

SECTION 073011

Roofing Underlayment, High-temperature**Grace Ice & Water Shield® HT**

Grace Ice & Water Shield® HT designed for use in demanding high temperature (HT) applications where temperature resistance up to 260F is required. Excludes applications in high altitudes where copper, zinc or Cor-Ten roof coverings will be used.

PART 1 — GENERAL

1.1 SUMMARY

- A. This Section specifies a self-adhering sheet membrane used as underlayment for sloped roofs.
 - 1. High temperature application, 260F resistance, Grace Ice & Water Shield® HT.
- B. Related Sections: Refer to the following specification sections for coordination:
 - 1. Section 061000 - Rough Carpentry.
 - 2. Section 073113 - Asphalt Shingles.
 - 3. Section 073116 - Metal Shingles.
 - 4. Section 073119 - Mineral-Fiber Cement Shingles.
 - 5. Section 073126 - Slate Shingles.
 - 6. Section 073129 - Wood Shingles and Shakes.
 - 7. Section 073200 - Roof Tiles.
 - 8. Section 076100 - Sheet Metal Roofing.
- C. Referenced Standards: Comply with the requirements of the following standards published by ASTM International to the extent referenced in this section.
 - 1. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
 - 2. ASTM D461 - Standard Test Methods for Felt.
 - 3. ASTM D 903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
 - 4. ASTM D1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
 - 5. ASTM D3767 - Standard Practice for Rubber—Measurement of Dimensions.
 - 6. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
 - 7. ASTM G90 – EMMAqua test.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions.

1.3 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with requirements of authorities having jurisdiction and applicable codes at the location of the project.
- B. Manufacturer: Minimum 10 years experience producing roofing underlayment.
- C. Installer: Minimum 2 years experience with installation of similar underlayment.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials and products in unopened factory labeled packages. Protect from damage.
- B. Cover materials and store in dry condition between temperatures of 40 and 90 degrees F (5 and 32 degrees C). Use within one year of date of manufacture. Do not store at elevated temperatures as that will reduce the shelf life of the product.

PART 2 — PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer: GCP Applied Technologies, Inc., 62 Whittemore Avenue, Cambridge, MA 02140, Toll Free 866-333-3726, www.gcpat.com.

2.2 MATERIALS

- A. Self-Adhering Sheet Membrane Roof Underlayment: Provide Grace Ice and Water Shield HT by GCP Applied Technologies, Inc with the following characteristics:
1. Material: Cold applied, self adhering membrane composed of an innovative and proprietary rubberized asphalt adhesive and interwound with a disposable release sheet. An embossed, slip resistant surface is provided on the high performance film with UV barrier properties.
 2. Membrane Thickness: 40 mils (1.02 mm) per ASTM D3767 Method A.
 3. Membrane Tensile Strength: MD 33 lbf/in, CD 31 lbf/inch per ASTM D412 Die C Modified.
 4. Membrane Elongation: 250% per ASTM D412 Die C Modified.
 5. Low Temperature Flexibility: Unaffected at -20 degrees F (-29 degrees C) per ASTM D1970.
 6. Adhesion to Plywood: 5.0 lb/in. width (876 N/m) per ASTM D903.
 7. Maximum Permeance: 0.05 perms (2.9 ng/sqms Pa) per ASTM E96.
 8. Maximum Material Weight Installed: 0.22 pounds/sqft (1.1 kg/sqm) per ASTM D461.
 9. Service Temperature: 260 degrees F (115.6 degrees C) per ASTM D1204
 10. Compatibility: Suitable for use under all types of sloped roofing with the exception high altitude climates where zinc, copper or Cor-Ten roof coverings are used.
 11. Adhesive: Rubberized asphalt adhesive containing post-consumer recycled content, contains no calcium carbonate, sand or fly ash.
 12. Exposure: Can be left exposed for a maximum of 120 days from date of installation per ASTM G90 – EMMAqua test.
 13. Primer: Water-based Perm-A-Barrier WB Primer by GCP Applied Technologies, Inc.
 14. Code and Standards Compliance: Grace Ice and Water Shield HT meets the following requirements:
 - a. ASTM D1970.
 - b. ICC-ES ESR-3121, per AC 48 Acceptance Criteria for Roof Underlayments used in Severe Climate Areas.
 - c. Underwriters Laboratories Inc. R13399 - Class A fire classification under fiber-glass shingles and Class C under organic felt shingles (per ASTM E108/UL 790).
 - d. Underwriters Laboratories Inc. Classified Sheathing Material Fire Resistance Classification with Roof Designs: P225, P227, P230, P237, P259, P508, P510, P512, P514, P701, P711, P717, P722, P723, P732, P734, P736, P742, P803, P814, P818, P824
 - e. Miami-Dade County Code Report NOA #15-0728.11
 - f. Florida State Approval Report No. FL289-R3
 - g. CCMC Approval No. 13671-L

PART 3 — EXECUTION

3.1 EXAMINATION

- A. Prior to start of installation, inspect existing conditions to ensure surfaces are suitable for installation of roofing underlayment. Verify flashing has been installed. Starting work indicates installers acceptance of existing conditions.

3.2 INSTALLATION

- A. Installation: Install roofing underlayment on sloped surfaces at locations indicated on the Drawings, but not less than at hips, ridges, eaves, valleys, sidewalls and chimneys, and surfaces over interior space within 36 inches (914 mm) from the inside face of the exterior wall. Strictly comply with manufacturer's installation instructions including but not limited to the following:
1. Schedule installation such that underlayment is covered by roofing within the published exposure limit of the underlayment.
 2. Do not install underlayment on wet or frozen substrates.
 3. Install when surface temperature of substrate is a minimum of 40 degrees F (5 degrees C) and rising.
 4. Remove dust, dirt, loose materials and protrusions from deck surface.
 5. Install membrane on clean, dry, continuous structural deck. Fill voids and damaged or unsupported areas prior to installation.
 6. Prime concrete and masonry surfaces using specified primer at a rate of 500-600 square feet per gallon (12-15 sqm/L). Priming is not required for other suitable clean and dry surfaces.
 7. Install membrane such that all laps shed water. Work from the low point to the high point of the roof at all times. 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. Membrane may be installed either vertically or horizontally after the first horizontal course.
 8. Side laps minimum 3-1/2 inches (89 mm) and end laps minimum 6 inches (152 mm) following lap lines marked on underlayment.
 9. Patch penetrations and damage using manufacturer's recommended methods.

3.3 CLEANING AND PROTECTION

- A. Protection: Protect from damage during construction operations and installation of roofing materials. Promptly repair any damaged or deteriorated surfaces.
- B. Repair minor damage to eliminate all evidence of repair. Remove and replace work which cannot be satisfactorily repaired in the opinion of the Architect.
- C. Provide temporary protection to ensure work being without damage or deterioration at time of final acceptance. Remove protective film and reclean as necessary immediately before final acceptance.

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GCP Applied Technologies Inc., 62 Whittemore Avenue, Cambridge, MA 02140 USA.

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

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