1 PRODUCT NAME

THERMAX™ Heavy Duty Insulation

2 Manufacturer

The Dow Chemical Company
Building Solutions
200 Larkin
Midland, MI 48674
1-866-583-BLUE (2583)
Fax 1-989-832-1465
www.dowstyrofoam.com/architect

3 Product Description

THERMAX™ Heavy Duty insulation consists of a glass-fiber-reinforced polyisocyanurate foam core faced with nominal 4 mil embossed white acrylic-coated aluminum on one side and 1.25 mil embossed aluminum on the other. It can be installed exposed to the interior without a thermal barrier.

THERMAX Heavy Duty 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 with its low perm rating helps to reduce moisture condensation within and behind the insulation.

BASIC USE

THERMAX™ Heavy Duty is designed as an insulation and interior finish system for walls and ceilings in metal, wood post frame, and concrete or masonry buildings, as governed by building codes. The tough 4 mil white embossed aluminum surface of THERMAX Heavy Duty makes it a durable insulation/finish choice for use in moderate-impact areas, and it can be pressure-washed up to 2,000 psi with a 15-degree or greater spray tip (at 3' 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.

TABLE 1

THERMAX™ Heavy Duty 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	8.1
1.55	10.1
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.

4 Technical Data

APPLICABLE STANDARDS

THERMAX™ Heavy Duty meets ASTM C1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board, Type I, Class 2. Applicable standards include:

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

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

TABLE 2

Physical Properties of THERMAX™ Heavy Duty Insulation	
Property and Test Method	**Value**
Compressive Strength(1), ASTM D1621, psi, min.	25.0
Flexural Strength, ASTM C203, psi, min.	55.0
Water Absorption, ASTM C209, % by volume, max.	0.05
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 exhibits the properties and characteristics indicated in Table 2 when tested as represented.

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

ENVIRONMENTAL DATA

THERMAX™ Heavy Duty 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 complies with the following codes:

- International Residential Code 2003 (IRC) Section 314
- International Building Code (IBC) Section 2603
- National Evaluation Services (NES) NER-681
- 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, V454

TABLE 3

Chemical Resistance of THERMAX™ Heavy Duty 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)

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 are lightweight and can be sawed or cut with a knife. They install quickly to walls and ceilings – 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 insulation is manufactured in several locations and is distributed through an extensive network. For more information, 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. 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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COMBUSTIBLE: 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.

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

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

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