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### BIPV and the Pain of Failures. It's all about the Embodiment

A standard solar module has 4 main parts, the backsheet, encapsulated solar cells, glass panel and frame. Solar cells are fragile and, time has proven glass to be the best barrier. With an integrated solar roof (BIPV), the roofing material serves as the backsheet and the frame. The trick is to develop the correct backsheet and frame embodiment. Cement, Slate, Clay, Wood, Plastics and Composite roofing materials are not suitable as the backsheet or frame for various reasons. Embodiment must be lightweight and thick enough to encompass the wiring and the solar module. Embodiment must be smooth enough to not damage the solar cells from behind. Embodiment must be rigid enough to prevent flexing. Embodiment must be lightweight. Embodiment must be able to pass wind rating code compliance. Embodiment must be easy to work with and install for wide adoption.

EternaTile is a molded foam product with a cementitious coating technology that provides the perfect BIPV embodiment for the following reasons. EternaTile is lightweight and has the required thickness with plenty of room to spare should it be needed with future advancements in photovoltaic generation technologies. The foam can be smooth and firm for the backsheet and the structural rigidity makes for an excellent frame. Our foam tiles are easy to work with and install. Now add the glass barrier and you have the best BIPV embodiment.

Currently, EternaTile is the only embodiment perfectly suited for BIPV on the rooftop. EternaTile's embodiment is technology agnostic. An EternaTile solar roof tri-tile embodiment can incorporate any encapsulated solar cell/solar module technology. Currently EternaTile relies on proven solar module manufacturing processes and, as new technologies prove themselves, those new technologies can integrate into the EternaTile BIPV embodiment.

EternaTile is the first and only company to develop, patent and manufacture a code compliant, Class A fire rated, foam roofing tile and BIPV embodiment for hi-slope roofing.

Under comparative analysis to every solar option that has or hasn't made it to the marketplace, EternaTile delivers superior benefits to each stakeholder, it's the only practical embodiment engineered to bring all the advantages of foam to hi-slope roofing.

