

**CITY & COUNTY OF DENVER
COMMUNITY PLANNING & DEVELOPMENT
BUILDING PERMIT POLICY**

Subject: FOAM PLASTICS WITH REINFORCED RUBBERIZED ASPHALT ROOFING		
Approved: Eric Browning, P.E., Building Official		Drafted by: Renn
Number: DCBC 1507.18	Effective Date: February 22, 2023	Page 1 of 2

Reference: 2022 Denver Commercial Building Code (DCBC) Section 1507.18

Scope and intent:

This policy is intended to clarify the use of foam plastic insulation with hot-applied reinforced rubberized asphalt roofing as allowed by Section 1507.18 of the 2022 DCBC. Section 1507.18.4 indicates that foam plastic insulation used with pavers and pedestals shall be in an *approved* roof assembly. This policy clarifies what assemblies are *approved* for this section.

This type of roofing system is often installed as a protected membrane roof, with foam plastic insulation installed above the roofing membrane. Where pavers on pedestals are placed directly above the insulation a concealed combustible space is created, which creates an inherent fire hazard. Additionally, the insulation is often installed with thickness greater than the 4" maximum allowed in typical tests for surface-burning characteristics (ASTM E84 and UL 723). This policy is intended to minimize fire hazards by approving roof assemblies that protect the insulation to avoid a concealed combustible space condition between the insulation and the pavers; thereby, addressing the topic of concealed combustible spaces in NFPA 13 and avoiding the need to provide fire sprinklers in this space.

Background and definition:

1507.18.4 Foam Plastics. Foam plastic insulation shall comply with Section 2603. Foam plastic insulation used with pavers and pedestals shall be in an *approved* roof assembly.

APPROVED. Acceptable to the *building official*.

Policy:

A roof assembly constructed with pavers and pedestals in accordance with DCBC Section 1507.18.4 is considered *approved* if all the following conditions are met:

1. Roof assembly complies with fire classification requirements of DCBC Section 1505.
2. Foam plastic insulation complies with DCBC Section 2603.
3. Foam plastic insulation has a flame spread index of not more than 75 where tested at a thickness of 4 inches in accordance with ASTM E84 or UL 723 and complies with the material standards in DCBC Table 1508.2 or is considered limited combustible as identified in condition #5 below.
4. Plastic pedestals comply with Denver Policy DCBC 603.1 in Type I & II Buildings.
5. Top of foam plastic insulation is protected with a continuous layer of one of the following items immediately over the insulation or the foam plastic insulation is considered limited combustible per NFPA 13-4.10.2 (i.e. has a heat release content of less than 3500 Btu/lb when tested in accordance with NFPA 259 with a flame spread index of not more than 25 (ASTM E84 or UL 723)):

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- a. Minimum $\frac{3}{8}$ " thick cementitious layer
- b. Minimum 10 psf stone layer (#8 pea gravel or smaller in size), at least 1-inch in thickness
- c. Non-combustible material that complies with thermal barrier requirements of DCBC Section 2603.4
- d. Non-combustible pavers with pedestals/spacer tabs that provide a maximum $\frac{1}{4}$ " space between the foam plastic insulation and the underside of the pavers.

END OF DOCUMENT