

Sealing of Fasteners Penetrating Air-Bloc Liquid or Blueskin® SA Air Barrier Membranes

Discussion:

The optimum building design would have no fasteners or other penetrations through the continuous air barrier membrane. This is not found in most buildings today. Many have self-tapping screws, bolts, masonry anchors or other fasteners securing a variety of structural components to the building including hat channels, Z-furring strips, shelf angles, etc. These penetrations and fasteners need careful design and sealing detail by the installing contractor to assure a functioning air barrier system.

Henry® Air Bloc or Blueskin® SA products exhibit "self-gasketing" properties, which refers to the membrane's ability to be cut by the threads of a self-drilling screw, then seal under compression (i.e. the head of screw compresses the membrane as it is seated providing a positive seal). The ability of the membrane to provide this gasketing effect is a result of the thickness of the membrane and the elastic properties built into the product when dried. Depending on which Air-Bloc or Blueskin SA product is being utilized, the dry film thickness can range from 47 mils up to 200 mils.

Drilling a hole through Air Bloc or Blueskin® SA products then applying a bolt or fastener does not necessarily yield this 'self-gasketing' property found with screws because the membrane is cut by the drill, and substrate cuttings are deposited by the drill onto the membrane surface – leaving in a sense, a dirty hole. Compression alone by a bolt may not assure a proper seal. In this detail, a primary sealant - compatible with the dried air barrier membrane – needs to be applied after the hole is cut and cleaned. Proper detailing of each penetration is obviously critical to maintaining a functioning air barrier. Sealant options vary depending on the membrane, but can include a small amount of the primary liquid Air-Bloc material, BES Sealant, or Henry #570 Polybitume depending on the specific detail involved.

Henry materials are not considered 'self-sealing' or 'self-healing' since that implies that, if a fastener is installed and subsequently removed, the penetration can seal itself shut. This is not the case with Henry/Bakor membranes; therefore, screws or fasteners that do not hit a stud or strip-out during installation need secondary sealing of the hole or fastener. In all cases, care should be taken to ensure that fasteners are not over-tightened to the point of stripping through the sheathing or tearing the air barrier membrane.

Because there are so many different types of fasteners and methods of installation, we suggest that a simple field test be conducted with the proposed fastener to ensure that the Air-Bloc or Blueskin® SA provides a proper seal. Note: Henry recommends all fasteners penetrating Blueskin® Breather be wet sealed to insure proper performance.

If, following a field trial, there is still concern over of the ability to provide an adequate seal, the fasteners may be "wet-sealed" (i.e. a small amount of Air-Bloc or Henry 570-05 Polybitume sealing mastic may be applied to the shaft of the screw prior to driving in place) or the screw head can be "buttered" or sealed in place after installation.

Please contact our Technical Services Department for additional information at 800-486-1278.