

# DURO-GUARD<sup>®</sup> ISO NB

## Description:

Duro-Guard<sup>®</sup> ISO NB is a rigid roof insulation composite panel composed of a closed cell polyisocyanurate foam core bonded during the manufacturing process to fiber reinforced facers on one side and either 7/16 or 5/8 inch oriented strand board (OSB) on the other.

- A superior combination of high insulating properties and a nailable surface.
- Foam core manufactured with a blowing agent that has zero ozone depletion potential (ODP) and virtually no global warming potential (GWP).
- Approved for direct application to steel and other deck types.
- **Duro-Guard ISO NB is not a structural panel, and is suitable only for installation over fully supported structural decks.**
- Incorporates APA-TECO Rated Exposure 1 OSB.
- Also available with plywood.
- Foam core available in two grades of compressive strength per ASTM C 1289.
  - Type II, Class 1, Grade 2 (20 psi).
  - Type II, Class 1, Grade 3 (25 psi).
- Refer to Table 2 for physical properties.

## Recommended Uses:

- Underlayment for Exceptional<sup>®</sup> Metals standing seam metal roofs.
- Mechanically attached Duro-Last<sup>®</sup> roof systems.
- Adhered/Fully Bonded Duro-Last roof systems.
- Duro-Bond<sup>®</sup> roof systems.
- Metal retrofit roof systems.

## Underwriters Laboratories, Inc. Classifications:

- UL 1256.
- Insulated Metal Deck Constructions:
  - No. 120, 123, 292.
- UL 790.
- UL 263 Hourly Rated P Series Roof Assemblies.
- UL Classified for use in Canada.

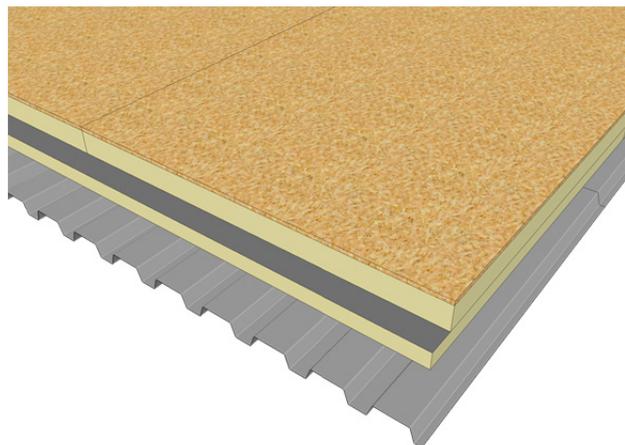


Figure 1. Duro-Guard ISO NB (Top Layer)

## Factory Mutual Approvals:

- FM 4450, FM 4470.
- Approved for Class 1 insulated steel deck construction.
- Refer to FM Approval's RoofNav for details on FM Approved systems ([www.roofnav.com](http://www.roofnav.com)).

## Flat Panels:

- Available sizes:
  - 4 ft. x 4 ft.
  - 4 ft. x 8 ft.
  - Thicknesses: 1.5 to 4.5 inches.
- Refer to Table 1 for R-value and flute spanability.

TABLE 1. THERMAL VALUES				
THICKNESS*		LTTR R-VALUE	FLUTE SPANABILITY	
(inches)	(mm)		(inches)	(mm)
1.50	38	6.20	4.625	111
2.00	51	9.10	4.375	111
2.50	64	12.00	4.375	111
3.00	76	15.00	4.375	111
3.50	89	18.00	4.375	111
4.00	102	21.10	4.375	111
4.50	114	24.20	4.375	111

\* Contact Duro-Last for additional thickness options.

**Installation:**

- Panels must be kept dry before, during and after installation. Install only as much insulation as can be covered the same day with completed roofing.
- The use of multiple layers of insulation with joints staggered a minimum of 6 inches between layers is recommended to eliminate thermal bridging.
- Abut panel edges together and stagger joints of adjacent panels.
- Boards must be neatly fitted to roof deck and around penetrations with no gaps greater than ¼ inch.
- Refer to the appropriate Duro-Last roof system specification and detail drawings for deck preparation and attachment requirements.
- Precautions must be taken to ensure that new concrete decks have fully hydrated and do not continue to release moisture.

**Panel Attachment:**

- Panels may be attached to the roof deck using mechanical fasteners, insulation adhesive or hot bitumen. It is acceptable to use these products in combination.

*Mechanical Attachment*

- When installing multiple layers (which may include insulation, cover boards and thermal barriers) it is acceptable to mechanically secure through all layers.
- Use fasteners intended for use with this product and that are supplied by or approved by Duro-Last, Inc.

*Adhesive Attachment*

- Insulation adhesive must be supplied by Duro-Last, Inc. Refer to the adhesive's product data sheet for application guidelines. Acceptable products:
  - Duro-Grip® Insta-Stik™.
  - Duro-Grip Olybond®.
  - Duro-Grip Millenium Weather-Tite®.
  - Duro-Grip CR-20.
- Subsequent layers of insulation and approved cover boards may be attached with insulation adhesive.
- Maximum panel dimensions are 4 ft. x 4 ft.

*Hot Bitumen Attachment*

- When using hot bitumen on concrete decks, priming is necessary.
- Temperature of the bitumen shall be approximately 50° F below the inter-ply hand mopping EVT.

**TABLE 2. TYPICAL PHYSICAL PROPERTIES (FOAM CORE)**

<b>Compressive Strength</b>	ASTM D 1621 ASTM C 1289	Grade 2	20 psi (138 kPa)
		Grade 3	25 psi (172 kPa)
<b>Dimensional Stability</b>	ASTM D 2126	2% linear change (7 days)	
<b>Moisture Vapor Transmission</b>	ASTM E 96	< 1 perm (57.5 ng/Pa·s·m <sup>2</sup> )	
<b>Water Absorption</b>	ASTM C 209	< 1% volume	
<b>Service Temperature</b>		-100° to 250° F (-73° to 122° C)	

- The deck shall be dry and care must be taken to apply the bitumen in sufficient quantity to totally cover the available deck surface.
- To ensure embedment, the board shall also be "stepped in" at several points while the bitumen is still hot enough to allow positive attachment.
- Maximum panel dimensions are 4 ft. x 4 ft.
- Any roof membrane contaminated with bitumen must be replaced.

**Storage:**

- Insulation must be protected from open flame and kept dry at all times.
- Factory applied packaging is intended only for protection during transit. Slit or remove the packaging to prevent accumulation of condensation.
- Store elevated (at least 3 inches) and completely covered with a weatherproof covering such as a tarpaulin.
- Do not use panels which are wet or damaged.
- Refer to PIMA Technical Bulletin No. 109: *Storage and Handling Recommendations for Polyiso Roof Insulation* for additional guidelines ([www.pima.org](http://www.pima.org)).

**Limitations:**

- Duro-Last, Inc. will not be responsible or liable for any defects or problems related to building or roof design by others, to deficiencies in construction, to dangerous conditions on the job site, or to improper storage, handling or installation by others.