

TL-0006 — In-Place Performance Temperatures Technical Letter

GCP's self-adhered underlayments (GRACE ICE & WATER SHIELD[®], GRACE ICE & WATER SHIELD[®] HT, GRACE ULTRA[™], GRACE SELECT[™], GCP granular underlayment, Roof Detail Membrane[™], TRI-FLEX[®] and TRI-FLEX[®]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, Roof Detail Membrane, TRI-FLEX[®] and TRI-FLEX[®] 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 Roof Detail Membrane have been formulated specifically for performance at rooftop temperatures.

North America customer service: 1-877-4AD-MIX (1-877-423-6491)

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate, and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations, and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation, or suggestion is intended for any use that would infringe any patent, copyright, or other third party right.

GRACE ICE & WATER SHIELD, GRACE SELECT, GRACE ULTRA, Roof Detail Membrane and TRI-FLEX are trademarks, which may be registered in the United States and/or other countries, of GCP Applied Technologies Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

© Copyright 2018 GCP Applied Technologies Inc. All rights reserved.

GCP Applied Technologies Inc., 2325 Lakeview Parkway, Suite 400, Alpharetta, GA 30009, USA

GCP Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6

This document is only current as of the last updated date stated below and is valid only for use in the United States. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on www.gcpat.com. Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.

Last Updated: 2025-05-13

gcpat.com/solutions/products/grace-ice-water-shield-roofing-underlayment/tl-0006-place-performance