

SERVICE WORKS

"UP ON TOP" NEWS

The Negative Effects Of Ponding Water

Ponding water can have negative consequences, regardless of the type of roofing system. Proper design, installation, and maintenance of the roofing structures can prevent the condition and its associated problems.

Ponding water is defined as the water that remains on the roof 48 hours or more. The Asphalt Roofing Manufacturers Association has been joined by many reputable organizations, such as the National Roofing Contractors Association (NRCA), the Mid-West Roofing Contractors Association, and the American Institute of Architects, in recommending that roof designs provide adequate slope (minimum 1/4" per foot) to ensure that the roof drains freely throughout the life of the building and to thereby avoid the effects of ponding water.

The known adverse effects of ponding water on roofs include:

Deformation of the deck structure

Ponding water can substantially increase the load on roof decks. As water accumulates, deck deflections can increase, thereby resulting in additional ponding water which could compromise the structural integrity of the deck.

Penetration of moisture through the membrane into the roof system

Allowing even relatively small amounts of moisture to collect beneath the roof membrane may reduce the thermal efficiency of the insulation. More importantly, this can cause serious damage to the deck, insulation and membrane, as well as the building's interior.

The growth of algae and vegetation

When water stands for long periods of time, algae and vegetation growth will likely occur, and may cause damage to the roof membrane. Additionally, vegetation and other debris can clog drains and cause additional ponding, accelerated erosion, and deterioration of the membrane.

Low slope roof systems contain membranes intended to be water impermeable coverings. A waterproofing system, on the other hand, is designed to withstand hydrostatic pressure resulting from standing or ponding water. Roof systems generally are not designed as or intended to serve as waterproofing systems.



To ensure positive drainage, a properly designed roof system should have a nominal slope (typically either 1/8" or 1/4" in 12"). The design should take into consideration the structural framing, deck type, expected deck deflection, drain locations, overlayment materials (gypsum board, insulation, etc.) membrane type, penetrations, potential blockages, and overall building/roof layout.

Assessing these factors will help to determine the methods for achieving positive drainage, whether a new or replacement system is being designed.

Ponding water may not be defined in a manufacturer's warranty. Some warranties state that damages resulting from ponding water are not covered. Any time or size limits describing the condition should be noted in the warranty. Problems that arise from ponding water may be excluded or not covered by the manufacturer.

Ponding water can be controlled or eliminated using tapered insulation systems, strategically placed internal drains, or a structurally sloped substrate.



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