

Rigid Roof Insulation Boards and Grace Underlayments

Technical Letter 13

In recent years construction schedules and building assemblies have become more complicated. This has resulted in more projects being built during cold weather months and more complex roof/insulation assemblies.

Common applications of GCP's self-adhered underlayments to rigid roof insulation include vapor barriers and as a temporary roof covering, while waiting for delivery of metal roof systems.

When a GCP self-adhered underlayment (GRACE ICE & WATER SHIELD®, GRACE ICE & WATER SHIELD®HT, GRACE SELECT™, GRACE ROOF DETAIL MEMBRANE™ or GRACE ULTRA™) is applied to a structural roof deck, the deck acts as a heat sink. Excess heat build-up in the membrane is transferred to the structural roof deck. On the contrary, when a GCP underlayment is installed directly to rigid roof insulation (under a metal roof covering), there is little or no heat sink effect and, therefore, excess heat is not transmitted through the membrane. Under such conditions, which usually occur in warmer climates such as the desert southwest or at high altitudes, it is recommended that Grace Ultra be used for improved thermal stability.

Grace Ultra and GRACE ICE & WATER SHIELD®HT are the only GCP underlayments recommended for installation directly to rigid roof insulation in the desert southwest United States or at high altitudes.

Adhesion to rigid roof insulation boards varies. Porous and dusty surfaces such as Perlite Board, wood fiberboard and some of the glass scrim, provide poor initial adhesion. The use of a primer, such as Perm- A-Barrier®WB Primer will help adhesion to these surfaces. If the primer is necessary, it should be applied at the rate of 250–350 ft²/gal (6–8 m²/L). PERM-A-BARRIER®WB Primer is slippery when wet. Allow the primer to dry thoroughly before walking on the insulation surface. Dust free, smooth insulation facers, such as foil asphalt impregnated glass scrim and some of the papers, provide the best initial adhesion. The choice of the insulation board or use of a primer is the responsibility of the specifier. GCP recommends using an insulation board that provides the stability and an I-60 wind uplift.

Cover the exposed membrane with roofing material as soon as possible. When the underlayment is adhered to roof insulation, exposure times may shorten and minimum application temperatures may become more critical.

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