



STYROFOAM™ DECKMATE™ PLUS INSULATION

Stands Up Under Standing Seam Metal Roofs

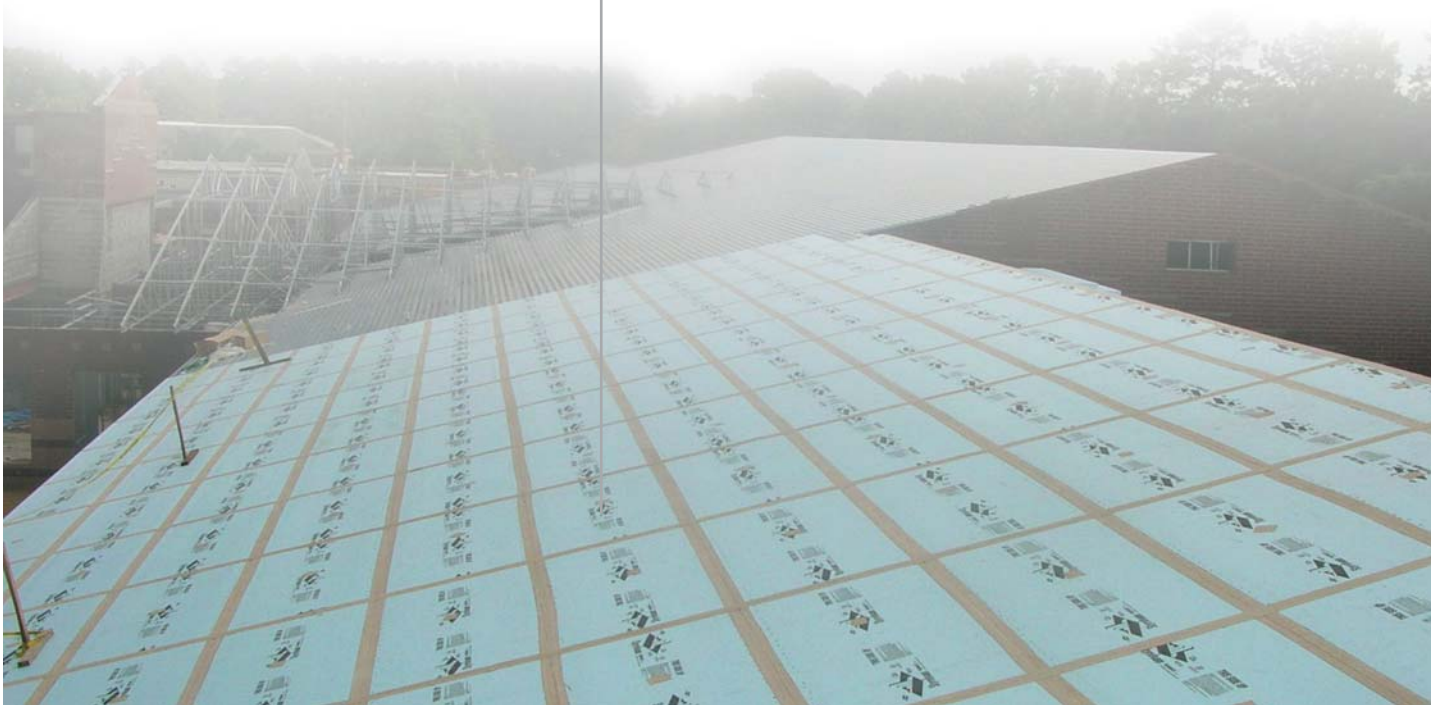
A Lasting Choice

For long-term durability and low maintenance, many building owners and designers look to standing seam metal roofs. A standing seam metal roof provides design flexibility and cost-effective protection against the elements.

Insulating with STYROFOAM™ DECKMATE™ Plus insulation from Dow boosts the energy performance of a metal roof, further increasing its cost effectiveness. As added value, STYROFOAM DECKMATE Plus offers design and installation flexibility, complies with building codes, can be reused in many situations, and is recyclable.

STYROFOAM DECKMATE Plus insulation delivers the properties designers, contractors and owners want:

- High long-term R-value – 5.0 per inch
- High compressive strength – 25 psi
- Outstanding moisture resistance



Save Money

Depending on the size and occupancy of a building, the cost to heat and cool it can represent an enormous financial commitment. Insulations are designed to reduce the amount of energy it takes to condition the air inside a building. Two critical factors can affect how well an insulation product continues to perform – moisture and time. STYROFOAM™ DECKMATE™ Plus insulation stands up to both conditions to offer long-term energy savings.

Moisture Resistance. Insulation within the roof system will inevitably come in contact with water, whether through leaks in the waterproofing envelope or due to the normal movement of water vapor between the building interior and exterior. Water is the biggest enemy of any insulation because it transfers heat 24 times faster than air (just think of wet gloves in winter). Third-party testing has verified that moisture-susceptible insulations can lose up to 80 percent of their insulating value when exposed to moist conditions. That means more energy – and money – is needed to condition the building.

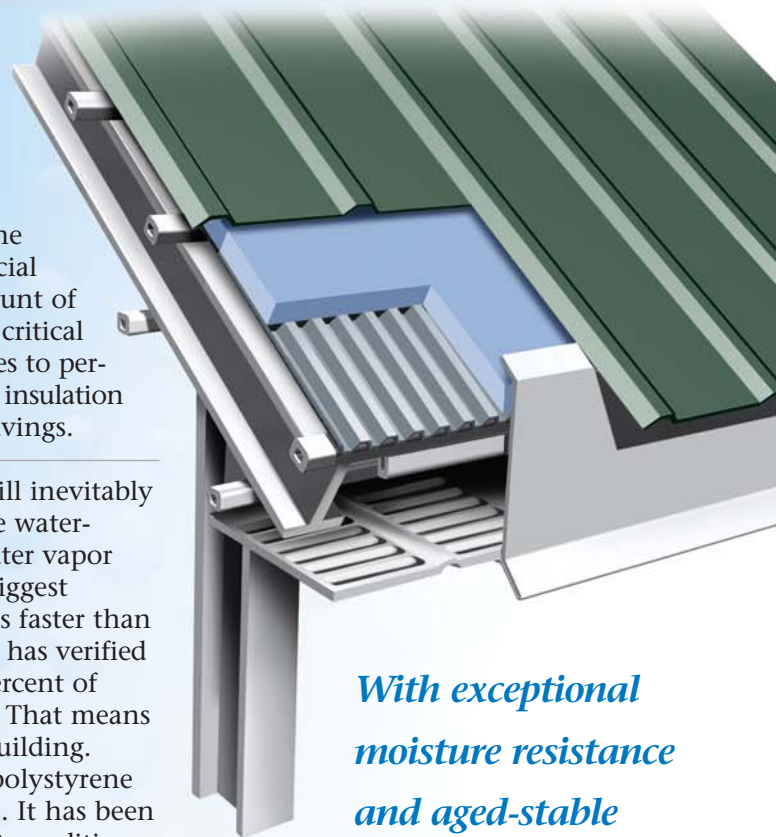
With a closed-cell structure, STYROFOAM™ extruded polystyrene insulation is inherently resistant to moisture in all forms. It has been shown to retain over 90 percent of its R-value under moist conditions.

R-Value Retention. The higher a product's R-value, the greater its insulating power. Some insulation manufacturers advertise initial R-values in their specification literature, even though the in-service or aged R-value of their products can drop by as much as 24 percent. In addition, some insulations can lose as much as 37 percent of their insulating value at elevated exposure temperatures, such as those encountered below dark-colored roofing membranes. And if the insulation absorbs water, its ability to insulate effectively will decrease even more.

The same closed-cell structure that defends against moisture helps STYROFOAM insulation retain its R-value, even after exposure to temperature extremes and moist conditions. STYROFOAM DECKMATE Plus insulation has an aged-stable R-value of 5.0 per inch. That means owners get the R-value they pay for. It also means that mechanical systems can be designed properly at the beginning of the job. And it assures an accurate economic payback analysis.

Reusability. Thanks to its ability to hold up over time, STYROFOAM insulation can be reused in many situations. In commercial roofing applications, STYROFOAM insulation is often reused when a new roofing membrane is installed. This saves both the cost of replacement insulation and the cost to haul wet insulation to the landfill.

And while you're keeping your material costs down when you use STYROFOAM insulation, you're also benefiting the environment. Plus, specifying reusable products is one of the building blocks of sustainable design. As a result, using STYROFOAM DECKMATE Plus insulation may help you achieve credits in the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) Program.



*With exceptional
moisture resistance
and aged-stable
R-value, STYROFOAM™
DECKMATE™ Plus insulation
may be the only roof
insulation you need for the life
of your building.*

Flexible Functionality

STYROFOAM™ DECKMATE™ Plus insulation combines design and installation flexibility with outstanding functionality. It needs no special materials or practices to satisfy code and installation requirements.

Direct-to-Deck Application. STYROFOAM DECKMATE Plus insulation is approved for direct-to-deck application under all building code jurisdictions. In fire classified (non-hourly rated) assemblies, the product can be installed directly to steel roof decks without an additional thermal barrier (as covered in ICC-ES Code Report NER-699, UL Construction No. 260 and UL Construction No. 440). STYROFOAM DECKMATE Plus insulation also meets the stringent requirements of UL 1256. Specific code requirements may apply.



STYROFOAM DECKMATE Plus insulation can be applied directly on metal decks.

Class A Fire Rating. Standing seam metal roofing systems that incorporate STYROFOAM DECKMATE Plus insulation can achieve a Class A rating. Consult the Underwriters Laboratories Building Materials Directory for further information.

Condensation and Vapor Management. The National Roofing Contractors Association (NRCA) recommends a layer of asphalt-saturated felt between the insulation and standing seam metal roof to provide a drainage plane in buildings with high potential for condensation. The NRCA Roofing and Waterproofing Manual recommends a vapor retarder with a permeance rating of 0.5 perms or less in certain climate zones. When installed to certain specifications, STYROFOAM DECKMATE Plus insulation can eliminate the need for these additional layers. Consult your Dow representative and the metal roof manufacturer for details.

Job Staging. STYROFOAM DECKMATE Plus insulation can make job staging easier, even when all of the components of the roof assembly fail to arrive on schedule. Insulation boards can be installed in one continuous process, followed by the metal roof. There is no need to cover and protect the insulation as it is installed. In fact, because STYROFOAM DECKMATE Plus insulation is so robust, it can serve as a temporary roof if delivery of the standing seam roof is delayed.



Install insulation in single or multiple layers, sealing the joints in the top layer with tape (see list of suggested tapes on page 5). If multiple layers of insulation are installed, offset (stagger) board joints between layers a minimum of 6 inches. Ask your Dow representative for additional details, or call 1-866-583-BLUE (2583).

Installation Ease. Boards of STYROFOAM™ insulation are lightweight, yet durable. They can be cut with a standard roofer's knife, yet they are strong enough to hold the clips used to attach standing seam metal roof panels. The insulation's high compressive strength (25 psi) allows the clips to seat properly in the surface of the insulation. And since STYROFOAM DECKMATE Plus insulation has no adhered facing material, there is no need to trim around the clip for proper clip seating, saving labor and cost.

Job Site Storage. Many moisture-sensitive insulations have specific storage requirements that must be followed at the job site. Not following these requirements may void your warranty. STYROFOAM extruded polystyrene insulations have no special storage requirements and can be stored outdoors. If STYROFOAM DECKMATE Plus is to be stored outdoors for a long period, please contact your local Dow representative for recommendations on storage or coverings.

Suggested Tapes

The following tapes may be used with STYROFOAM™ DECKMATE™ Plus insulation boards serving as a temporary roof:

WEATHERMATE™ Construction Tape
The Dow Chemical Company
1-866-583-BLUE (2583)

Protecto Wrap BT20
Protecto Wrap Company
1-800-759-9727

Polyguard Products, Inc.
1-972-875-8421

Design Considerations

Maximum Use Temperature. STYROFOAM™ insulations have been used successfully in millions of square feet of standing seam metal roof assemblies. STYROFOAM™ DECKMATE™ Plus insulation is recommended for use under all colors of standing seam steel metal roofs except black color steel metal roofs. STYROFOAM DECKMATE Plus insulation is not recommended for use directly under copper metal roofs. If a black metal roof or a copper metal roof is used, a minimum thickness of 1/4" DensDeck roof board is recommended to be used between the metal roof and STYROFOAM DECKMATE Plus insulation.

Hourly Rated Assemblies. No foam plastic insulation can obtain an hourly rating when installed directly on a steel roof deck without some additional form of protection. When STYROFOAM DECKMATE Plus insulation is used in an hourly assembly, a layer of 5/8" gypsum board must be installed on the deck in accordance with the particular UL specification.

Additional protection may consist of gypsum board installed on top of the deck, or sprayed cementitious or fibrous coatings applied to the bottom side of the deck. The form and amount of protection required depends upon the specific listed assembly.

Single-Source System Warranties. Single-source warranties can be obtained for STYROFOAM DECKMATE Plus insulation installed below standing seam metal roof assemblies.

Wind Uplift Ratings. STYROFOAM DECKMATE Plus insulation is accepted for use in UL Class 90 Wind Uplift Classified Assemblies Construction Nos. 238, 238a and 238b. It is also accepted in FM 1-90 rated systems. See manufacturers' specific listings in the FM Approval Guide, or contact your Dow representative for more information.

The Right Insulation Solution

Dow offers a full line of insulation solutions for the entire building envelope – roof to walls to foundation. And we back up our products with technical information, installation and application guidelines, and sales/marketing tools.



For more information, contact your Dow representative or call 1-866-583-BLUE (2583) or visit www.dowstyrofoam.com/architect.



STYROFOAM™ DECKMATE™ Plus insulation is covered by a 15-year limited thermal warranty.



Build Green With Dow

Dow supports initiatives that help preserve our environment, and we strive for environmental sensitivity in our manufacturing processes and in our products. Dow produces insulating foams that:

- contain no CFCs
- are formaldehyde-free
- are not a known food source for mold or insects
- contain post-industrial recycled content
- are recyclable
- contribute to LEED credits

Ask your Dow representative for more information.

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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 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.

THE DOW CHEMICAL COMPANY • Building Solutions • 200 Larkin • Midland, MI 48674
FOR TECHNICAL INFORMATION: 1-866-583-BLUE (2583) • FOR SALES INFORMATION: 1-800-232-2436
www.dowstyrofoam.com/architect

