Dear Building Owner and Facility Managers,

In the Professional Roofing article titled "Un-Cool Consequences of Cool Roofing," Samir Ibrahim exposes the truth behind the misconception that reflective roofing is always an effective way for building owners to achieve energy savings and lower their total utility costs, and therefore reduce their building's carbon footprint. To explain why white roofing is *not* a universal fix for climate change and achieving total energy savings, Ibrahim couples results from the most recent roofing studies with his 30+ years of roofing systems design experience. The potential side effects of white roofing, and the causes and warning signs of these side effects, and the best ways to avoid the trade-offs associated with reflective roofing are also discussed. It is essential that roofing professionals and building owners be able to separate fact from the fiction when it comes to a one size fits all perception of 'cool' roofing.

FACT: There are potentially adverse unintended consequences of improperly designed white roofing systems in northern climates. The underside of a reflective membrane, the roof insulation and occasionally the roof deck (when combined with lower insulation levels or when using a single layer of insulation) are cooler than their counterparts on a dark-colored roof. If warm moist air contacts any of these surfaces below the dew point, condensation is formed. Condensation can cause warped insulation that impacts R-value, dripping from a thawing roofing assembly, mold growth within a wet roofing assembly and loss of adhesion to the roof deck which increases the risk of a blow off. All of these issues can cause damage to a building and cost building owners money in repairs. Consultants, architects and contractors should use the information provided by Versico to design roof systems that will reduce the potential liability for condensation problems. Dark colored roofs are one way to increase the safety factor against potential condensation.

FICTION: 'Cool' roofs are protected from the condensation problem by the warranty. In fact, most manufacturing companies exclude any damage caused by condensation from their roofing system warranties. Manufacturers have clearly stated that they are not liable for condensation problems.

FACT: There is NOT a "one-size-fits-all" roofing solution for energy savings. Despite the promotion of the cool roofing concept beyond where it was originally intended, it is always important to remember that different geographic areas, climates, and weather conditions require different types of roofing systems. After subtracting out the "Heating Penalty" incurred in northern climates, net energy savings with reflective roofing are primarily seen in warm, southern climates.

FICTION: White roofs are always the most environmentally friendly and energy-efficient choice. Not only does this belief ignore climate zone, building type and insulation level, it is also based on studies done during the late 1990's and early 2000's. The most recent and comprehensive studies like the Ashley-McGraw Architects, PC and CDH Energy Corp study show that reflective roofing does not save energy in certain climates. Even the ENERGY STAR roofing program recommends using the Roof Savings Calculator before you assume white is right.

It is essential for roofing professionals and building owners to be educated about the unintended consequences of reflective roofing like condensation, and the conditions under which it can become a problem. A roofing system should be chosen based on numerous variables including a proven track record of UV and hail resistance, life cycle analysis, geographic fit, building location and use, and less on the perception that white saves net energy everywhere.

Sincerely,

Ronald L. Goodman
Marketing Manager, EPDM and Fleece Roofing Systems

Test cut of a white roof assembly in a northern climate showing condensation forming in area where the vapor barrier is missing.