

Product Information Bulletin 350

**EPS Insulation for
Direct to Deck
Roof Applications
per 2012 IBC**

Product Information Bulletin

BULLETIN NO.	350
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EPS Insulation for Direct to Deck Roof Applications per 2012 IBC

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This bulletin addresses use of Plasti-Fab expanded polystyrene (EPS) foam plastic insulation as a component in roof assemblies applied direct to a metal roof deck assembly in compliance with the 2012 International Building Code (IBC) based upon recognition of Plasti-Fab EPS insulation as a component in a Underwriters Laboratory (UL) fire classified roof deck construction.

The 2012 IBC Section 2603.4 requires that except as provided in Sections 2603.4.1 and 2603.10, foam plastic shall be separated from the interior of a building by an approved thermal barrier of 1/2-inch (12.7 mm) gypsum wallboard or a material that has been tested in accordance with and meets the acceptance criteria of NFPA 275. This requirement means that in most instances foam plastic insulation in building construction will require a thermal barrier on the interior face.

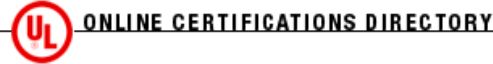
2012 IBC Section 2603.4.1 states that the thermal barrier specified in Section 2603.4 is not required under the conditions set forth in Sections 2603.4.1.1 through 2603.4.1.14. Section 2603.4.1.5 states that a thermal barrier is not required for foam plastic insulation that is a part of a Class A, B or C roof-covering assembly, provided the assembly with the foam plastic insulation satisfactorily passes FM 4450 or UL 1256.

UL has investigated the performance of EPS insulation in accordance with UL 1256, **Fire Test of Roof Deck Constructions**. UL 1256 addresses fire test methods to evaluate the performance of metallic and non-metallic roof deck constructions subjected to internal (under deck) fire exposures for the purpose of determining the contribution of the roof covering material, insulation, and other components of the roofing system to the spread of fire within a building.

As evidence of compliance with UL 1256, UL publishes fire classified roof deck constructions to provide architects, engineers and specifiers with information on suitable roof deck constructions. UL Roof Deck Construction No. 458 provides detailed requirements for a roof construction tested to UL 1256. See attached copy of UL Roof Deck Construction No. 458 for detailed description. Item 3 of UL Roof Deck Construction No. 458 provides the following:

3. **Rigid polystyrene insulation**, — EPS, loose laid or mechanically fastened in one or more layers, Classified by UL, under the Roof Deck Construction category "Foamed Plastic" as an alternate, to any Classified polystyrene foamed plastic insulation board (EPS) can be used. See **Foamed Plastic (BRYX)** category in the Building Materials Directory or (TGFU) category in the Roofing Materials and Systems Directory. Total thickness and density of insulation not to exceed an equivalent of 10 in. at 1 PCF density. Example: an equivalent combination would be 8 in. at a 1.25 PCF density.

Plasti-Fab EPS insulation listed under UL file R19918 is a UL Classified polystyrene foamed plastic insulation board under the **BRYX** category and would therefore be suitable as an alternate for use in UL Roof Deck Construction No. 458.



Construction No. 458 TGKX.458 Roof Deck Constructions

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Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

Roof Deck Constructions

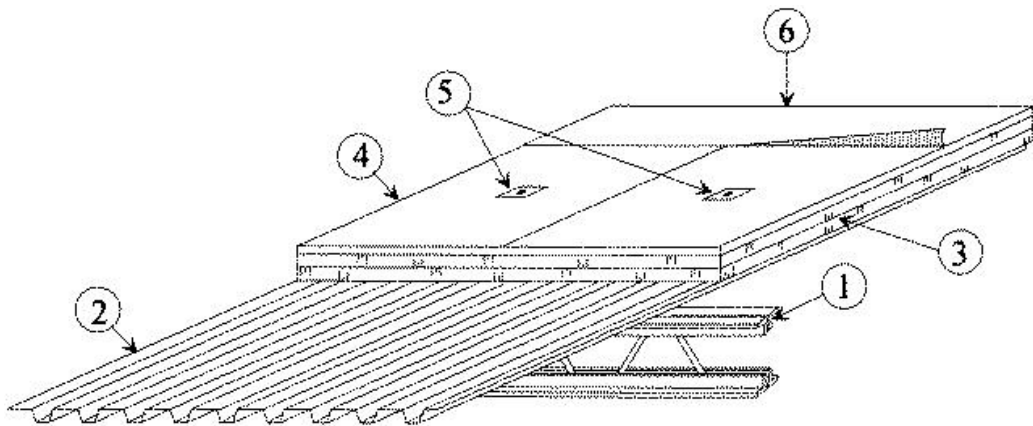
[See General Information for Roof Deck Constructions](#)

Construction No. 458

June 08, 2015

Uplift-Not Investigated

Fire-Classified



- 1. Supports** — Structural steel or other materials acceptable to authorities having jurisdiction.
- 2. Steel Deck** — No. 22 MSG min, 1-1/2 in. deep unperforated coated steel, fluted on 6 in. centers. Welded or mechanically fastened to supports in accordance with deck manufacturer's recommendations.
- 3. Rigid polystyrene insulation**, — EPS, loose laid or mechanically fastened in one or more layers, Classified by UL, under the Roof Deck Construction category "Foamed Plastic" as an alternate, to any Classified polystyrene foamed plastic insulation board (EPS) can be used. See **Foamed Plastic (BRYX)** category in the Building Materials Directory or (TGFU) category in the Roofing Materials and Systems Directory. Total thickness and density of insulation not to exceed an equivalent of 10 in. at 1 PCF density. Example: an equivalent combination would be 8 in. at a 1.25 PCF density.
- 3A. Building Unit*** — In lieu of Item 3, Rigid Foamed Plastic With Vented Roof Deck — Vented Nail-base roof deck products which are Classified by UL - Roofing Materials and Systems Directory, **Roof Deck Construction, Building Units (TIAR)** intended to provide ventilation between the nailed decking and a foamed plastic insulated steel deck construction. The nail-base deck consists of 7/16-in. thick (min) oriented strand board (OSB) or 15/32-in. thick (min) plywood.

ATLAS ROOFING CORP — "Vented-R", "ACFoam CrossVent" or "ACFoam III CrossVent"

4. **Barrier Board* (Optional)** — A min 3/4 in. perlite, 1/2 in. wood fiber, 1/2 in. gypsum board or G-P Gypsum 1/4 in. DensDeck® cover board or min. 1/4 in. Owens Corning Specialty & Foam Products "Strataguard", minimum 1/4 in. thick United States Gypsum Co. SECUROCK® Roof Board (Type FRX-G) or minimum 1/4 in thick **SECUROCK® Glass-Mat Roof Board (Type SGMRX)** or min. 1/4 in. thick CertainTeed Gypsum Inc "GlasRoc" or minimum 1/4 in. National Gypsum "DEXcell Glass Mat Roof Board" or "DEXcell FA Glass Mat Roof Board" placed over the insulation. Required when a single ply membrane is mechanically fastened or fully adhered without slip sheet or other cover product over EPS as a Classified roofing system under TGFU.

5. **Fasteners (Optional)** — Fasteners used to attach foamed plastic and cover board to steel deck. Fasteners are self-drilling, self-tapping roof insulation screws with insulation plates.

6. **Roof Covering*** — A max 0.08 in. thick loose laid (ballasted), mechanically fastened or adhered membrane roof covering Classified by UL as **Membrane for Roofing Systems (TGFU)** as described in the Roofing Materials and Systems Directory.

6A. **Metal Roof Deck Panels*** — (Not shown) — In addition to or in lieu of Item 6, the roof covering may consist of a mechanically fastened metal roof deck panel assembly. See **Metal Roof Deck Panels (TJPV)** as described in the Roofing Materials and Systems Directory.

6B. **Roof Covering*** — In lieu of Item 6, a modified bitumen membrane roof covering over Barrier Board (Item 4) Classified as **Membrane for Roofing Systems (TGFU)**. Foamed Plastic insulation (Item 3) limited to 6 in. thickness.

6C. **Roof Covering**** — In lieu of Item 6 and in combination with Item 3A; asphalt shingles, fiber-cement tile and metal (or wood) shingles or shakes; an underlayment (optional) and/or vapor barrier (optional) Classified as **Prepared Roofing Accessories (TGDY)**. Roof covering to be installed as specified by manufacturer.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2015-06-08

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