In-Place Performance Temperatures

GCP's self-adhered underlayments (Grace Ice & Water Shield®, Grace Ice & Water Shield® HT, Grace Ultra™, Grace Select™, Grace Basik®, Grace Roof Detail Membrane™, Tri-Flex and Grace SYN 15™) are formulated to withstand rooftop temperatures. The temperature that a roof assembly reaches can vary significantly depending on the time of year, the local climate, the color and composition of the roof covering material, and the construction of the roof assembly. Based on actual in-place temperature measurements and mathematical models using climatic data from the National Oceanic and Atmospheric Agency, GCP understands the temperatures that roofs are likely to experience. Based on these measured and calculated roof temperatures, GCP underlayments are formulated for performance for the life of the roof.

Grace Ultra and Grace Ice & Water Shield HT have been formulated to provide the highest factor of safety when used under extreme climatic and roof construction conditions. An example of extreme roof construction temperature conditions may be a black metal roof installed over the GCP underlayment applied to rigid insulation boards with no roof ventilation. Extreme climatic conditions may be defined as the 30 year hourly extreme temperature, and on the summer solstice when solar radiation is maximum.

While Grace Ultra and Grace Ice & Water Shield HT are formulated to provide the highest factor of safety under extreme temperatures, in many roof constructions temperature of the underlayment would be less than the case above. Lighter roof colors, an air space or insulation over the GCP underlayment, and roof ventilation will all significantly mitigate the temperature the membrane will experience. Also, the roof may be subjected to extreme climatic conditions for only a small fraction of its useful life. Therefore, in most cases Grace Ice & Water Shield, Grace Select, Grace Roof Detail Membrane, Tri-Flex and Grace SYN 15 exceed the in-place performance temperature requirements and provide an appropriate factor of safety.

Not all self-adhered membrane materials are designed and manufactured to work in hot climates or in high temperature roof constructions. Grace Ultra, Grace Ice & Water Shield, Grace Ice & Water Shield HT, Grace Select and Grace Roof Detail Membrane have been formulated specifically for performance at rooftop temperatures.

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