

# GRACE

## Construction Products

### 1. Product Name

- Grace Ice & Water Shield®
- Grace Select
- Grace Ultra

### 2. Manufacturer

Grace Construction Products  
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### 3. Product Description

#### BASIC USE

Grace underlayments are used on sloped roofs beneath shingles, shakes, slate, tile and metal roofing. These products help prevent leaks caused by wind driven rain and water back-up from ice dams in flashing areas, on roof edges, valleys, ridges and other critical areas.

Grace Ice & Water Shield® provides superior protection from ice dams and wind driven rain in severe climate areas. With RIPCORDER®, Grace Ice & Water Shield is now easier to install. This "Split Release on Demand" feature (thin cord embedded below the rubberized asphalt) allows splitting the release paper in half. Installation in detailed areas, such as chimneys and valleys, is quicker and easier. Grace Select is appropriate for use in wind driven rain applications and for ice dams where code based standards of protection are sufficient. Grace Ultra is appropriate for applications where the membrane must withstand high in-service temperatures for extended periods of time and is suitable for applications in hot desert southwestern U.S. climates or any application where superior heat resistance is a requirement.

#### COMPOSITION & MATERIALS

Grace Ice & Water Shield and Grace Select are cold applied, self-adhering membranes composed of a high strength polyethylene film coated on one side with a layer of rubberized asphalt adhesive and interwound with a disposable release sheet. An embossed, slip resistant surface is provided on the polyethylene.

Grace Ultra is a cold applied, self-adhering membrane composed of a high strength polyethylene film coated on one side with a layer of butyl rubber adhesive and interwound with a disposable release sheet. An embossed, slip resistant surface is provided on the polyethylene.

#### PRECAUTIONS AND LIMITATIONS

- Slippery when wet or covered by frost.
- Consistent with good roofing practice, always wear fall protection when working on a roof deck.
- Release liners are slippery. Remove from work area immediately after membrane application.
- Do not leave permanently exposed to sunlight. Maximum recommended exposure of Grace Select is 30 days, Grace Ice & Water Shield is 30 days and Grace Ultra is 60 days.
- Place metal drip edge or wood starter shingles over the membrane.
- Do not fold over the roof edge unless the edge is protected by a drip edge, gutter or other flashing material.
- Do not install on the chamfered edges of wood plank.
- Do not install directly on old roof coverings.
- Do not install Grace Select or Grace Ice & Water Shield in the desert Southwest. Use Grace Ultra in this climate. Check with your Grace representative.
- Grace Ice & Water Shield and Grace Ultra can be used for high altitude/alpine regions.
- Check with the manufacturer of the metal roofing system for any special requirements when used under metal roofing. Do not install directly under roof coverings especially sensitive to corrosion, such as zinc, without providing proper ventilation.
- Do not install Grace Select or Grace Ice & Water Shield under copper, Cor-Ten® or zinc metal roofing in high altitude climates. These roofs can reach extremely high temperatures due to the low reflectivity, high absorption and high conductivity of the metals. Use Grace Ultra for these roof types in this climate. Check with your Grace representative.
- Provide proper roof insulation and ventilation to help reduce ice dams and to minimize condensation. Grace underlayments are air and vapor barriers.
- Repair holes, fishmouths, tears, and damage to membrane with a round patch of membrane extending past the damaged area 6" (150 mm) in all directions. If fasteners are removed leaving holes in the membrane, it

must be patched. The membrane may not self-seal open fastener penetrations.

- Do not install fasteners through the membrane over unsupported areas of the structural deck, such as over the joints between adjacent structural panels.
- Due to its slight asphaltic odor, do not apply where the membrane is exposed to interior living space.
- Not compatible with polysulphides, flexible PVC or high concentrations of resin (pitch).
- Only Grace Ultra is compatible with EPDMs. Also appropriate for use in tie-ins in EPDM with other Grace underlayments.

### 4. Technical Data

#### APPLICABLE STANDARDS

##### ASTM International

- ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers in Tension
- ASTM D903 Standard Test Method for Peel or Stripping of Adhesive Bonds
- ASTM D1970 Standard Specification for Self-Adhering Polymer-Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
- ASTM D3767 Standard Practice for Rubber-Measurement of Dimensions
- ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials
- ASTM E108 Standard Test Methods for Fire Tests of Roof Coverings

#### APPROVALS

GIWS meets or exceeds all key code performance requirements for self-adhered underlayments.

LA City Department of Safety Report No. RR-25330, GIWS

ICC Evaluation Service (ICC-ES) - Report No. ESR-1677; Grace Ice & Water Shield, Grace Select, Grace Ultra

International Conference of Building Officials (ICBO ES) - Report No. 3997; Grace Ice & Water Shield, Grace Select, Grace Ultra

Southern Building Code Congress International, Inc. (SBCCI PST and ES) - Report No. 94133C; Grace Ice & Water Shield

Building Officials and Code Administrators International Inc. (BOCA ES) - Report No. 94-33; Grace Ice & Water Shield

Miami Dade County Code NOA 02-1113.02; Grace Ice & Water Shield

Canadian Construction Materials Centre (CCMC) - Report No. 12693-R; Grace Ice & Water Shield

U.S. Department of Housing & Urban Development (HUD) – Materials Release 1056f; Grace Ice & Water Shield

**PHYSICAL PROPERTIES**

Grace underlayments meet the physical properties and performance characteristics indicated in Table 1.

**FIRE RATING**

Underwriters Laboratories Inc. (UL)

- ASTM E108/UL 790 Class A fire classification under asphalt, glass fiber mat shingles and Class C under organic felt shingles for Grace Ice & Water Shield, Grace Select and Grace Ultra. File Number. TGDY.R13399.
- UL Classified Sheathing Material Fire Resistance Classification Design Numbers P225, P227, P230, P237, P259, P508, P510, P512, P514, P701, P711, P717, P722, P723, P732, P734, P736, P742, P803, P814, P818 and P824 for Grace Ice & Water Shield and Grace Ultra

**5. Installation**

**SURFACE PREPARATION**

Install Grace underlayments directly on a clean, dry, continuous structural deck. Some suitable deck materials are plywood, wood composition, wood plank, metal, concrete, or gypsum sheathing. For all other sheathings, contact a local Grace representative.

Remove dust, dirt, loose nails and old roofing materials. Protrusions from the deck area must be removed. Decks shall have no voids, damaged or unsupported areas. Repair deck areas before installing the membrane. Wood planks should be closely butted together.

Prime concrete, masonry surfaces and Dens-Glass Gold® with Perm-A-Barrier® WB Primer if adhesion is found to be marginal.

Apply at a rate of 250 - 350 ft<sup>2</sup>/gal (6 - 8 m<sup>2</sup>/L). Priming is not required for other suitable surfaces provided that they are clean and dry.

**MEMBRANE INSTALLATION**

Apply Grace underlayments only in fair weather when the air, roof deck and membrane are at temperatures of 40 degrees F (5 degrees C) or higher. Apply roof covering material at temperatures of 40 degrees F (5 degrees C) or higher.

Cut the membrane into 10' - 15' (3 - 5 m) lengths and reroll loosely. Peel back 1' - 2' (300 - 600 mm) of release liner, align the membrane, and continue to peel the release liner from the membrane. Press the membrane in place with heavy hand pressure. Side laps must be a minimum of 3 1/2" (90 mm), and end laps must be a minimum of 6" (150 mm). For valley and ridge application, peel the release liner, center the sheet over the valley or ridge, drape, and press in place. Use RIPCORD® to split the release paper for faster and easier installation in these detail areas. Work from the center of the valley or ridge outward in each direction and start at the low point and work up the roof.

Alternatively, starting with a full roll of membrane, unroll a 3' - 6' (1 - 2 m) "starter strip," leaving the release liner in place. Align the membrane and roll in the intended direction of membrane application. Carefully cut the release liner on top of the full roll in the cross direction being careful not to cut the membrane. Peel back about 6" (150 mm) of the release liner in the opposite direction of the intended membrane application exposing the black adhesive. Hold the release liner with one hand and pull the roll along the deck with the release liner, leaving the starter strip behind. Use the other hand to apply pressure on the top of the roll. Stop frequently to press the membrane in place with heavy hand

pressure. When finished with the roll, go back to the beginning, reroll it, and pull the remaining release paper from the material, finishing the installation.

Consistent with good roofing practice, install the membrane so that all laps shed water. Always work from the low point to the high point of the roof. Apply the membrane in valleys before the membrane is applied to the eaves. Following placement along the eaves, continue application of the membrane up the roof. The membrane may be installed either vertically or horizontally.

Use smooth shank, electroplated galvanized nails for fastening shingles. Hand nailing will provide a better seal than power activated nailing. If nailing of the membrane is necessary on steep slopes during hot weather, backnail and cover the nails by overlapping with the next sheet.

Extend the membrane on the roof deck above the highest expected level of water back-up from ice dams and above the highest expected level of snow and ice on the wall sheathing on vertical side walls (dormers) and vertical front walls for ice dam protection. Consider a double layer of membrane in critical areas, such as along the eaves or in valleys, in climates where severe ice dams are anticipated. Apply the membrane to the entire roof deck for wind driven rain protection. Apply a new layer of Grace underlayment directly over the old Grace underlayment in retrofit applications following the standard membrane application procedure. Place metal drip edges or wood starter shingles over the membrane.

**6. Availability & Cost**

**AVAILABILITY**

Strategically located warehouses and dealers stock Grace underlayments throughout North America.

TABLE 1 PHYSICAL PROPERTIES OF GRACE UNDERLAYMENTS

Property & test method	Grace Ice & Water Shield	Grace Select	Grace Ultra
Color	Gray-Black	Gray-Black	Gray-Black
Thickness membrane, ASTM D3767, Method A	40 mil (1.02 mm)	25 mil (0.64 mm)	30 mil (0.76 mm)
Tensile strength, membrane ASTM D412 (Die C Modified)	250 psi (1720 kPa)	250 psi (1720 kPa)	250 psi (1720 kPa)
Elongation, membrane ASTM D412 (Die C Modified)	250%	250%	250%
Low temperature flexibility, ASTM D1970	Unaffected at -20°F (-29°C)	-	Unaffected at -20°F (-29°C)
Adhesion to plywood, ASTM D903	3 lb/in width (525 N/m)	3 lb/in width (525 N/m)	3 lb/in width (525 N/m)
Permeance (max), ASTM E96	0.05 perms max (2.9 ng/(Pa × s × m <sup>2</sup> ))		0.05 perms max (2.9 ng/(Pa × s × m <sup>2</sup> ))
Material weight installed (max),	0.3 lb/ft <sup>2</sup> max (1.3 kg/m <sup>2</sup> )	0.14 lb/ft <sup>2</sup> max (0.7 kg/m <sup>2</sup> )	0.22 lb/ft <sup>2</sup> max (1.1 kg/m <sup>2</sup> )



**COST**

Grace underlayments are competitively priced. For specific information, contact a Grace representative.

**7. Warranty**

Grace underlayments are warranted to be free of defects in manufacture.

**8. Maintenance**

When installed in accordance with manufacturer's recommendations, Grace underlayments will not require maintenance.

**9. Technical Services**

Support is provided by full-time technically trained Grace representatives and technical service personnel, and backed by a central research and development staff. For technical assistance, call toll free (866) 333-3SBM (3726).

**10. Filing Systems**

- Reed First Source®
- Additional product information is available from the manufacturer.

W. R. Grace & Co. -Conn. hopes the information here will be helpful. It is based upon data and knowledge considered to be true and accurate and is offered for the users' consideration, investigation and verification, but we do not warrant the results to be obtained. Please read all statements, recommendations or 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 which would infringe any patent or copyright. W. R. Grace & Co. -Conn., 62 Whittemore Avenue, Cambridge, MA 02140. In Canada, W. R. Grace & Co. Canada, Ltd., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6.

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