

# A Lasting Choice.

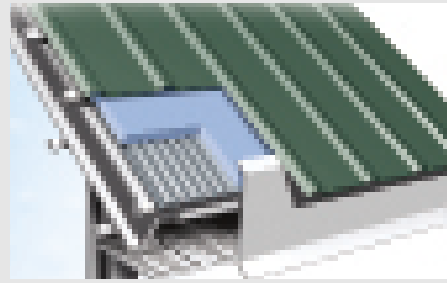
## Styrofoam™ Brand Deckmate™ Plus Insulation

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.



Research has shown extruded polystyrene insulation to retain over 90% of its R-value under long-term, moist conditions.

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



Insulating with **Styrofoam™ Brand Deckmate™ Plus Insulation** from DuPont boosts the energy performance of a metal roof, further increasing its cost effectiveness. As added value, **Styrofoam™ Brand Deckmate™ Plus** offers design and installation flexibility, complies with building codes, can be reused in many situations, and is recyclable.

**Styrofoam™ Brand 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
- Excellent 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. Insulation is 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™ Brand 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). According to the Cold Regions Research and Engineering Laboratory (CRREL), moisture-susceptible insulations can lose up to 80 percent of its insulation value depending on the degree of water absorption in applications where moisture exposure will occur. That means more energy – and money – is needed to condition the building. With a closed cell structure, **Styrofoam™ Brand 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. requirements for continuous insulation. We also recommend taping the sheathing joints with **Weathermate™ Straight Flashing** to help further protect the wall assembly from moisture entry.

**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™ Brand Insulation** retain its R-value, even after exposure to temperature extremes and moist conditions. **Styrofoam™ Brand Deckmate™ Plus Insulation** has an 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 helps to assure 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™ Brand 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™ Brand 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™ Brand Deckmate™ Plus Insulation** may help you achieve credits in the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) Program.



Install insulation in single or multiple layers, sealing the joints in the top layer with tape (see list of suggested tapes on page 3). If multiple layers of insulation are installed, offset (stagger) board joints between layers a minimum of 6 inches. Ask your DuPont representative for additional details, or call 1-866-583-2583.

## Flexible Functionality

**DuPont™ Styrofoam™ Brand Deckmate™ Plus Insulation** combines design and installation flexibility with excellent functionality. It needs no special materials or practices to satisfy code and installation requirements.

**Direct-to-Deck Application.** Styrofoam™ Brand Deckmate™ Plus Insulation is approved for direct-to-deck application under all building code jurisdictions in North America. 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 ESR-2142, UL Construction No. 260 and UL Construction No. 440). Styrofoam™ Brand Deckmate™ Plus Insulation also meets the stringent requirements of UL 1256. Specific code requirements may apply.

**Class A Fire Rating.** Standing seam metal roofing systems that incorporate Styrofoam™ Brand Deckmate™ Plus Insulation have a great chance of achieving 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™ Brand Deckmate™ Plus Insulation** can help eliminate the need for these additional layers. Consult your DuPont representative and the metal roof manufacturer for details.

**Job Staging.** Styrofoam™ Brand 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™ Brand 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 DuPont representative for additional details, or call 1-866-583-2583.

**Installation Ease.** Boards of Styrofoam™ Brand 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™ Brand 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™ Brand Extruded Polystyrene Foam Insulations have no special storage requirements and can be stored outdoors. If Styrofoam™ Brand Deckmate™ Plus is to be stored outdoors for a long period, please contact your local DuPont representative for recommendations on storage or coverings.

### Suggested Tapes

The following tapes may be used with Styrofoam™ Brand Deckmate™ Plus Insulation boards serving as a temporary roof:

Weathermate™ Construction Tape  
DuPont  
1-866-583-2583  
1-972-875-8421

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

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

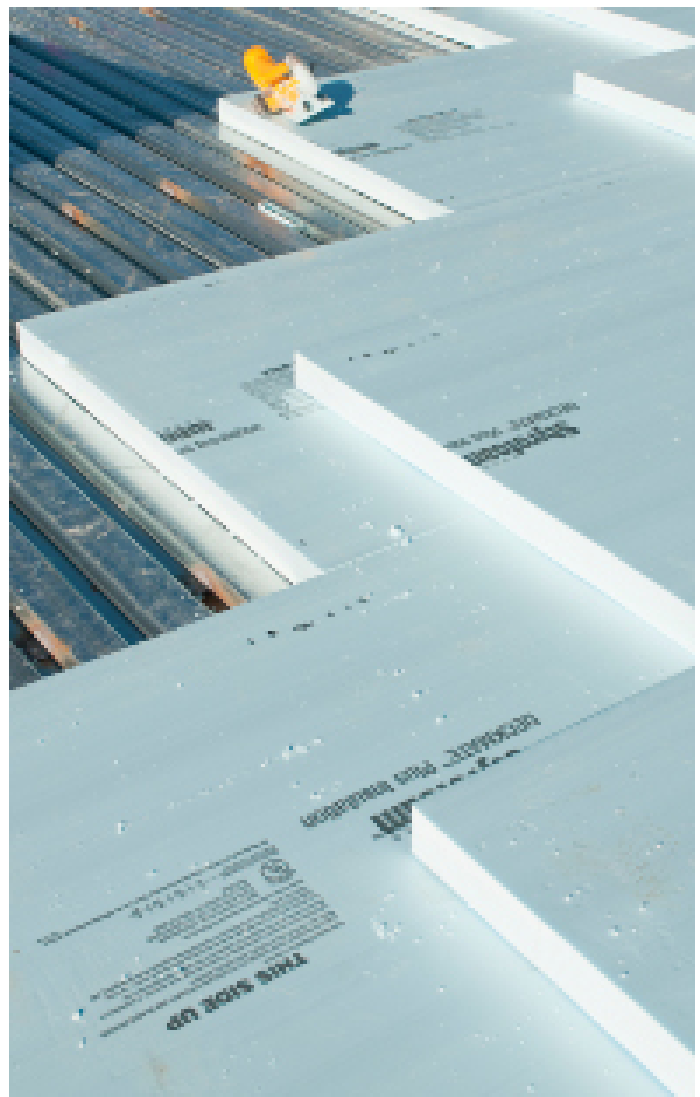
## Design Considerations

**Maximum Use Temperature.** DuPont™ Styrofoam™ Brand Insulations have been used successfully in millions of square feet of standing seam metal roof assemblies. **Styrofoam™ Brand Deckmate™ Plus Insulation** is recommended for use under most colors of standing seam steel metal roofs except for black or dark colored steel metal roofs. **Styrofoam™ Brand Deckmate™ Plus Insulation** is not recommended for use directly under copper metal roofs. If black, dark metal roof, or 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™ Brand Deckmate™ Plus 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™ Brand 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™ Brand Deckmate™ Plus Insulation** installed below standing seam metal roof assemblies.

**Wind Uplift Ratings.** **Styrofoam™ Brand 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 DuPont representative for more information.



Styrofoam™ Brand Deckmate™ Plus Insulation can be applied directly on metal decks.



**For more information visit  
[building.dupont.com](http://building.dupont.com)  
or call 1-866-583-2583**

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