FOAMULAR® Extruded Polystyrene (XPS) Insulation
Heat Build Up Due to Solar Exposure

Technical Bulletin

Managing Heat Build Up Due to Solar Exposure During Installation

IMPORTANT: FOAMULAR® Extruded Polystyrene (XPS) Insulation, like all polystyrene insulation, is made from a thermoplastic resin with a maximum service temperature of 165°F. When it is placed under black/dark (non-white) materials, or in horizontal applications (such as under slab or roof deck) that may experience greater solar exposure than vertical applications, it may be damaged by heat build-up. Simple precautions taken during the construction process can minimize the potential for damage. For all horizontal applications, always turn the print side down so the black print does not show to the sun and act as a solar collector, raising the temperature of the foam under the print.

For storage of factory wrapped or unwrapped units, or temporary protection during installation, or in any horizontal application

When covering is necessary, use only white opaque material, or, cover with the final approved finish material as soon as possible. Do not cover FOAMULAR® XPS Insulation either stored (factory wrapped or unwrapped), or partially installed, with dark colored (non-white), or clear (non-opaque) coverings and leave it exposed to the sun. Examples of such coverings include but are not limited to filter fabrics, membranes, temporary tarps, clear polyethylene, etc. If improperly covered, and exposed to the right combination of sun, time and temperature, deformation damage may occur rapidly. Dark (non-white) coverings absorb solar energy and raise temperature. Clear (non-opaque) coverings allow light energy from the sun to pass through rather than reflect it which may produce a partial greenhouse effect, trapping hot air and raising the temperature below the cover. A white opaque cover reflects energy from the sun rather than absorbing it or passing it which reduces the potential for excessive heat exposure.

For under floor slabs, and above/below grade walls

When installing black/dark (non-white) tapes and/or waterproofing/air barrier membranes over FOAMULAR® XPS Insulation, avoid prolonged sun exposure. Provide daily final finish covering or temporary white opaque covering over black/dark (non-white) surfaces to avoid possible damage.

For under floor slabs, ice rinks, on roof decks, and on other horizontal surfaces

When placing the board, turn the printed FOAMULAR® XPS Insulation surface down so that the black lettering is not exposed to potential solar heat gain.

For roofing

Apply only as much FOAMULAR® XPS Insulation as can be covered by the finished roofing surface (overlayment, roof membrane and/or ballast) in the same day of installation to prevent its discoloration, wind displacement and possible damage from heat build-up by excessive sun exposure.

For ballasted roofing systems (including PRMA[1])

With no cover board over the XPS, black/dark (non-white) roofing membranes (or filtration fabrics in PRMA) over FOAMULAR® XPS Insulation must be ballasted immediately after placement to help prevent potential heat damage from sun exposure and wind displacement of the insulation under the membrane/fabric.

For mechanically attached and fully adhered roofing systems

In areas where black/dark membranes are used and where "reflected solar energy" is expected to be present, FOAMULAR® XPS Insulation needs protection in addition to normally specified cover boards. For example, roof areas adjacent to higher walls, particularly walls with reflective surfaces, or near large rooftop HVAC units, or near or in between clusters of mechanical equipment, or near other structures with reflective cladding (metal or glass); or near higher reflective parapets, all such areas should be considered for additional heat protection. Such roof areas must be covered with pavers or ballast. Black/dark (non-white) membranes must be coated with white reflective topping, and maintained white, to avoid damage due to the intensified heat exposure from reflected sun in such areas.

1 PRMA, Protected Roof Membrane Assemblies

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For more details, please refer to current literature or contact the local FOAMULAR® XPS Insulation sales representative.

For more information on the Owens Corning family of building products, contact your Owens Corning dealer, call 1-800-GET-PINK®, or access www.owenscorning.com

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