



1 PRODUCT NAME

HY-THERM™ AP Polyisocyanurate Roof Insulation

2 Manufacturer

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

3 Product Description

HY-THERM™ AP polyisocyanurate roof insulation products consist of a polyisocyanurate foam core covered with specially formulated organic/inorganic facers. The polyisocyanurate foam core is a closed-cell structure, delivering superior thermal efficiency (see Table 1). Available in flat and tapered board stock (see Table 3 for slopes of tapered panels), HY-THERM AP roof insulation is durable as well as lightweight and easy to handle. The facers are integrally laminated to the rigid foam core, giving HY-THERM AP roof insulation

superior dimensional stability and strength. It can be cut with a standard roofer's knife, contributing to job productivity.

BASIC USE

HY-THERM™ AP roof insulation is suited for use in most standard commercial roofing applications:

- built-up – gravel-surfaced, fully mopped (with suitable coverboard)
- modified bitumen (with suitable coverboard)
- single-ply – loose laid, ballasted, fully adhered and mechanically fastened
- metal

SIZES

Square Edge

Width and length:

4' x 8' (flat panels only)

Thickness:

1.0", 1.5", 1.7", 2.0", 2.5", 2.6", 3.0", 3.1", 3.3", 3.5", 4.0"

Width and length:

4' x 4' (flat and tapered panels)

Thickness:

2.0", 3.0", 4.0"

Product thicknesses and R-values are shown in Table 1. This product is only available west of the Rocky Mountains. Please consult your Dow representative for specific information.

4 Technical Data

APPLICABLE STANDARDS

HY-THERM™ AP roof insulation meets ASTM C1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board, Type II, Class 1, which includes:

- C518 – Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- D1622 – Standard Test Method for Apparent Density of Rigid Cellular Plastics
- D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- CAN/ULC S770-00 – Standard Test Method for Determination of Long-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams

TABLE 1

Nominal Thicknesses and R-Values	
Nominal Product Thickness, in.	Conditioned R-Value ⁽¹⁾
1.0	6.0
1.5	9.0
1.7	10.3
2.0	12.1
2.5	15.3
2.6	15.9
3.0	18.5
3.1	19.1
3.3	20.4
3.5	21.7
4.0	25.0

(1) R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values expressed in ft²•h•°F/Btu.

Long-term thermal resistance values determined in accordance with CAN/ULC S770.

TABLE 2

Physical Properties of HY-THERM™ AP Roof Insulation	
Property and Test	Value
Product Density, ASTM D1622, pcf, min.	1.65
Compressive Strength, vertical direction, ASTM D1621, psi, min.	20
Flame Spread, core foam ⁽¹⁾ , max.	25
Dimensional Stability, % linear change, max.	2
R-Value (per CAN/ULC S770)	See Table 1

(1) These numerical ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

TABLE 3

Slopes for HY-THERM™ AP Tapered Roof Insulation				
	A ⁽¹⁾	B ⁽¹⁾	C ⁽¹⁾	
1/8" Slope Nominal Board Thickness, in.	1 – 1-1/2	1-1/2 – 2	2 – 2-1/2	—
	X	G	Y	H
1/4" Slope Nominal Board Thickness, in.	1/2 – 1-1/2	1 – 2	1-1/2 – 2-1/2	2 – 3
	Q			
1/2" Slope Nominal Board Thickness, in.	1/2 – 2-1/2	—	—	—

(1) Made to order only

TABLE 4

Chemical Resistance of HY-THERM™ AP Roof Insulation	
Acid, organic	Excellent
Alcohol	Excellent
Asphalts, water-based	Excellent
Bases (caustics)	Poor
Brines and other salts	Excellent
Cements and mortar	Good
Gases, carbon dioxide (CO ₂)	Excellent
Gasoline	Excellent
Hydrocarbons	Excellent
Insecticides	Excellent
Kerosene	Excellent
Methyl ethyl ketone	Excellent
Mineral oil USP	Excellent
Naphtha	Excellent
Paints, alcohol-based	Excellent
Paints, water-based	Excellent
Polyglycols, including propylene glycol	Excellent
Water	Good

NOTE: This table should be used as a guide only. For design purposes, specific test data on the intended application may be needed.

CODE COMPLIANCE

HY-THERM™ AP roof insulation complies with the following codes:

- IBC – International Building Code
- Factory Mutual – Class I Approval per FMRC Standard 4450/4470 subject to conditions of approval as a roof insulation when installed as described in the current edition of the FMRC Approval Guide in thicknesses of 1.5" – 4.0"

PHYSICAL/CHEMICAL PROPERTIES

HY-THERM™ AP roof insulation exhibits physical properties as indicated in Tables 1 and 2.

For chemical resistance properties of HY-THERM AP roof insulation, see Table 4. HY-THERM AP roof insulation is compatible with membranes, chemicals and adhesives commonly used in commercial roofing applications. Consult the roofing system manufacturer or Dow for specific compatibility questions.

ENVIRONMENTAL DATA

HY-THERM™ AP roof insulation is manufactured with hydrocarbon blowing agents, which have no ozone depletion potential.

FIRE PROTECTION

HY-THERM™ AP roof insulation is combustible. Protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector.

5 Installation

Boards of HY-THERM™ AP roof insulation are easy to handle, cut and install. The maximum flute spanability is 2-5/8" for 1.0" board, 3-3/8" for 1.1", and 4-3/8" for 1.3".

A thermal barrier is not required for installation of HY-THERM AP roof insulation on steel decks 22 gauge or heavier.

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

6 Availability

HY-THERM™ AP roof insulation is only available west of the Rocky Mountains. For more specific information, contact your local Dow sales representative or call 1-866-583-BLUE.

7 Warranty

Not applicable.

8 Maintenance

Not applicable.

9 Technical Services

Dow can provide technical information to help address questions when using HY-THERM™ AP roof insulation. Technical personnel are available to assist with any insulation project. For technical assistance, 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**

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COMBUSTIBLE: Protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400.

Building and/or construction practices unrelated to insulation 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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