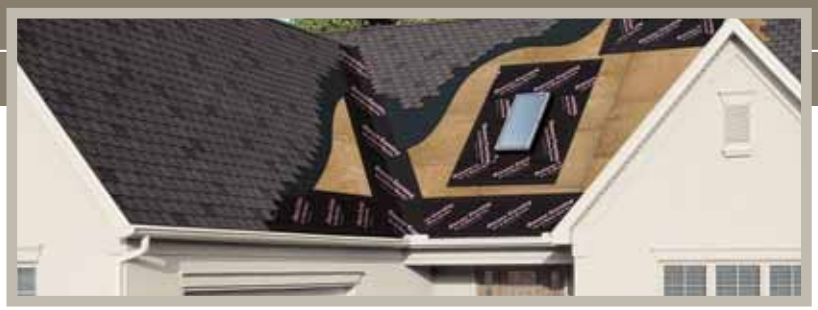
Ice and Water Barrier

From Owens Corning™ Roofing

An EDUCATIONAL SERIES on the importance of installing a complete roofing system

It takes **more than shingles** to create a high-performance roof. It requires a system of materials and products working together. This report explains how **ice and water barrier products** can be critical for maximizing the performance and beauty of your roof.

Battling Ice and Water, Preventing Leaks



One of the most disheartening moments in home ownership can occur when you find water entering your home from the roof. Water can work its way under the shingles from high wind, rain, snow, ice, or trees and leaves; causing damage to the roof structure. This excess moisture can also pass through the roof **deck** and into the home.

Reviewing this bulletin will help you:

- Understand what causes roof leaks
- Understand how to prevent leaks in your roof

Your roof is a system designed to shed water. Rain and snowmelt travel down the slopes of your roof to the gutters that collect it or carry it away. Shingles rely on the slope of the roof and gravity to move the water and keep it from entering your house.

While this process works well most of the time, the National Roofing Contractors Association (NRCA) recognizes it is possible for moisture to migrate under the shingles.

It is critical that your home be protected from natural water flow as well as the special forces of Mother Nature. If your home has trees in the landscaping, there is an opportunity for leaves to fall on the roof and clog the gutters – blocking drainage and allowing water to back up under the shingles. In addition, high winds can lift the edges of the shingles and allow rain to be forced up under the shingles causing leaks. Such leaks can be prevented by applying a waterproofing barrier on the vulnerable areas of your roof.

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Snow and ice can also create opportunities for leaks from your roof by creating an **ice dam** on your roof. Ice dams occur when snow melts near the top of warm roofs in cold weather. As the water runs down the slope to the cooler overhang, it can re-freeze. If this melt and freeze cycle continues, an ice dam can form that can force water back up under the shingles, through the decking and into your home. (For more about ice dams, see "Understanding Ice Dams" section).

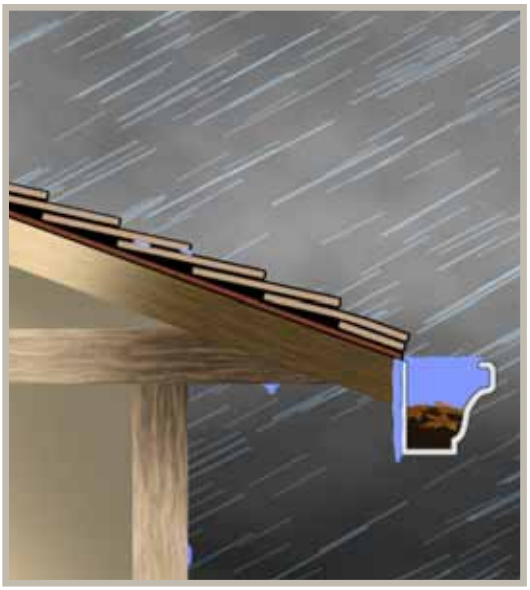
Perhaps surprising to some, the best preventive measures to ward off ice dams are a well-insulated home and a well-ventilated attic. To learn more about proper insulation and ventilation see the bulletin in this series titled "Insulate and Ventilate for Long Roofing Life."

Waterproofing Barriers 101

Although ice dams can be prevented with proper ventilation and insulation, additional protection is necessary with a waterproofing barrier that is installed on top of the decking under the shingles. In fact, if you live in an area with an average January temperature below 20°F, your building code will probably require a waterproofing barrier below the shingles along the eaves.

Waterproofing barriers are designed to be waterproof even after the roofing shingles are installed. They are nail sealable and **impermeable**, meaning they seal around shingle nails and will not allow water or moisture to pass through. In addition, the product adheres directly to the roof deck.

Waterproofing barriers are most effective when applied on the vulnerable areas of your roof system – **eaves** and **valleys**, and around penetrations in the roof such as chimneys, skylights and **roof vents**. In some areas it is becoming common practice to apply the ice and water barrier across the whole deck rather than just the vulnerable areas, thus creating a secondary water barrier under all of the shingles. Some areas of the country that are subject to severe storms already apply the waterproofing barrier across the whole deck. The advantage is that if a storm blows off the shingle, the waterproofing barrier can protect the home from leaks for an extended period of time.

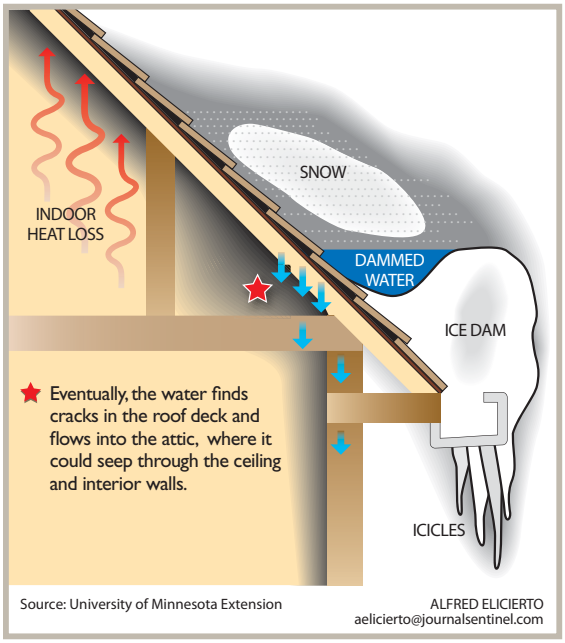


Owens Corning™ Roofing offers a complete line of WeatherLock® Self-Sealing Ice & Water Barriers to help meet your leak protection needs. Each WeatherLock® product is formulated for various applications and preferences. For more information, visit www.Roofing.OwensCorning.com.

Understanding Ice Dams

Three conditions are needed to form an ice dam:

- Snow
- Heat to melt the snow from the attic space below
- Cold to refreeze the melted snow



Ice dams develop as snow on the upper part of the roof melts and water runs down the slope and refreezes into a band of ice at the roof's lower edge creating a "dam." Additional snow-melt then pools against the dam and can eventually leak into the home.

The upper surface of a roof is located directly above the living space. Heat lost from the house warms this section of the roof and melts the snow above. During periods of sub-freezing temperatures, the lower portions of the roof deck are not warmed by indoor heat-loss and remain at sub-freezing ambient temperatures.

Ice dams can form when as little as one or two inches of snow accumulate on a roof if the snowfall is followed by several days of sub-freezing temperatures. Deeper snow and colder temperatures increase the potential and size of ice dams. Snow that accumulates on the roof's surface can insulate the deck, trapping indoor heat beneath the deck. Colder outdoor temperatures can produce a fast and deep freeze at the eaves, so the worst ice dams usually occur when a deep snow is followed by especially cold weather

Key questions to ask your contractor for a quality roofing job:

- Do I have a balanced attic ventilation system that is designed to prevent ice damming?
- What are you applying under my shingles to prevent leaks into my home?

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Glossary

Deck	Surface installed over the framing on which shingles are installed, typically oriented strand board (OSB) or plywood.
Eave	The horizontal, lower edge of a sloped roof.
Ice Dam	A mass of ice along the overhang of a house where the roof transitions from a warm to a cold surface; the ice is typically formed by refreezing snow-melt and can cause water to back up under roofing materials.
Waterproofing Barrier	Material that serves as an ice and water barrier. Stops movement of moisture from below the shingle to the roof deck.
Impermeable	Not allowing the passage of fluids; not permeable.
Roof Vents	Outlets for air that protrude through the roof deck such as a pipe or stack.

Symbol Key


Important


Approved Product


Expert Opinion


Warning

Do It Right

Replacing a new roof is something most homeowners do only a few times in their lives. Do it right, and you will add decades of beauty, comfort and energy efficiency to your home. If done wrong, you may end up multiplying your initial investment in repeated repair costs.

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Pub. No. 10012243. Printed in U.S.A. August 2010.