48	96	0.75, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0
15	165	24	96	0.75, 1.0, 1.5, 2.0
15	165	48	96	0.75, 1.0, 1.5, 2.0
15	165	16	96	1.0, 1.5, 2.0, 3.0

Accessories for DuPont™ Tyvek® CommercialWrap® and CommercialWrap® D

- Rodenhouse Thermal-Grip® FastCap™ (Thermal-Grip ci washer for Wall?)
- DuPont™ Tyvek® Commercial Wrap Cap Screws
- DuPont™ StraightFlash™
- DuPont™ FlexWrap™
- DuPont™ Flashing Tape
- DuPont™ Tyvek® Tape

Accessories for DuPont™ Tyvek® Fluid Applied WB+™

- **DuPont™ Tyvek® Fluid Applied Flashing and Joint Compound+ –** Full-bodied brush- or trowel-applied vapor-permeable elastomeric flashing material used to coat rough openings for windows and doors, fill seams, cracks and holes in the substrate, to seal around penetrations, and to treat joints and transitions between building components.
- **Sealant for DuPont™ Tyvek® Fluid Applied System –** Vapor-impermeable sealant designed specifically for use with DuPont™ Tyvek® Fluid Applied WB+™ with excellent adhesion and elongation. Used to seal around windows, doors and penetrations.
- **DuPont™ StraightFlash™ –** Butyl-based self-adhered membrane used for flashing windows and doors, to treat transitions, and for terminations.
- **DuPont™ FlexWrap™ and DuPont™ FlexWrap™ EZ –** Extendable butyl-based self-adhered flashing materials that efficiently conform around corners and irregular shapes.

⁽¹⁾Values are consistent with the criteria of ASTM C578 and the requirements of the FTC R-value rule (16 CFR Part 460). A 15-year limited thermal warranty is available.
⁽²⁾R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft²·h·°F/Btu.
⁽³⁾Vertical compressive strength is measured at 10% deformation (5% for DuPont™ Styrofoam™ Brand Plazamate™ Insulation and for DuPont™ Styrofoam™ Brand Highload 40, 60 and 100 Insulation) or at yield, whichever occurs first. Because DuPont™ Styrofoam™ Brand Extruded Polystyrene Foam Insulation is a viscoelastic material, adequate design safety factors should be used to prevent long-term creep and fatigue deformation. For static loads, 3:1 is suggested. For dynamic loads, 5:1 is suggested.
⁽⁴⁾Water vapor permeance varies with product type and thickness. Values are based on the desiccant method, and they apply to insulation "I" in thickness. Thicker products have lower permeance.
⁽⁵⁾Former Federal Specification HH-1-524C was canceled in 1985 and replaced by ASTM C578.
⁽⁶⁾This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
⁽⁷⁾Recommended load (psf) including 5:1 design factor.
⁽⁸⁾If using product for Z-furring applications, contact your local DuPont sales representative for exact product sizes.

Note: Not all products are available in all parts of the country. Other product sizes are available on a made-to-order basis. Contact your DuPont representative with questions.

DuPont™ Thermax™ and DuPont™ Tuff-R™ polyisocyanurate insulation

Properties*	Thermal resistance ^(1,2)	Compressive strength, minimum, core foam, lb/in ²	Flexural strength, typical for 1" core foam, lb/in ²	Water absorption, maximum, core foam, 2-hr results, % increase by volume	Water vapor permeance ⁽³⁾ , perm	Dimensional stability ⁽⁴⁾ , maximum, % linear change	Complies with ASTM	Maximum use temperature, °F	Flame spread ⁽⁶⁾⁽⁷⁾ , maximum	Smoke developed ⁽⁷⁾ , maximum	Width, in	Length, in	Typical thickness range, core foam, in
ASTM method	C518	D1621	C203	C209	E96	D2126	C1289		E84	E84			
DuPont™ Thermax™ (ci) Exterior Insulation	6.5	25	55	0.1	<0.03	4.0	Type I Class 2	250	25	190	48 48	96 144	0.625, 1.0, 1.55, 2.0, 2.5, 3.0
DuPont™ Thermax™ XARMOR™ (ci)	6.5	25	55	0.1	≤0.04	0.2	Type I Class 2	250	25	190	48 48	96 144	0.625, 1.0, 1.55, 2.0
DuPont™ Thermax™ Sheathing	6.5	25	40	0.1	<0.03	4.0	Type I Class 2	250	25	190	48	96 108 120 144	0.5, 0.75, 1.0, 1.5, 1.55, 2.0, 2.5, 3.0, 3.5, 4.0
DuPont™ Thermax™ Heavy Duty	6.5	25	55	0.1	<0.03	4.0	Type I Class 2	250	25	190	48 48	96 120	1.0, 1.25, 1.55, 1.75, 2.0, 2.5, 3.0
DuPont™ Thermax™ Light Duty	6.5	25	55	0.1	<0.03	4.0	Type I Class 2	250	25	190	48 48	96 120	0.5, 0.75, 1.0, 1.25, 1.55, 1.75, 2.0, 2.5, 3.0
DuPont™ Thermax™ Metal Building Board	6.5	25	55	0.1	<0.03	4.0	Type I Class 2	250	25	190	48 48	96 120	0.5, 0.75, 1.0, 1.75, 2.0, 2.5, 3.0, 3.5, 4.0
DuPont™ Thermax™ White Finish	6.5	25	55	0.1	<0.03	4.0	Type I Class 2	250	25	190	48	108	0.5, 0.75, 1.0, 1.25, 1.5, 1.55, 1.75, 2.0
DuPont™ Tuff-R™ Commercial Insulation	6.5	25	40	0.1	<0.03	4.0	Type I Class 1 or 2 ⁽⁵⁾	190	55	200	48	96 108	1.0, 1.25, 1.50, 1.875, 2.0

⁽¹⁾Aged R-value per 1" @ 75°F mean temperature. R-values are expressed in ft²·h·°F/Btu.

⁽²⁾R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values determined by ASTM C518 using the aging process in ASTM C1289 (90 days @ 140°F).

⁽³⁾Water vapor permeance varies with product type and thickness. Values are based on the desiccant method, and they apply to insulation 1" in thickness. Thicker products have lower permeance.

⁽⁴⁾Dimensional stability is for the thickness.

⁽⁵⁾Varies with thickness.

⁽⁶⁾These numerical flame spread ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.

⁽⁷⁾Surface Burning Characteristics, ASTM E84 for both foam core and finished product.

Note: Not all products are available in all parts of the country. Other product sizes are available on a made-to-order basis. Custom lengths of DuPont™ Thermax™ Insulation products are available for orders of 7,500 board feet or more. Contact your DuPont representative with questions.

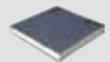
Choose the best DuPont™ Thermax™ product for your project

DuPont™ Thermax™ insulations have a wide variety of facers to meet the needs of your diverse range of projects. Choose products for interior/exterior, exposed/covered, robust/economical applications.

DuPont™ Thermax™ XARMOR™ (ci) Exterior Insulation

4 mil gray facer

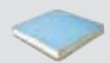
- Exterior continuous insulation
- Used in **DuPont™ Thermax™ Wall System**



DuPont™ Thermax™ (ci) Exterior Insulation

1.25 mil blue facer

- Exterior continuous insulation
- Used in **DuPont™ Thermax™ Wall System**



DuPont™ Thermax™ Sheathing 1 mil smooth facer

- Multipurpose



DuPont™ Thermax™ Heavy Duty 4 mil white facer

- Interior insulation and finish



DuPont™ LiquidArmor™ flashing materials

Properties*	Application	Chemistry	Application temperature, °F	Application thickness, mils	Tensile (ASTM D412), psi	Elongation (ASTM D412), %	Rain resistance ⁽¹⁾ , hr	Water vapor transmission (ASTM E96 method B), perms	AAMA 714
DuPont™ LiquidArmor™ CM Flashing	Spray, brush	Water-based acrylic latex	35 - 120	50 ±5	340	270	24	4	—
DuPont™ LiquidArmor™ LT Flashing	Trowel	Silicone	-20 - 120	30 ±5	210	270	Immediate	3	Y
DuPont™ LiquidArmor™ QS Flashing	Spray, brush	Water-based acrylic latex	40 - 120	50 ±5	190	283	5	4	Y

⁽¹⁾Evaluated in laboratory testing at 75°F and 50% humidity. Exact performance will vary depending on actual job site conditions.

*These are typical physical properties. Not to be construed as sales specifications.

DuPont™ Froth-Pak™ polyurethane foam insulation

Properties*	Flexural strength, parallel, lb/in ²	Thermal resistance, R-value per inch, ft ² ·h ² ·°F/Btu	Compressive strength, parallel, lb/in ²	Shear strength, parallel, lb/in ²	Apparent core density, lb/ft ³	Water absorption, 5% by volume	Water vapor permeance @ 1" thick, perm	Cure time, min	Application temperature, °F	Sizes
ASTM method	C203	C518	D1621	C273	D1622	D2842	E96			
DuPont™ Froth-Pak™ Foam Insulation (CLASS A)	22.7	5.6 ⁽¹⁾	21.1	16.7	2.0	2.17	3.9	Tack-free ⁽²⁾ <1 min	60 - 90	Selection of kit sizes and refill systems available

⁽¹⁾Aged R-value: 90 days @ 140°F. Initial R-value: 6.6.

⁽²⁾Actual cure time will depend on temperature, foam thickness, specific nozzle used, etc.

Polyurethane foam sealants and adhesives

Properties*	Cure time	Size	Yield ⁽¹⁾
DuPont™ Enerfoam™ Professional Foam Sealant	Tack-free <20 min; trim in 30 min	24 oz can, reusable straw 24 oz can, gun 30 oz can, gun	775 ft 970 ft 1,450 ft
Great Stuff Pro™ Gaps & Cracks ⁽²⁾	Tack-free <6 min; trim in 30 min; full cure in 1 hr	24 oz can, reusable straw 24 oz can, gun 30 oz can, reusable straw 30 oz can, gun	775 ft ⁽³⁾ 970 ft ⁽³⁾ 995 ft ⁽³⁾ 1,450 ft ⁽³⁾
Great Stuff Pro™ Window & Door ⁽²⁾	Tack-free <9 min; trim in 1 hr; full cure in 12 hr	20 oz can, reusable straw 20 oz can, gun 24.5 oz can, reusable straw 24.5 oz can, gun	6-9 windows ⁽⁴⁾ 8-11 windows ⁽⁴⁾ 8-11 windows ⁽⁴⁾ 11-14 windows ⁽⁴⁾
DuPont™ Insta Stik™ Quik Set ⁽⁵⁾	Tack-free 3-7 min, depending on humidity	30 lb canister only (23 lb net chemical weight)	Refer to E-Z Estimating Guide
DuPont™ Tile Bond™ ⁽⁶⁾	Tack-free 5-15 min	23 lb complete (canister with gun/hose assembly) 23 lb canister only 28 oz can, reusable straw	Up to 375 field tiles for 23 lb tank

⁽¹⁾For estimated yields at other product sizes, bead sizes and conditions, contact your DuPont representative.

⁽²⁾Actual cure time will depend on temperature, relative humidity and size of foam bead.

⁽³⁾Estimated yield under ideal conditions based on gun foam, 3/8" bead.

⁽⁴⁾Estimated yield (gun foam) under ideal conditions for 36" x 60" window, 3/8" wide gap, 1" deep, 3/8" bead.

⁽⁵⁾Time-saving multibead applicator available.

⁽⁶⁾Contact DuPont for approved underlaments and tile uses.

DuPont™ self-adhered flashing products

Properties*	Face sheet	Adhesive ⁽¹⁾	Thickness	Release liner	Dimensions (width x length)	Features	Applications
DuPont™ FlexWrap™	Microcreped polyethylene laminate (white)	Butyl rubber (black)	64 mil (1,620 µm)	1-piece, heavy-duty siliconized paper for 6" width; 2-piece, heavy-duty siliconized paper for 9" width	6" or 9" x 75'; 9" x 15'	• UV resistance: Cover in 270 days	Round-top or custom-shaped windows, 3D sill protection, wall interruptions (e.g., dryer vents, hose bibs); suitable for use on substrates where fasteners cannot be applied
DuPont™ FlexWrap™ EZ	Microcreped polyethylene laminate (white)	Butyl rubber (black)	64 mil (1,620 µm)	2-piece, heavy-duty siliconized, scored release paper	2¾" x 15'	• AAMA 711-13, Class A (no primer); Level 3 Thermal Exposure	Wall penetrations (e.g., round pipes, electrical boxes, wires, dryer vents, hose bibs, etc.)
DuPont™ StraightFlash™	Spunbonded polyethylene laminate (white)	Butyl rubber (black)	30 mil (760 µm)	2-piece, heavy-duty siliconized, scored release paper	4" x 150'; 9" x 125'	• Low-temperature application capability (25°F)	Jamb and heads of rectangular windows
DuPont™ StraightFlash™ VF	Spunbonded polyethylene laminate (white)	Transposed dual-sided adhesive for continuous integration; butyl rubber (black)	30 mil (760 µm)	2-piece, heavy-duty siliconized, scored release paper	6" x 125'; 6" x 25'		Brick mold, nonintegral flanged and nonflanged rectangular windows and doors

⁽¹⁾Adhesive system is based on 100% butyl elastomer with no asphalt/modified bitumen components.

*These are typical physical properties. Not to be construed as sales specifications.

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