

dIP Foam™ Polyiso Roof Insulation

dIP Foam-II and dIP Foam-III roof insulation consist of a closed cell polyisocyanurate foam core with facings suitable for either hot or cold applications. The polyiso cores provide excellent fire performance characteristics combined with the highest R-value to thickness ratio commercially available. dIP Foam products are offered in a variety of thicknesses, providing long-term thermal resistance values from 6 to 25 (view LTTR tables at our website). dIP Foam products are available in 4' x 4' as well as 4' x 8' panels, and are also available in a 25-psi formula.

APPLICATIONS

dIP Foam-II has a polyiso core integrally laminated to heavy black (non-asphaltic) fiber-reinforced felt facers. It is typically specified for hot asphalt or coal tar BUR, modified bitumen and single-ply membrane systems. dIP Foam-II has one side marked for hot BUR and modified bitumen applications and one unmarked side for single-ply and cold-applied modified bitumen applications, making this an almost universally adaptable product suitable for a variety of applications.

dIP Foam-III features a polyiso foam core integrally laminated to heavy coated-glass facers which are more durable. This product is also more dimensionally stable, and typically specified for cold-applied BUR, modified bitumen, and single-ply membrane systems. Do Not Use With Hot-Applied Membranes.

STORAGE

Factory-applied packaging is intended only for protection during transit. When stored outdoors or on the job site, the insulation should be stacked on pallets at least four inches above ground level and completely covered with weatherproof covering such as a tarpaulin. The temporary factory-applied packaging should be slit or removed to prevent accumulation of condensation. Roof insulation that has become wet or damaged should be replaced.

MOISTURE/VAPOR CONTROLS

Vapor retarders are used to impede the passage of water vapor into roofing systems thereby preventing condensation and resulting damage to the insulation and roof system. All dIP Foam roof insulation products may be installed with or without a vapor retarder. Special consideration should be given to construction-generated moisture, since the manufacturer can not be held responsible for resultant damage to the insulation. Designers may consult the NRCA Roofing and Weatherproofing Manual for guidance in determining the need for a vapor retarder and avoidance of construction-generated moisture.

SUSTAINABILITY

Concerned about the environment? So is Dyplast Products! dIP Foam products are non-ozone depleting, and have recycled content between 16% and 43% by weight, depending on thickness (55% post-consumer, 45% post-industrial). All products distributed or manufactured by Dyplast Products are 100% CFC-free.

Rev 5/04

Dyplast Products is the preeminent manufacturer of polyisocyanurate and expanded polystyrene rigid foam products, and also distributes a variety of complementary products. With new world-class production facilities in Miami, Florida, Dyplast Products offers its customers unsurpassed responsiveness with a wide variety of product configurations. Our customer-focused staff, combined with our sound financial footing, ensure we deliver incomparable value to our customers far into the future. **For information on Dyplast Products or additional technical data on this product, visit our website at www.dyplastproducts.com.**

CODES AND COMPLIANCES

- Federal Specification HH-I-1972/GEN and HH-I-1972/2, Class 1 (cancelled but still in use)
- ASTM C 1289, Type II, Class 1* and Class 2**
- NYC MEA No. 107-01-M*
- California State Insulation Quality Standards and Title 25 Foam Flammability Criteria (License #TC 1231)
- IBC, NBC, UBC, and SBC Sections on Foam Insulations (Chapter 26)
- FM Standard 4450/4470 Approval
 - dIP Foam-II and dIP Foam-III are approved for Class 1 insulated steel, wood, concrete and gypsum roof deck construction for 1-60 and 1-90 wind-storm classifications.
 - dIP Foam-II may be mopped or mechanically fastened to concrete roof decks. See FM Approval Guide for details.
- UL Standard 1256 Classification
 - Insulated metal deck construction assemblies - Construction No. 120 and No. 123.
- UL Standard 790 (ASTM E 108) Classification - Class A with most roof membrane systems. See UL Roofing Materials & Systems Directory.
- UL Standard 263 Fire Resistance Classification (ASTM E 119) See UL Fire Resistance Directory for updated classification listings.
- UL Standard 1897 Uplift Resistance* 120 psf, 150 psf, 165 psf, 245 psf

* dIP Foam-II **dIP Foam-III



WARNING - DO NOT LEAVE EXPOSED

This product is polyiso organic plastic foam and will burn if exposed to an ignition source of sufficient heat and intensity, or open flame, such as a welder's torch. Like other organic materials, this product will release smoke if ignited. Do not apply flame directly to dIP Foam products. This product should be used only in strict accordance with recommended uses and instructions.

INSTALLATION

DIIP Foam products should be attached to decks that are approved by Factory Mutual and local codes. Before installation begins, the roof deck should be firm, well attached, even, clean and dry. DIIP Foam products should be kept dry before, during, and after installation. Although DIIP Foam products have been designed to withstand normal foot traffic, protection from damage by excessive traffic and/or abuse is extremely important. Roof surface protection such as plywood should be used in areas where storage and staging are planned and heavy traffic is anticipated. Proper installation and protection of the insulation is necessary to prevent roof failures. Dyplast Products is not responsible for determining the suitability of the deck or for any damage caused by abuse or improper attachment.

MULTI-LAYER APPLICATION OF INSULATION

A two-layer application of DIIP Foam products is strongly recommended. The joints in each layer should be offset in order to avoid a vertically continuous joint. Two layers (or more) with joints staggered can provide improved insulation performance by eliminating thermal bridges. This method also reduces condensation potential and thermal stress on the roof membrane.

MECHANICAL ATTACHMENT

Mechanical fastening is the recommended method of attachment over nailable decks. Visit www.dyplastproducts.com for fastener frequency and spacing information. Refer to the FM Loss Prevention Data Sheet 1-29 for special considerations regarding the perimeter and corners of the roof. For recommendations regarding application of insulation to lightweight concrete decks or poured gypsum concrete decks refer to the NRCA Roofing and Waterproofing Manual. DIIP Foam products should not be adhered directly to these decks by any bitumen or adhesive attachment method.

BITUMEN ATTACHMENT

For installing DIIP Foam-II to a cast-in-place structural concrete deck, adhesive/bitumen attachment is the recommended method. Priming is necessary when using asphalt on concrete decks. Precautions must be taken to prevent bitumen drippage. When using hot-applied bitumen for insulation attachment, the temperature of the asphalt should be approximately 50°F below the interply hand mopping EVT. The deck must be dry and care must be taken to apply the bitumen in sufficient quantity to totally cover the available deck surface. Use 18 to 30 pounds of bitumen per square to ensure proper attachment. To ensure embedment, the board must also be "stepped in" at several points while the bitumen is still hot enough to allow positive attachment. The recommended Foam insulation size for hot asphalt attachment is 4' x 4'. Because of the unevenness of cast-in-place structural concrete decks, 4' x 8' boards are not recommended for bitumen attachment to the deck. 4' x 8' boards may, however, be mechanically fastened. **DO NOT INSTALL DIIP FOAM-III WITH HOT ASPHALT.**

TYPICAL PHYSICAL PROPERTIES

Property	Test Method	Test Results
Dimensional Stability (Length and Width)	ASTM D 2126	<2%
Compressive Strength (10% Deformation)	ASTM D 1621	20 psi (140 kPa)
Water Absorption	ASTM C 209 ASTM D 2842	<1% <3.5%
Moisture Vapor Transmission	ASTM E 96	<1.5 perm (85.0 ng/(Pa*s*m ²))
Product Density	ASTM D 1622	Nominal 2.0 pcf (32.04 kg/m ³)
Flame Spread	ASTM E 84 (Full 10 min. Test)	25-50**
Smoke Developed	ASTM E 84 (Full 10 min. Test)	50-170**
Tensile Strength	ASTM D 1623	>730 psf (35 kPa)
Service Temperature	--	-100 to 250°F (-73 to 122°C)



Environmentally friendly HCFC Free Green Polyiso Insulation Products

CONCRETE DECKS

Cast-in-place structural concrete, poured gypsum and lightweight insulating concrete decks require special consideration to address the large amounts of inherent moisture. Consult the NRCA Roofing and Waterproofing Manual for recommendations and instructions.

LIMITATIONS OF WARRANTIES AND LIABILITY

Other than the aforementioned representations and descriptions, Seller makes no other representations or warranties as to the insulation herein. The Seller disclaims all other warranties, expressed or implied, including the warranty of merchantability and the warranty of fitness for a particular purpose. Manufacturer does, however, have a limited warranty as to the R-value of the insulation, the terms of which are available upon request. Seller shall not be liable for any incidental or consequential damages including the cost of installation, removal, repair or replacement of this product. Buyer's remedies shall be limited exclusively to, at Seller's option, the repayment of the purchase price or re-supply of product in a quantity equal to that of the nonconforming product. Seller's agents, salespersons, or other representatives have no authority to waive or alter the above limitation of liability and remedies.