White Paper Confirms Benefits of Dark Roofs in Cold Climates

“Heating Penalty”, Moisture Accumulation Cited as Issues with Reflective Membranes

Washington, DC, January 16, 2017 – The EPDM Roofing Association (ERA) is releasing a White Paper, “Cool Roofs in Northern Climates” that reaffirms the value of dark roofing membranes in Climate Zone 4 and above. The paper is the result of an extensive survey of research that has been conducted during the last decade, investigating the relative benefits of reflective and dark roofing in climates throughout the United States.

“We asked our technical committee to conduct this study to create clarity in a debate that has intensified without any real resolution, and created confusion in the construction community,” said Ellen Thorp, Associate Executive Director of ERA. “Our members manufacture both dark and reflective roofing membrane. On their behalf, we felt it was important to provide a thorough survey of the best thinking on this issue for our members and their customers.”

The White Paper (available on the ERA website at www.epdmroofs.org) found that two dominant issues generally support the use of dark membranes in cold climate. First, the “heating penalty” that is associated with “cool roofs” in cold climates can negate energy savings accrued during the relatively short months when air conditioning is in use. Research found that this penalty can lower energy savings to a little as pennies per square foot or, more frequently, create a deficit in energy costs during cooler and cold seasons. This deficit can be exacerbated by the costs of cleaning a reflective roof to maintain its efficiency during the summer.

In addition, widespread research pointed to issues with condensation as a deterrent to the use of reflective roofing in cold climates. Summarizing findings by Kehrer and Pallin released in 2013, the White Paper points out that, “Compared to a traditional black roof, the amount of accumulated moisture during the winter can be two to three times greater in a cool roof construction.” The Paper notes that these condensation problems can be mitigated with additional improved air-leakage control and indoor relative humidity control.

“We welcome this thorough overview of the research focusing on the use of reflective membranes in cold climates,” said Mike Ducharme, Chair of the ERA Board of Directors and Vice President - Product Marketing at Carlisle Construction Materials. “This paper reinforces our position that the choice of a
roofing membrane is best made on a case-by-case basis by experts who can take into account the specific needs of building owners, as well as the unique climate of a specific site.”

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The EPDM Roofing Association (ERA) is the first trade association solely representing the manufacturers of EPDM single-ply roofing products and their leading suppliers. ERA provides technical and research support to the public and the construction industry, and communicates the longstanding attributes, consistency and value proposition of EPDM rubber membrane roofing materials.

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