



1 PRODUCT NAME THERMAX Heavy Duty Plus Insulation

2 Manufacturer

The Dow Chemical Company
Building Materials
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3 Product Description

THERMAX* Heavy Duty Plus insulation consists of a glass-fiber-reinforced polyisocyanurate foam core faced with nominal 16.5 mil embossed white acrylic-coated aluminum sheet laminated on one side and 1 mil aluminum on the other. It can be installed exposed to the interior without a thermal barrier.

THERMAX Heavy Duty Plus offers high, long-term R-value**. The facers help prevent water and water vapor intrusion into the insulation foam, and allow the foam to stabilize at a higher R-value. Used in conjunction with the appropriate joint

closure system for the application, THERMAX Heavy Duty Plus with its low perm rating helps to prevent moisture condensation within and behind the insulation.

BASIC USE

THERMAX Heavy Duty Plus is designed as an insulation and interior finish system for walls in metal, wood post frame, and concrete or masonry buildings, as governed by building codes. It is not recommended for use in ceilings. The rugged 16.5 mil white embossed aluminum surface of THERMAX Heavy Duty Plus makes it an ideal insulation/finish choice for use in high-impact areas, and it can be pressure-washed up to 2,000 psi with any spray tip (at 1" minimum distance).

SIZES

Width and length:
4' x 8', 4' x 10'
Edge treatments:
Square edge, shiplap
Product thicknesses and

R-values are shown in Table 1. Not all products are available in all parts of the country. Additional product sizes are available by custom order. Consult a Dow representative about other sizes and lead-time requirements.

4 Technical Data

APPLICABLE STANDARDS

THERMAX Heavy Duty Plus meets ASTM C1289-02 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board, Type I, Class 2 (previously known as Federal Specification HH-I-1972), which includes:

- ASTM C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- ASTM C209 – Standard Test Methods for Cellulosic Fiber Insulating Board
- ASTM C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- ASTM D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- ASTM E96 – Standard Test Method for Water Vapor Transmission of Materials
- ASTM D1623 – Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics

TABLE 1

THERMAX Heavy Duty Plus Insulation R-Values	
Nominal Foam Thickness, in.	Stabilized R-Value ^(1, 2)
0.5	3.3
0.75	5.0
1.0	6.5
1.25	8.0
1.55	10.0
1.75	11.4
2.0	13.0
2.5	15.8
3.0	19.0

(1) Stabilized R-values @ 75°F mean temperature determined in accordance with ASTM C518.
(2) R-values expressed in ft²•h•°F/Btu.

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** R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-value determined by ASTM C518.

THERMAX Heavy Duty Plus Insulation

TABLE 2

Physical Properties of THERMAX Heavy Duty Plus Insulation	
Property and Test Method	Value
Compressive Strength ⁽¹⁾ , ASTM D1621, psi, min.	25.0
Flexural Strength, ASTM C203, psi, min.	40.0
Water Absorption, ASTM C209, % by volume, max.	0.03
Water Vapor Permeance, ASTM E96, perms, max.	<0.03
Maximum Use Temperature, °F	250
Light Reflectance, Visual Light Spectrophotometer, %	65

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

PHYSICAL/CHEMICAL PROPERTIES

THERMAX Heavy Duty Plus exhibits the properties and characteristics indicated in Table 2 when tested as represented.

For chemical resistance properties of THERMAX Heavy Duty Plus, see Table 3.

ENVIRONMENTAL DATA

THERMAX Heavy Duty Plus is manufactured with hydrocarbon blowing agents, which have no ozone depletion potential.

FIRE PROTECTION

THERMAX products should be used only in strict accordance with product application instructions. THERMAX products, when used in a building containing combustible materials, may contribute to the spread of fire. For more information, consult MSDS and/or call Dow at 1-866-583-BLUE (2583). In an emergency, call 1-989-636-4400.

CODE COMPLIANCES

THERMAX Heavy Duty Plus complies with the following codes:

- International Residential Code 2003 (IRC) Section 314
- International Building Code (IBC) Section 2603
- National Evaluation Services (NES) NER-681
 - BOCA – Section 2603.0 and Research Report #98-25 (replaced)
 - ICBO – Section 2602 and Evaluation Report #3223 (replaced)
 - SBCCI – Section 2603 and Evaluation Report 9574C (replaced)
- FM 4880 – Wall-Ceiling Construction Metal-Faced – Class 1 Fire Rated to Max. 30' High, 4.25" Thick, 4' Wide, When Installed as Described in the Current Edition of FMRC Approval Guide
- THERMAX products are covered under Underwriters Laboratories Inc. (UL) files R5622, R8181 and R2637
- UL 1256 – Fire Test of Roof Deck Constructions, Roof Deck Construction No. 120 and No. 123
- UL 723 (ASTM E84) Surface Burning Characteristics of Building Materials
- The following designs are 1, 2, 3 or 4 hour wall rated assemblies as listed in the UL Fire Resistance Directory: U026, U324, U325, U326, U330, U354, U355, U460, U902, U904, U905, U906, U907

TABLE 3

Chemical Resistance of THERMAX Heavy Duty Plus Insulation	
Acid, inorganic	Not recommended
Acid, organic	Excellent
Alcohol	Excellent
Asphalt, water-based	Good
Bases (caustics)	Poor
Brines and other salts	Excellent
Cements and mortar	Poor
Gases, carbon dioxide (CO ₂)	Excellent
Gasoline	Excellent
Hydrocarbons	Excellent
Insecticides	Excellent
Kerosene	Excellent
Mineral oil USP	Excellent
Naphtha	Excellent
Paints, alcohol-based	Excellent
Paints, water-based	Excellent
Polyglycols, including propylene glycol	Excellent
Water ⁽¹⁾	Excellent

(1) Water may cause discoloration of aluminum facers. This does not impact the R-value of dry, core insulation. NOTE: This table should be used as a guide only. For design purposes, specific test data on the intended application may be needed.

- Fire Performance Evaluation of an Exterior Masonry Wall System Incorporating THERMAX Insulation Tested in Accordance With NFPA 285, 1998 Edition (UBC 26.9, intermediate scale – multistory testing)
- FMVSS No. 302 – Flammability of Interior Materials – Passenger Cars, Multipurpose Passenger Vehicles, Trucks and Buses (Docket No. 3-3; Notice 4)
- Miami-Dade NOA 02-0703.02 Interior Insulation on CMU Block
- Miami-Dade NOA 02-0703.03 Insulated Wall
- Miami-Dade NOA 02-0703.05 Insulated Roof Assembly

Contact your Dow sales representative or local authorities for state and local building code requirements and related acceptances.

5 Installation

Boards of THERMAX Heavy Duty Plus are lightweight and can be sawed for a custom fit. They install quickly to walls – inside and outside of purlins, trusses or bar joints. Butt joints must be installed over structural members. The surface of the insulation at all joints must be continuously sealed with tape or with one of Dow's joint closure systems.

Contact a local Dow representative or access the literature library at www.dowstyrofoam.com/architect for more specific instructions.

6 Availability

THERMAX Heavy Duty Plus is manufactured in several locations and is distributed through an extensive network of manufacturers and distributors. For more information, consult the nearest Dow sales office or call 1-800-232-2436.

7 Warranty

Fifteen-year limited thermal warranty.

8 Maintenance

Not applicable.

9 Technical Services

Dow can provide technical information to help address questions when using THERMAX Heavy Duty Plus. Technical personnel are available to assist with any insulation project. Call 1-866-583-BLUE (2583).

10 Filing Systems

- www.dowstyrofoam.com/architect
- www.sweets.com

IN THE U.S.:

- For Technical Information: **1-866-583-BLUE (2583)**
- For Sales Information: **1-800-232-2436**

THE DOW CHEMICAL COMPANY

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WARNING: THERMAX insulation does not constitute a working walkable surface or qualify as a fall protection product.



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