

DuPont™ Tuff-R™ Polyisocyanurate Insulation

High-Performance Polyiso Foam with Dual Reflective Foil Facers

OVERVIEW

Description

DuPont™ Tuff-R™ Polyisocyanurate Insulation features high performance, high R-value, closed-cell polyisocyanurate foam core boards sandwiched between a choice of durable exterior foil facers. The polyisocyanurate insulation is created by an exclusive free-rise manufacturing process, which produces a uniform, closed-cell foam for better foam quality than conventional restrained rise process.

Tuff-R™ Insulation helps reduce air infiltration through the wall by covering cracks between the framing members and sealing tightly against the studs. One facer is a continuous sheet of aluminum foil; the other is a durable tri-laminate facer consisting of aluminum foil, kraft and metalized polyester film.



Features and Benefits

- **Ease of Installation:** Lightweight, easy to handle and install with a utility knife or any sharp blade
- **Adaptable and Versatile:** Come with a choice of durable facers depending on design requirements that can be nailed, stapled or glued. Compatible with most exterior siding treatments; ideal for brick, stone, aluminum, vinyl, wood, composite, fiber cement and stucco.
- **High Performance Durability:** Tri-Plex facers improve shipping, storage and job-site durability; less damage and job-site waste. High R-value provides enhanced thermal efficiency. Facers help reduce air penetration and water vapor intrusion allowing products to be detailed as a weather-resistive barrier.
- **Moisture Resistant and UV Stability:** Helps reduce the potential for condensation within the wall assembly

Sustainable Solutions

- **Ozone and Global Warming:** Zero ozone-depleting potential (ODP) and negligible global warming potential.
- Tuff-R™ Insulation is a continuous polyisocyanurate (polyiso) insulation engineered to fulfill key sustainability criteria;
- **Continuous Insulation (CI):** Aids in meeting IECC and ASHRAE 90.1 energy standards.
- **Energy Efficiency:** Glass fiber-reinforced foam core with high R-value. Reduces the carbon footprint by minimizing energy consumption for comfort.
- **Red List Approved:** 99% of ingredients in the final product, present at or above 100 ppm, are free from Red List chemicals and qualify for LEED v4 and v4.1 credits.
- **Sustainable Manufacturing:** Made from 100% renewable electricity. (DuPont has offset electricity usage with Renewable Energy Credits since 2016.)

Applications

- Over roof decks and in cathedral ceilings
- New frame wall construction behind masonry, siding, exterior stucco or other compatible finishes
- Exterior retrofit of existing walls under new exterior sidings
- Install Tuff-R™ Insulation products in residential construction where they will be covered with a minimum of 1/2" gypsum board, or equivalent, thermal barrier. Applications include:
- Interior retrofit of existing walls under a new interior finish of 1/2" (minimum) gypsum board

Warranty

- In the US, a 15-year limited thermal warranty is available. For additional warranty information, please visit building.dupont.com or contact your DuPont representative.

Standard Sizes

Standard Sizes, R-Values and Edge Treatments for Tuff-R™ Polyisocyanurate Insulation

Thickness	Width	Length	R-Value	Edge Treatment
1/2 in.	4 ft.	8 ft.	3.5	Square Edge
3/4 in.	4 ft.	8 ft.	5.1	Square Edge
1.0 in.	4 ft.	8 ft.	6.8	Square Edge
1 1/2 in.	4 ft.	8 ft.	10.2	Square Edge
2.0 in.	4 ft.	8 ft.	13.5	Square Edge

Note: Please be advised that additional sizes may be available. Availability of all sizes varies by region and is subject to change. For further information, please contact your local DuPont Sales Representative or call us at 1-866-338-7668.

TESTING AND CODE COMPLIANCE

Tuff-R™ Insulation exhibits the properties and characteristics indicated in the table below when tested as represented. Review all instructions and (Material) Safety Data Sheet ((M)SDS) before use. Please contact DuPont at 1-833-338-7668 when additional guidance is required for writing specifications that include this product.

TEST METHOD	TEST TITLE	PROPERTY	RESULTS
FIRE			
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials	Surface Burning Characteristics ¹	Flame Spread ≤ 75 Smoke Developed ≤ 450 Core and Finished Product
THERMAL			
ASTM C518	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	Thermal Resistance 1 inch @ 75°F mean temp ²	6.8 ft ² · h · °F / Btu, R-value, min.
ASTM D2126	Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging	Dimensional Stability	0.8% linear (length & width)
STRENGTH			
ASTM D1621	Standard Test Method for Compressive Properties of Rigid Cellular Plastics	Compressive Strength ³	20 psi
ASTM C203	Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation	Flexural Strength	50 psi
ASTM D1623	Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics	Tensile Strength	500 psf, min.

¹Calculated flammability values for this or any other material are not intended to represent hazards that may be present under actual fire conditions.

²R-value of 1.0-inch of foam measured @ 75°F mean temperature, determined in accordance with ASTM C518 after aging for 90 days @ 140°F.

³Vertical compressive strength is measured at 10 percent deformation or at yield, whichever occurs first.

CODE COMPLIANCE

Tuff-R™ Insulation complies with the following codes:

CODE	DESCRIPTION
US Product Listings & Verifications	2021, 2018, 2015, 2012, and 2009 International Residential Code (IRC) 2021, 2018, 2015, 2012, and 2009 International Building Code (IBC) 2021, 2018, 2015, 2012, 2009 International Energy Conservation Code (IECC) Intertek ASTM E84 - Spec ID 55745
Regional Code Listings & Reports	2019 California Green Standards Code
US Code Reports	ICC-ES ESR-3089

HANDLING

Warning

- **WARNING: For Professional Use Only** - Read and follow the entire Safety, Handling, and Storage section carefully before use. The information below is designed to protect the user and allow for safe use and handling of DuPont products.

Due to the critical technical design aspects of many of its applications, DuPont recommends that qualified designers or consultants design your system. Follow all applicable federal, provincials, territories, local and employer regulations.

Precautionary Statements

- **CAUTION:** Thermax™ Brand Insulation is combustible. This product is combustible. Protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information call the DuPont Contact Center at 866-583-2583 or contact your local building inspector. For emergencies contact Chemtrec 800-424-9300, CCN (Contract Number) 7442.
- Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product.
- If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate.

Supplemental Information

- The product meets the definition of an article and is exempt from US TSCA and Canadian DSL inventory requirements.
Compliant with Title 42 Chapter 85 Clean Air Act: Subchapter VII American Innovation and Manufacturing Act of 2020, and Section 612 US EPA Significant New Alternative Policy. Global Warming Potential <150. This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Handling & Use

- Use gloves to protect from mechanical injury.
- Before installation, substrate must be clean, dry, smooth and free from oil, grease, rust, frost and snow. Since dust would impair the performance of adhesives and finishes, dusty surfaces should be brushed off before products are applied.

Product Limitations

- Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including DuPont can give assurance that mold will not develop in any specific system.

Cleanup & Disposal

- Dispose of any residual Thermax™ Brand product, coated debris, or solvent in accordance with applicable federal, state, and local government regulations.

Life & Storage

- During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources.
Store above standing water



For more information, visit us at
building.dupont.com
or call us at 1-833-338-7668

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