



# TECHNICAL BULLETIN

## TECHNICAL BULLETIN # 1004

**SUBJECT: INSULFOAM EPS Direct to Metal Decks**

**DATE: February 9, 2002; Revised 01-09-2012**

InsulFoam EPS has been and is acceptable for application direct to typical metal roof decks without a thermal barrier. This acceptance was gained by conducting full scale UL 1256 tests on roof assemblies. While original recognition was obtained through evaluation reports the current acceptance is based on the International Building Code.

Within the International Building Code (IBC) the use of foam plastics in construction and its requirements are found in Chapter 26. Specifically, Section 2603.4 calls out that foam plastic shall be separated from the interior by an accepted thermal barrier material unless addressed in sections 2603.4.1 which takes into account when thermal barriers are not required. One of these exceptions is found in Section 2603.4.1.5 Roofing which states:

*...A thermal barrier is not required for foam plastic insulation that is 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.*

As noted in Section 2603.4.1.5 UL 1256 is an acceptable test to demonstrate that a thermal barrier is not required on a steel deck. UL 1256 does not require unusual labeling, restrictions for reroofing or sprinklers in the building.

Insulfoam was instrumental in conducting UL 1256 assemblies which can now be found in the Underwriters Laboratories fire classified roof constructions. InsulFoam EPS meets the requirements of Constructions Number 440 and 458(pgs. 3) for the use in direct to metal deck applications. In addition, to compliance with UL 1256 InsulFoam EPS have listings in UL categories BRYX and TGFU. Insulfoam's file R14131 in category TGFU listings indicates assemblies that InsulFoam EPS is used in to meet the Class A, B or C requirements. InsulFoam EPS roof insulation is labeled as required by UL and no additional labeling is required to meet code requirements outlined in Chapter 26 of the IBC.

The application of Insulfoam EPS in Direct-to-Deck single-ply applications provides for a code compliant, safe, cost effective roof system. As always, questions pertaining to this application can be forwarded to your local Insulfoam representative or made to Insulfoam Technical Center at 1/800-469-8870.

INSULATION ENGINEERED TO  
**MAKE A DIFFERENCE.**

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**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**

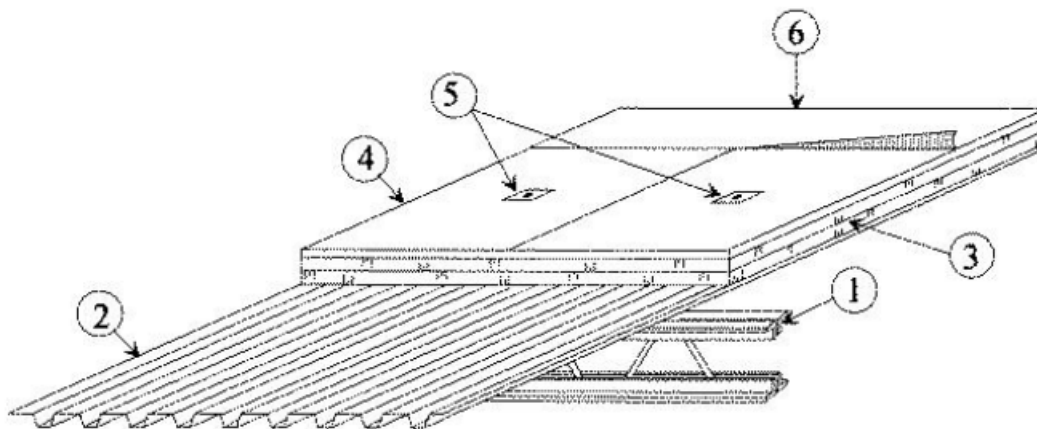
[See General Information for Roof Deck Constructions](#)

**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.

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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 SGRMX) 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