

# Use as an Air and Vapor Barrier

## Technical Letter 2

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GCP's self-adhered underlayments (Grace Ice & Water Shield®, Grace Ice & Water Shield®HT, Grace Ultra™, Grace Select™, Grace Basik® and Grace Roof Detail Membrane™) are excellent air and vapor barriers. When used in full roof coverage applications, adequate ventilation must be provided in the roof design to avoid condensation problems within the roof structure or the attic space. Ventilation is necessary in all climates and is critical in warm, humid areas.

Proper roof ventilation and insulation design should be left to a qualified design professional and care should be taken to comply with local building codes. However, standard roofing practice is to use 1 ft<sup>2</sup> (0.093 m<sup>2</sup>) of net free ventilation area per 150 ft<sup>2</sup> (14 m<sup>2</sup>) of attic space, split evenly between the ridge and soffit vents. Soffit, ridge, gable or roof deck vents may be used alone or in combination depending on the specific roof design. Soffit and ridge vents used together provide the most complete ventilation and is the preferred ventilation configuration. Gable vents are sometimes used but are not usually as effective as ridge vents.

Failure to properly vent roof structures can cause water vapor from building interiors to condense within the roof structure or in the attic. This occurs most readily in warm, humid climates. Condensation can wet the insulation reducing its effectiveness, dampen wooden structural components, and can actually cause the roof to appear as though it is leaking even when there is no precipitation. In the worst case, neglecting ventilation issues can cause premature failure of structural components and can void various building component warranties.

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