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Short Form Guide Specification

**RIGID POLYSTYRENE  
ROOF BOARD INSULATION  
- SLOPING METAL ROOFS**

June 2006

The Dow Chemical Company

Short Form Guide Specification - Rigid Polystyrene Roof Board Insulation-Sloping Metal Roofs  
STYROFOAM DECKMATE Plus

**SPEC NOTE:** Following are suggested specification paragraphs to be used when specifying rigid board insulation as part of a sloped metal roof assembly using preformed metal panels or standing seam metal panels.

**SPEC NOTE:** Insert the required paragraphs into the sloped metal roofing Section under the noted Articles, and make any required selections, such as board size, thickness, etc. Where selection is indicated with an [OR] statement, select the appropriate paragraph and delete the inappropriate statement. Delete all SPEC NOTES and [OR] statements prior to final printing.

**DISCLAIMER:** The manufacturer has reviewed the product information contained in this short form specification. The information is organized and presented to assist the specification writer working on a construction project to select the appropriate products and to save time in writing the project specification Section. The specification writer is responsible for product selection as well as the use and application of this information, and should contact the manufacturer to ensure that all options are available and that the associated specification information is valid and correct.

## PART 1 GENERAL

### 1.0X REFERENCES

**SPEC NOTE:** List applicable references (usually consensus standards) that are indicated within the text of this section. Identify by acronym, the standards agency, number and title. Verify the date of issue or last revision with the author organization.

- A. [ASTM C36/C36M-[01]: Standard Specification for Gypsum Wallboard.]
- B. ASTM C578-[06]: Standard Specification for Rigid, Cellular Polystyrene Insulation.

### 1.0X DELIVERY, STORAGE AND HANDLING

- A. Refer to Section [01 60 00] [\_\_\_\_\_].
- B. Handle Products carefully, ensuring board corners are not broken and boards are not damaged.
- C. Do not store Product exposed to direct sunlight. If stored outdoors, cover Product with light-coloured opaque tarpaulins to protect from solar radiation.
- D. Store Products away from construction activity and sources of ignition.

### 1.0X ENVIRONMENTAL REQUIREMENTS

- A. Apply insulation only when surfaces and ambient temperatures are within manufacturer's prescribed limits.

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## PART 2 PRODUCTS

### 2.0X MATERIALS

A. Roof Insulation: Extruded polystyrene board to ASTM C578, Type IV, rigid, closed cell type, with integral high density skin.

1. Aged Thermal Resistance (ASTM C518): R-5 per inch (RSI 0.87 per 25 mm).

**SPEC NOTE:** 2.5" thick boards are only available in 48" wide boards.

2. Board Size: [24 inch (610 mm)] [48 inch (1 220 mm)] wide, 96 inch (2 440 mm) long, [2" (50 mm)] [2.5" (62 mm)] [3" (75 mm)] [4" (100 mm)] thick.
3. Compressive Strength: Minimum 25 psi (170 kPa).
4. Water Absorption (ASTM C272): 0.1% by volume maximum.
5. Edges: Square.
6. Water Vapor Permeance (ASTM E96): less than 1.0 perm (60 ng/Pa• s• m<sup>2</sup>) for products greater than 1 inch thick.
7. Flame Spread/Smoke Developed Values (ASTM E84): 5/165.
8. Manufacturer and Product Name: Styrofoam Deckmate Plus by The Dow Chemical Company.

**SPEC NOTE:** Use a thermal barrier between the metal roof deck and the roof insulation boards when the structural metal deck is less than 22 gauge thick. Select either ½ inch fire rated gypsum board or 1/4 inch Dens-Deck, as described below.

- B. Thermal Barrier: [1/2 inch (13 mm) thick gypsum board, tapered edges, ivory faced fire rated board; to ASTM C36, Type X; UL labeled] [1/4 inch (6.4 mm) thick silicone treated gypsum core, glass mat [with non-asphaltic coating] both faces, fire rated Type X board meeting UL Class A; Dens-Deck by G-P Gypsum].
- C. Mechanical Fasteners: screw-type, [6 ga. (4.8 mm)] [3 ga. (6.4 mm)] diameter, [drilled] [self-drilling] self-tapping, [galvanized] [stainless] steel; sufficient length to securely anchor system into place and to withstand all super-imposed loads; complete with 1-1/2 inch (38 mm) diameter [PVC] [14 ga. (1.8 mm) thick galvanized steel] discs.

**SPEC NOTE:** additional information and a more detailed description for Dow Insta-Stik can be found by referring to the Dow Guide Specification 07 20 13 - ADHESIVES FOR THERMAL PROTECTION.

- D. Adhesive: [Insta-Stik by The Dow Chemical Company.] [\_\_\_\_\_].

## PART 3 EXECUTION

### 3.0X EXAMINATION

- A. Verify that the insulation boards and adjacent materials are compatible.

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- B. Verify that substrate is flat, sound, clean, and free of oil, grease, [objectionable air surface voids], [fins], [irregularities], [materials or substances that may impede adhesive bond].

### 3.0X PREPARATION

**SPEC NOTE:** delete the following Paragraph if a thermal barrier is not required.

- A. [Mechanically fasten thermal barrier to metal deck at [UL][FM] required spacing.]

**SPEC NOTE:** a vapor retarder membrane should be considered when the mean January temperature is 40 degrees F (4 degrees C) or less, or the interior humidity is greater than 45 percent.

- B. Apply roof vapor retarder membrane over [steel deck] [wood deck] [thermal barrier] as specified in Section 07 26 00.

**SPEC NOTE:** This short form guide specification only includes items specific to insulation. For information pertaining to vapor retardant membranes, eave protection, preformed metal panels, standing seam panels, metal girts, snow fence, flashing, vents, etc. refer to the guidelines of the National Roofing Contractors' Association.

### 3.0X INSULATION

- A. [Apply beads of adhesive and press roof insulation boards in place to ensure complete bond with substrate. Apply adhesive fully around protrusions. Conform to adhesive manufacturer's installation guidelines.]

[OR]

- A. [Mechanically fasten roof insulation boards to substrate at [UL][FM] required spacing.]
- B. Apply roof insulation boards parallel to roof perimeter edges.
- C. Lay roof insulation boards with edges in moderate contact without forcing. Cut to fit neatly to perimeter blocking and around penetrations through roof.
- D. Apply no more roof insulation boards than can be covered with roofing in same day.
- E. Keep roof insulation boards minimum 3 inches (75 mm) from heat emitting devices, and minimum 2 inches (50 mm) from sidewalls of Type A chimneys and Type B and L vents.

**SPEC NOTE:** Dow STYROFOAM DECKMATE Plus must be used with eave / soffit and ridge vents. Coordinate with Sections 07 46 00 - SIDING and 07 72 00 - ROOF ACCESSORIES.

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- F. Install roof insulation boards in a manner to ensure air space is properly vented by soffit / eave vents and ridge vents. Coordinate with Sections [07 46 00 and 07 72 00] [\_\_\_\_\_].

END OF SHORT FORM