DURO-GUARD® EPS FLUTE FILL COMBO

Description:
Duro-Guard® EPS Flute Fill Combo is a premium insulation consisting of a superior closed-cell, lightweight and resilient expanded polystyrene (EPS). It meets or exceeds the requirements of ASTM C 578, *Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.*

EPS Flute Fill Combo can be cut to fit virtually all types of steel deck and metal roof profiles, thus elimimating any need for a separate flute filler. It can be ordered with a polyester facer or fire rated (FR) coated-glass fiber mat facer.

Benefits:
- FR facer helps to achieve UL class A roof assembly over noncombustible decks. Refer to UL listings for maximum incline.
- Both facer types eliminate the need for a slip sheet.
- Shiplap joints help prevent thermal bridging.
- High thermal efficiency and maximum durability.
- Reduces inter-ply adhesive and saves labor.
- Provides long-term thermal insulation value.
- Does not contain CFCs or HCFCs.
- Superior moisture resistance.
- Recyclable.
- Available in two densities per ASTM C 578:
  - Type VIII, 1.25 pcf.
  - Type II, 1.50 pcf.
- Refer to Table 2 for physical properties.

Recommended Uses:
- Mechanically attached Duro-Last® roof systems.
- Duro-Bond® roof systems (with FR facer only).
- Metal retrofit roof systems.

Refer to the appropriate installation specification for the above uses.

Underwriters Laboratories Inc.:
- Refer to Duro-Last's UL Listings (TGFU.R10128) for assembly details (www.ul.com).

Factory Mutual Global:
- Refer to FM Approval's RoofNav for details on FM Approved systems (www.roofnav.com).

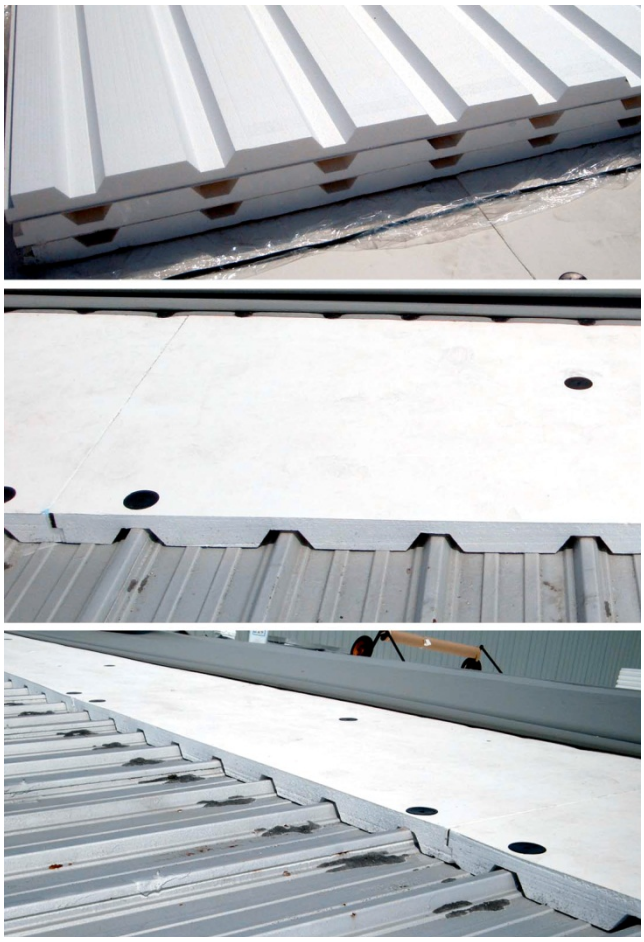

Figure 1. Duro-Guard EPS Flute Fill Combo with FR facer

Flat Panels:
- Typical sizes:
  - 4 ft. x 8 ft. (1,220 mm x 2,440 mm).
  - Thickness (overall): Up to 6 inches (152 mm).
  - Thickness (above top flute):
    - Polyester facer: 1-1/2 inches (38 mm) min.
    - FR facer: 1 inch (25 mm) min.

Installation:
- **Duro-Guard EPS Flute Fill Combo may be used directly under the Duro-Last membrane with either polyester or FR facer. Any damaged or missing facer will require Duro-Blue® or Duro-Weave™ slip sheet to be installed between the EPS and Duro-Last membrane. Care should be taken to ensure that "bare" EPS is never in direct contact with the membrane. Refer to the appropriate Duro-Last specification for slip sheet and cover board requirements.**

Created: 01/22/2014 Revised: 09/05/2014, 05/31/2017

- 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.

Panel Attachment:

- Panels may be attached to the roof deck using mechanical fasteners only.

Mechanical Attachment

- When installing multiple layers (which may include insulation, cover boards and thermal barriers) it is acceptable to mechanically secure through all layers.
- Only use fasteners and plates supplied by, or pre-approved by, Duro-Last, Inc.
- **When installed with the Duro-Bond induction-weld plates, the FR facer must be used.**

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.

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.

TABLE 1. TYPICAL THERMAL VALUES

Thickness*		R-Value	
Inches	mm	Type VIII	Type II
1.50	38	6.3	6.7
2.00	51	8.4	9.0
2.50	64	10.5	11.2
3.00	76	12.6	13.5
3.50	89	14.7	15.7
4.00	102	16.8	17.0
4.50	114	18.9	20.2
5.00	127	21.0	22.5
5.50	140	23.1	24.7
6.00	152	25.2	27.0

* Contact Duro-Last for additional thickness options.

TABLE 2. TYPICAL PHYSICAL PROPERTIES

Property	Test Method	Type VIII	Type II
Density (nominal)	ASTM C 303	1.25 pcf	1.50 pcf
R-Value (per inch) @40°F @75°F	ASTM C 518 or C 177	4.25 3.92	4.55 4.17
Compressive Strength (10% deformation)	ASTM D 1621	13 – 18 psi	15 – 21 psi
Flexural Strength	ASTM D 203	32 – 38 psi	40 – 50 psi
Dimensional Stability	ASTM D 2126	≤ 2.0%	≤ 2.0%
Water Vapor Permeance	ASTM E 96	1.5 – 3.5 perm	1.0 – 3.5 perm
Water Absorption	ASTM C 272	< 3.0%	< 3.0%

Created: 01/22/2014 Revised: 09/05/2014, 05/31/2017