

TECHNICAL BULLETIN

TARGET MARKET ROOFING



BUILDING TRUST



Subject: Polystyrene Insulations - Expanded Polystyrene (EPS) & Extruded Polystyrene (XPS)

21-05

The use of polystyrene (EPS or XPS) insulation boards within Sarnafil® or Sikaplan® roofing systems provides an effective means to add insulation, create a taper/cricket system, or recover an existing roof. Polystyrene insulation can also be used in combination with polyisocyanurate insulation to provide a cost-effective solution to maximize the overall R-value of the insulation package.

General Requirements

A. Adhered Roofs

1. A gypsum-based cover board or appropriate thickness isocyanurate insulation board or high density iso cover board as noted in the UL and/or FM listing is required.
2. Only water-based adhesive, self-adhered membrane, or feltback membrane adhered with low-rise urethane membrane adhesive can be used for roof membrane attachment.
3. FM insured or specified systems require a gypsum-based thermal barrier. Non-FM projects can utilize a UL fire rating for which the insulation can be installed directly to metal deck.

B. Mechanically Attached Roofs

1. A gypsum-based cover board, appropriate thickness isocyanurate insulation board or high density iso cover board as noted in the UL and/or FM listing or a thermal slip sheet is required between the insulation and roof membrane.
2. Fanfold EPS is an option for recover applications on non-FM projects (see below).
3. FM insured or specified systems require a gypsum-based thermal barrier. Non-FM projects can utilize a UL fire rating for which the insulation can be installed directly to metal deck.

Warranty & Products

Roofing projects are eligible for Sika's System warranty when Sarnatherm® EPS or Sika supplied EPS boards with a nominal 1.25 lbs/ft³ (minimum 1.15 lbs/ft³) density or greater are used provided it meets the minimum requirements of ASTM C 578 Type VIII. This requirement is consistent with the NRCA roofing recommendations.¹

Sika supplied XPS can be used if it meets the minimum requirements of ASTM C 578 Type XII.

If the compressive strength of the EPS/XPS board is less than 20 psi, then a gypsum-based cover board must be installed over the board for load distribution and resistance purposes.

EPS Fanfold Underlayment Options

In addition to EPS/XPS insulation boards, Sika supplied EPS fanfold roofing underlayments may be used for Sikaplan® mechanically attached or RhinoBond® roof systems. The systems are not FM approved but have UL fire ratings when installed over a UL Classified and listed assembly. The recover applications are noted in the UL directory as "Maintenance and Repair".

¹ *The NRCA Roofing Manual: Membrane Roof Systems – 2019, Chapter 4 – Rigid Board Insulation, pg. 132*