# technical bulletin

Asphalt Roofing
Manufacturers Association

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# *The Effects of Ponding Water*

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

Ponding water is defined as the water which remains on a roof 48 hours or more. The Asphalt Roofing Manufacturers Association has been joined by many reputable organizations, such as the National Roofing Contractors Association, the Mid-West Roofing Contractors Association, and the American Institute of Architects, in recommending that roof designs provide adequate slope (min. ¼" 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 includes:

- **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.
- **Damage to the roof surface attributed to freeze/thaw cycles:**
  Ice formations develop and move constantly with changes in temperature. This movement can “scrub” the roof membrane to such an extent that considerable physical damage to the membrane may occur.
- **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.**

To obtain specific information regarding the effects of ponding water on particular products and systems, contact the individual roofing material manufacturer.



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