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Grace Ice & Water Shield®

Self-adhesive roofing underlayment for premium roof leak protection on sloping timber boarded roofs.

Roof Leaks

An ice dam can form on almost any roof after a substantial snowfall. The interior heat of the structure causes snow to melt and later freeze to form an ice dam along the eaves. As more snow melts, water flows down the pitch of the roof, backs up behind the ice dam, forces its way under the shingles, through the roof deck, and into the structure.
Storms can also threaten the integrity of sloped roofs. Strong winds can lift sloped roof coverings, allowing wind-driven rain to easily get underneath and penetrate the unprotected roof decks.
Roof leaks also routinely occur in critical areas such as in valleys, around skylights, or near protrusions.
Grace Ice & Water Shield® applied in these critical flashing areas can prevent hard to correct leak problems from occurring and can help extend the effective life of the roof, since roofs generally first show their age by leaking in these areas.

Description

Grace Ice & Water Shield membrane is composed of two waterproofing materials - an aggressive rubber bitumen adhesive backed by a layer of cross laminated HDPE. The rubber bitumen surface is backed with a release paper that protects its adhesive quality. During application, the release paper is removed, allowing the rubber bitumen to bond tightly to the roof deck.The membrane is supplied in 20.9m² rolls.

Advantages

Easy to Handle and Apply: bonds firmly to the roof deck without heat or special adhesives. Watertight laps are easily formed.
Aesthetically Pleasing: Unlike other forms of ice dam protection, Grace Ice & Water Shield is concealed by the finished roofing, preserving the architectural appearance of the roof.
Seals Around Nails: The rubber bitumen layer in Grace Ice & Water Shield seals around roofing nails, resisting leakage caused by water back-up.
Dual Barrier Protection: Rubber bitumen and polyethylene are combined to form two waterproofing barriers providing maximum protection.
Membrane Will Not Crack, Dry Out or Rot: Grace Ice & Water Shield resists attacks from fungus and bacteria; maintaining its integrity for long lasting protection.
Protects Under All Standard Sloped Roof Coverings: Grace Ice & Water Shield protects under slate, tile, or metal.
Slip Resistant Surface: Grace Ice & Water Shield has a slip resistant embossed surface to maximise traction and safety for applicators.
Proven Track Record: Grace Ice & Water Shield is the leading brand in roofing underlayments with over a 20 year track record of protecting roofs from ice dams and wind-driven rain.

Design

Grace Ice & Water Shield should be used in conjunction with designs which minimise ice dam formation. In cold climates, it is particularly important to provide proper insulation and ventilation to reduce the size of ice dams and to avoid interior condensation. Cathedral ceilings must include ventilation between rafters to allow for air flow to a ridge vent. Well ventilated cold roof designs are particularly important in alpine regions to reduce the size of ice dams which could contribute to structural damage.
Several variables will influence the height of ice dams and the membrane coverage required.
1. Climate - The annual snow fall will affect the amount of membrane needed.
2. Slope - On a low slope, ice dams will extend farther inward from the roof edge.
3. Overhang - A wide overhang will require more membrane to reach the appropriate point on the roof.
4. Insulation and Ventilation - A very well insulated building with a cold, well ventilated attic will have smaller ice dams.
5. Valleys - Any valleys formed by projections such as dormers or roof direction changes are likely to trap more snow and cause larger ice dams.

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Construction Products

Supply

Grace Ice & Water Shield®	
Roll Length	22.9 m
Roll Width	914 mm
Roll Size	20.9 m^2
Packaging	Cartons
Roll Weight	27.9 kg
Rolls per Pallet	35

Physical Properties

Property	Value	Test Method
Colour	Gray-Black	
Thickness, Membrane	1.02 mm	ASTM D 3767 Method A
Tensile Strength, Membrane	1720 kN/m^2	ASTM D 412 (Die C Modified)
Elongation, Membrane	250%	ASTM D 412 (Die C Modified)
Low Temperature Flexibility	Unaffected @ -29°C	ASTM D 1970
Adhesion to Plywood	525 N/m	ASTM D 903
Permeance (Max)	2.9 ng/m^2s Pa (0.05 Perms)	ASTM E 96
Material Weight Installed (Max)	1.3 kg/m^2	ASTM D 461

Installation

Surface Preparation

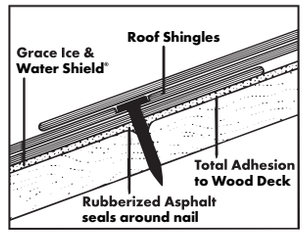
Install Grace Ice & Water Shield directly on a clean, dry, continuous structural deck. Some suitable deck materials include plywood, wood composition, wood plank, metal, concrete, or gypsum sheathing. Remove dust, dirt, loose nails, and old roofing materials. Protrusions from the deck area must be removed. Decks shall have no voids, damaged, or unsupported areas. Repair deck areas before installing the membrane. Prime concrete and masonry surfaces with Primer B1 at a rate of 10 m^2/l. Priming is not required for other suitable surfaces provided that they are clean and dry.

Membrane Installation

Apply Grace Ice & Water Shield only in fair weather when the air, roof deck, and membrane are at temperatures of 5°C or higher. Apply roof covering material at temperatures of 5°C or higher. Cut the membrane into 3 - 5 m lengths and re-roll loosely. Peel back 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 90 mm and end laps a minimum of 150 mm. For valley and ridge application, peel the release liner, centre the sheet over the valley or ridge, drape, and press it in place. Work from the centre 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 1 - 2 m piece of membrane 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 roll in the cross direction being careful not to cut the membrane. Peel back about 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 applied membrane 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, re-roll and pull the remaining release paper from the material, finishing the installation.

For successive membrane courses, align the edge of the release liner with the dashed line provided on the surface of the membrane to achieve the 90 mm side lap. Consistent with good roofing practice, install the membrane with weathered laps. 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.
Hand nailing generally provides a better seal than power-activated nailing.
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.



Seals around nails or fasteners. Fully adheres to deck, resisting leaks from wind driven rain or water backup due to ice dams.

Precautions and Limitations

- Slippery when wet or covered by frost.
- Consistent with good roofing practice, always wear fall protection and personal protection equipment 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 is 30 days.
- 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 under copper, Cor-Ten®, or zinc metal roofing. 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. Check with Grace Technical Services.
- Provide proper roof insulation and ventilation to help reduce ice dams and to minimise condensation. Grace Ice & Water Shield is a vapour barrier.
- Do not install fasteners through the membrane over unsupported areas of the structural deck, such as over the joints between adjacent structural panels.

Health And Safety

There is no legal requirement for a Material Safety Data Sheet for Grace Ice and Water Shield. For health and safety questions on this product please contact Grace Construction Products Limited.

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