

## FOAMULAR® Extruded Polystyrene Insulation

# DURAPINK® Roofing Recovery Board

### Thermal Performance Warranty

A 15-year R-value warranty is available at no additional charge for all roofing applications. Contact Owens Corning for warranty details.

### Architectural Notes

- Important: Recovery roofing is often done over uneven substrates. Humps, sharp edges or ridges in the existing membrane should be cut out if possible before covering with DURAPINK roofing recovery board. If this is not possible, DURAPINK roofing recovery board can be placed, but may crack over uneven surfaces when walked on.

When installed beneath dark-colored, mechanically attached membranes, some vertical displacement may be noticeable, especially during the high heat of mid-day. Such behavior is normal thermal expansion and contraction of the material. The movement will not affect the integrity of the recover roofing membrane or attachment systems.

- When installed beneath ballasted systems, DURAPINK roofing recovery board can be loose laid.
- A minimum of one fastener per eight square feet is required to secure DURAPINK roofing recovery board to the deck when installed beneath a white, mechanically attached roof system. The membrane should be laid out perpendicular to the long dimension of DURAPINK roofing recovery board panels.

### DURAPINK Insulation Physical Properties<sup>(1)</sup>

Property	ASTM Method <sup>(2)</sup>	Product/Values		
		1"	3/4"	1/2"
Compressive strength, <b>minimum</b> (specification) value (lb/in <sup>2</sup> ) <sup>(3)</sup>	D 2126	25.0	25.0	18.0
Flexural strength (lb/in <sup>2</sup> min.) <sup>(4)</sup>	C 203	100	100	80
Water absorption (% by volume max.) <sup>(5)</sup>	C 272	0.10	0.10	0.10
Water vapor permeance (perm. max.) <sup>(6)</sup>	E 96	0.60	0.60	1.20
Water affinity	–	hydrophobic		
Water capillarity	–	none	none	none
Linear coefficient of thermal expansion (in/in/°F max.)	–	2.7 x 10 <sup>-5</sup>	2.7 x 10 <sup>-5</sup>	2.7 x 10 <sup>-5</sup>
Flame spread <sup>(7)(8)</sup>	E 84	5	5	5

(1) Properties shown are representative values for 1" thick material based upon most recent product quality audit data. (2) Modified as required to meet ASTM C 578-92. (3) Value at yield or 10%, whichever occurs first. (4) Value at yield or 5%, whichever occurs first. (5) Data ranges from 0.00 to value shown, due to the level of precision of the test method. (6) Actual water vapor permeance data decreases as thickness increases. (7) These laboratory tests are not intended to describe the hazard presented by this material under actual fire conditions. (8) Data from Underwriters Laboratories, Inc.® Classified. See Classification Certificate U-197.

- DURAPINK roofing recovery board can be installed over coal tar pitch provided the existing coal tar is at least ten years old and has not been resaturated in the last four years.
- DURAPINK roofing recovery board is to be installed over existing roofs only and not over new insulation.
- See DURAPINK roofing recovery board guide specifications for complete installation details.

### Note

All products in every size described here may not be available in all geographic markets. For information about non-standard products, consult a local sales office or representative.

### Caution

Combustible. DURAPINK roofing recovery board will ignite if exposed to fire of sufficient heat and intensity, although it does contain a flame-retardant additive to inhibit ignition from small fire sources. During shipping, storage, installation and use, this product should not be exposed to open flame or other ignition sources.



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Pub. No. 15-FO-23550 Printed in U.S.A., August 1999 Copyright © 1999 Owens Corning.



## DURAPINK® Roofing Recovery Board

**FOAMULAR® Extruded Polystyrene Insulation**



**For use with black EPDM or other dark-colored single-ply membranes.**

### **New Economy and Durability for Worn Out Commercial Roofs**

DURAPINK roofing recovery board saves the trouble and expense of removing the old roof, and adds insulation and moisture protection to the new one.

Don't replace your worn out roof – recover it! Roofing recovery is an increasingly popular means of reroofing for aged and trouble-plagued roofs. The decision to recover a roof is based on two compelling reasons: The cost involved in tearing off the old roof, and the cost of disposing of the discarded debris – both of which can be significant.

When you recover, both costs are avoided. And, as a bonus, you'll feel good about saving space in your local landfill.

To meet the particular needs of this application, Owens Corning has developed DURAPINK roofing recovery board, a line of extruded polystyrene roofing products for use with single-ply membranes, including EPDM.\*

DURAPINK roofing recovery board works without overlaid protection, ballast or pavers. And Owens Corning is the only manufacturer of polystyrene insulation to recommend the use of its product for this application.

Consider these important characteristics of DURAPINK recovery board:

- Closed-cell structure means DURAPINK roofing recovery board resists damaging effects of moisture; never rots or decays.
- Only polystyrene insulation recommended by its manufacturer for use directly under black EPDM membranes, without need for protection.
- Lightweight, yet durable for labor-saving ease of hoisting and installation.
- Competitively priced with other recovery boards.
- Available in ½", ¾" and 1" thicknesses; 48" x 96" boards.
- Approved component in UL Class A, B and C single-ply recover applications.

### **Why DURAPINK Roofing Recovery Board? Moisture Resistance.**

You have four primary choices of materials when you consider roofing recovery:

- Extruded polystyrene
- Polyisocyanurate
- Perlite
- Fiberboard

Among these choices, only extruded polystyrene, like DURAPINK roofing recovery board, provides the moisture protection you need to assure that your recovered roof gives you years of dependable service.

The Army Corps of Engineers Cold Region Laboratory uses the term "thermal resistance ratio" (%TRR) to describe what happens when an insulation becomes "wet." In the view of the Corps of Engineers, when an insulation's %TRR falls below 80 percent, it is deemed "wet" and unacceptable as an insulating material.

As Figure 1 (page two) makes clear, extruded polystyrene is the material of choice – by a substantial margin. That's because of its long-term resistance to moisture. Owens Corning DURAPINK roofing recovery board is made with our patented HYDROVAC® manufacturing process, which gives it an impermeable skin on both sides. This skin and the tight, closed-cell structure of DURAPINK roofing recovery board are the reasons why it retains both its ability to insulate and its compressive strength and therefore its integrity on the roof.

### **Long-term Compressive Strength Ensures Long-lasting Roofs**

Proof of the superior compressive strength of DURAPINK roofing recovery board can be seen in Figure 2. The chart demonstrates how extruded polystyrene material like DURAPINK roofing recovery board retains 100 percent of its compressive strength even after a 24-hour soaking. Competitive materials either lose significant amounts of compressive strength or don't have much to begin with.

What's the value of high retained compressive strength? The first and most important benefit is that a high compressive strength recover board will last longer and provide sound support for the outer roofing membrane. It also means DURAPINK will stand up to the abuse of roof traffic. The product is tough and durable, yet lightweight, which results in labor-saving ease of handling and installation.

\* DURAPINK should not be used with single-ply PVC membranes.



# FOAMULAR® Extruded Polystyrene Insulation DURAPINK® Roofing Recovery Board

## The Science of Roofing Recovery

One concern you might have about recovering a roof is “What happens to the moisture that’s in the old roof?” – which probably is the reason you need a new one.

Research by the Oakridge National Laboratory (ORNL) suggests that wet roof systems containing permeable materials can be dried to the interior of a building during simulated summer conditions. Additional work by the Single-Ply Roofing Institute (SPRI) Recover Subcommittee further validates the ability of a wet roof to dry when recovered.

Naturally, roofs with similar moisture content will dry faster in warm climates than in colder climates. ORNL has shown, however, that moisture eventually will dissipate in a wide range of climatic conditions. The lab used computer modeling to compare data for Bismarck, North Dakota with data for Miami, Florida and found that in both climates roof moisture migrates from the top layer down through the bottom layer of the roof and eventually evaporates into the building. It takes considerably longer in North Dakota, but the moisture does dissipate, and it’s safe to consider roofing recovery for moderately wet roofs.

However, because of the length of time it takes to get rid of the moisture (in Bismarck, Miami or anywhere else), another case is made for using only extruded polystyrene recovery board. The amount of moisture that is contained in the old roof could pose degradation problems to other materials (refer to Figures 3 and 4).

## Other Considerations

Of course you should also consider the effect that water retained in the roofing system will have on components of the roofing system other than insulation, such as decking and fasteners. An evaluation should be made to determine the area of wetness and the level of saturation in each reroofing case. In situations where the wetted area is extensive and saturation levels are high, careful consideration should be given to assessing the impact moisture may have on the entire roofing assembly.

Figure 1

### CRREL Wetting Curves for Common Roof Insulations

Source: Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineers

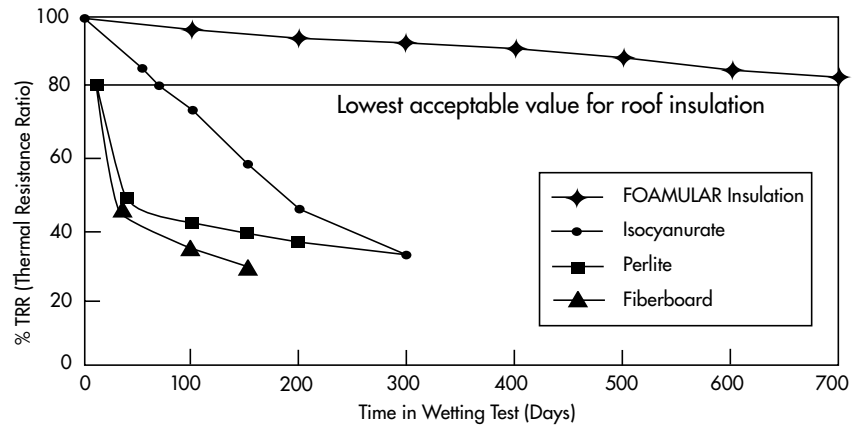
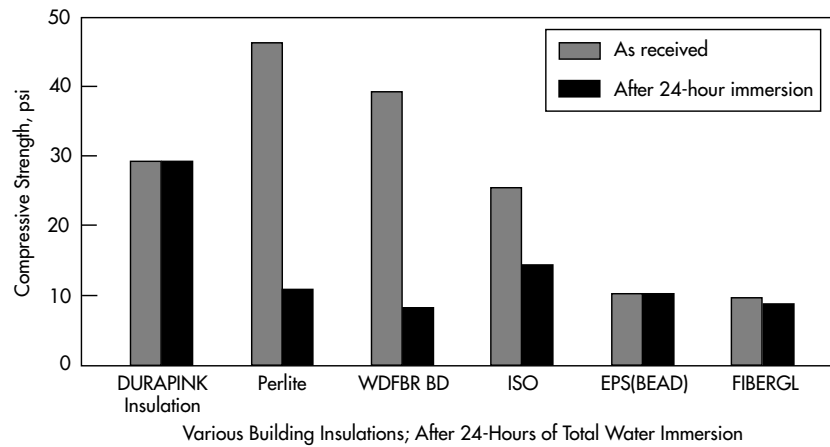


Figure 2

### Compressive Strength

Source: Owens Corning Research and Development Laboratory



Please note that some membranes, such as PVC containing plasticizers, will require a separator between DURAPINK roofing recovery board and the membrane.

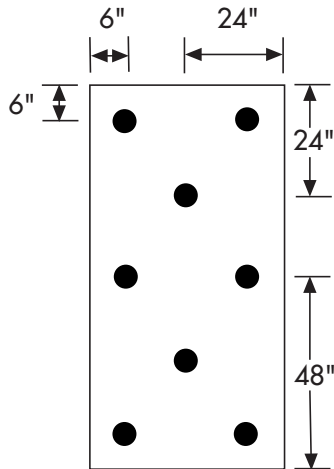
## Fastening Patterns

When installing DURAPINK roofing recovery board beneath a dark-colored, mechanically-attached membrane, Owens Corning recommends the installation of eight fasteners and stress plates per 4' x 8' panel. The diagram (next page)

shows the recommended fastener placement. For fully adhered and ballasted systems, contact the specific membrane manufacturer or Owens Corning for fastening recommendations.

For plasticized membranes, use DURAPINK PLUS roofing recovery board. Please consult your Owens Corning representative.

### Fastening Pattern Diagram



### Compliance with Standards

- Underwriters Laboratories, Inc.®  
See Classification Certificate U-197
- BOCAI 2603
- ICBO 2602
- SBCCI 2603
- Meets ASTM Standard  
Specifications C 578

### References

- "Single-Ply Roofing Systems: Guidelines for Refitting Existing Roof Systems," Single-ply Roofing Institute, A Professional Guide to Specification, 1987.
- "New Wetting Curves for Common Roof Insulations," W. Tobiasson, A. Greatorex, D. Van Pelt, US Army Corp of Engineers Cold Regions Research & Engineering Laboratory. Paper presented at the NRCA 1991 International Symposium on Roofing Technology.
- "The Impact of Climate on Drying Times of a Wetted Low-Slope Roof System," A.O. Desjarlais, D.M. Kyle, J.E. Christian, Oakridge National Laboratory, Journal of Thermal Insulation, December 1992.
- Pedersen, C. Rode, "MATCH – Moisture and Temperature Calculations for Constructions of Hygroscopic Materials – A Users Guide." Thermal Insulation Laboratory, Technical University of Denmark.

Figure 3

### Miami, Florida

Source: Oak Ridge National Laboratory

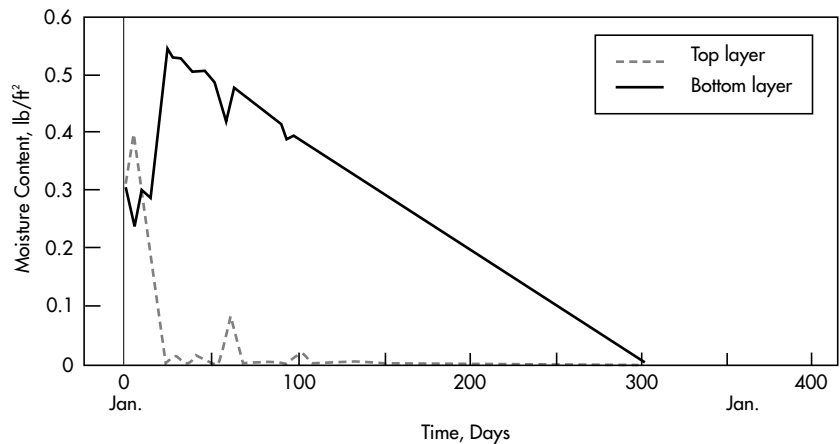
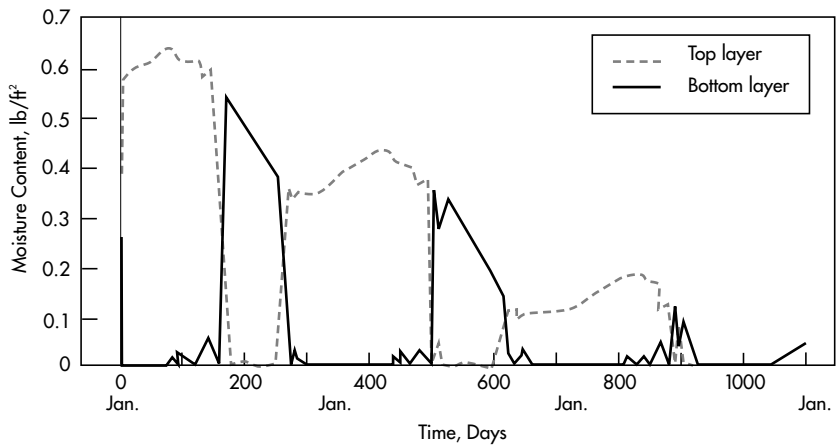


Figure 4

### Bismarck, North Dakota

Source: Oak Ridge National Laboratory



### Product Data

#### Material

Extruded polystyrene closed-cell foam panel with continuous skin on face and back surfaces. DURAPINK insulation is produced by Owens Corning's patented HYDROVAC process technology under conditions of strict quality control.

#### Thermal resistance

R=5.6 at 25 °F, 5.4 at 40 °F, 5.0 at 75 °F; mean temperature and 1" thickness (hr x ft² x °F/Btu). (R-value is the resistance of heat flow through a material. The higher the R-value, the greater the insulating power.)

#### Sizes

½", ¾", 1", thick; 48" x 96"; square edges

#### Edges

Square

#### Weight

Approximately 75 lb/1,000 ft² for ½"; 112 lb/1,000 ft² for ¾"; 150 lb/1,000 ft²

#### Packaging

Shipped in units (3072 bd-ft), 8 bundles with 2 stretch-wrap bands per bundle.