

What's Happening in Masonry

by: Gary Porter



How to Install Flashing & Weeping

This spring, Chicago has had a damp and cooler than normal period. Our office has had several calls related to moisture penetration. The cause for moisture penetrating the walls of our masonry structures may lie in the flashing and weeps.

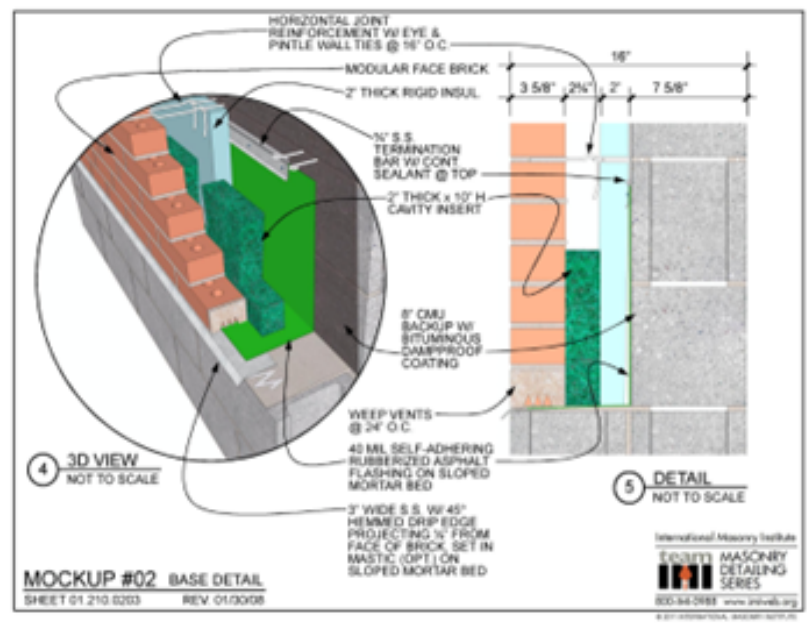
First off, we know all masonry, brick, concrete block, stone, thin veneers and mortar are going to let water through the outer wythe. The TMS 402 code, Building Code Requirements for Masonry Structures and Commentary states a General Design Requirement: Design and detail flashing and weep holes in exterior veneer wall systems to resist water penetration into the building interior. Weep holes shall be at least 3/16" (4.8mm) in diameter and spaced less than 33 in. (838mm) on center.

On one particular job we saw, the weep ropes used were not letting the water drain from the cavity wall. Some weep rope used for these are not 100% cotton, so they do not wick moisture away as intended. The design was good! The material used was not so good.

A cavity wall is probably the best type of masonry wall. This cavity wall had an outer wythe of 4" of brick, 1" airspace, 1-1/2" of rigid insulation and 8" concrete block.

After further investigation, the cause of water leaking into the structure was two fold. There was no mastic, or not enough mastic, at the lap splices in the flashing. Because the weeps

were not draining the cavity effectively, water built up in the cavity, the lap between the flashing failed, causing water to leak into the structure.



How to Install Flashing & Weeping (cont.)

The design intent of a cavity wall is not to hold water but to resist water. The recommendation for weep holes going forward should be to either leave the head joint open, use a weep vent or a weep mesh vent. (see pictures) Rope weeps may contribute to moisture problems, as was the case in this project.

Another suggestion for a project that you suspect the weep ropes may be a cause of moisture build-up would be to carefully drill a 3/8" hole in the mortar joint above the weep rope. Keep the drill at a slight angle up so that the flashing does not get penetrated. Don't drill too deep! You will probably be able to pull the weep rope out of the mortar joint so water can drain freely.

The flashing is probably one of the most important parts of a masonry wall. Flashing needs to be installed correctly and per the manufacturer's instructions. A stainless steel drip edge needs to be caulked to the foundation. It is typical to prime the surface before a sticky backed 30 or 40 mil flashing, with mastic installed at laps per manufacturer's instruction get attached to the substrate. A termination bar needs to be installed (that means anchored per manufacturer's instructions and caulked properly) to insure the flashing stays in place. It is necessary to install a mortar collection device at the base of the wall and at the heads of openings so the weep vents can work correctly and drain. The weep vents need to be spaced per the TMS 402/602 Code.

How to Install Flashing & Weeping (cont.)



An end dam is a must have at heads of openings where the flashing terminates. If you read our newsletter regularly, you already know about end dams! ([End Dams - Do you need them?](#) January 2017).

Maybe builders and owners should request a picture of all flashing installations be submitted and approved before the masonry gets installed over it? Adding this simple step as a preventive measure would enable us to see problems before they occur.

If you have questions or need help with a masonry issue, contact the Masonry Advisory Council at 847-297-6704.