



## **Intrusive Inspection Report**

Re: Chronic water leak

### ***History:***

DOP: 2006/01

Home owner reports that the builder has failed to repair a chronic water leak at the top of the foundation wall, as seen from the basement area. After completing a basic water test, it is readily apparent that the home owner is correct. The water leak was pinpointed and the lower courses of brick were removed in the suspect area.

### ***Observations:***

1. The most apparent problem was that the flashing did not extend past the exterior of the foundation. It was at least an inch from the outside of the foundation. This is a building code infraction. A min of  $\frac{1}{4}$ " projection past the exterior of the foundation wall is required (9.20.13.6). See picture below.





The importance of this becomes apparent when I did the water test. Using just a water hose I ran water into the air space, behind the brick, through the weep holes above the patio door. After only a couple of minutes, water started to seep into the suspect area. It ran down the exterior of the flashing (as it should) and began to puddle on the foundation wall just past the limit of the flashing. See picture below.

The foundation wall is not perfectly formed at the top, and in the suspect area, slopes to the inside. As a result, water did seep under the flashing and back into the house, rendering the flashing useless.



2. The next observation was the destruction of the flashing by drilling out the weep holes by the builder as an attempted repair of the problem. (See first picture) The weep holes are required by code (9.20.13.8) to allow moisture to escape the wall cavity to the exterior of the home. However, the holes on this house are poorly formed and blocked with mortar. This is why they were drilled out by the builder. This process actually did more damage than good by destroying the flashing material.



3. The flashing material was cut to go around the corner, providing an area without any protection. This is evident in the above picture.

***Conclusion:***

The flashing material was not installed to code in this home. Also the required weep holes were poorly constructed and blocked with mortar. The top of the foundation wall slopes to the inside of the building. These problems resulted in a water penetration problem.

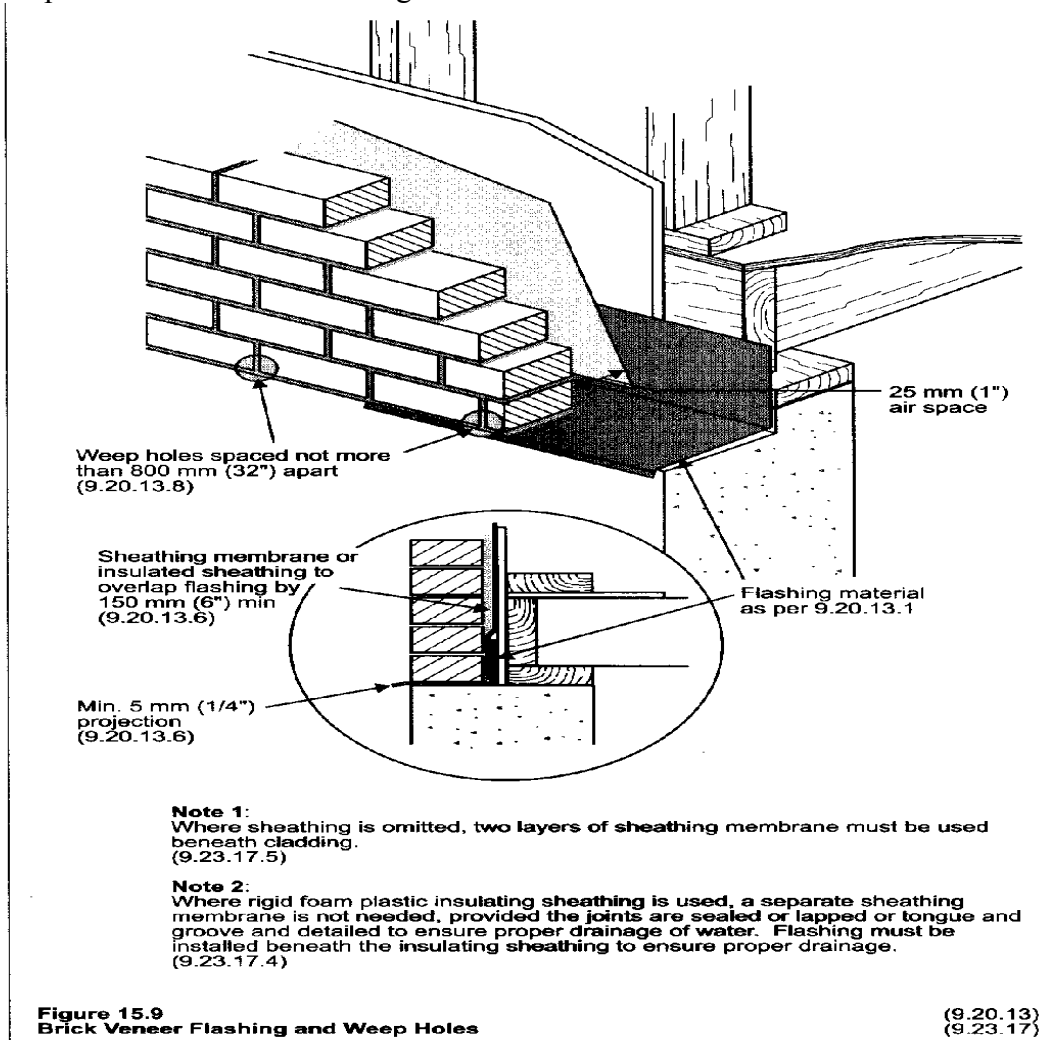
The attempts to repair it by the builder, without removing the brick were unsuccessful, due to the inability to extend the flashing material past the foundation wall without removing the brick.

The builder's attempts to seal the brick, with liquid silicone, did not stop the water from penetrating into the air space from weep holes above the doors and windows. At best, this procedure is a temporary solution to water leak problems due to the need to reapply to sealant every few years.

It is the Builders responsibility to install the flashing to code. It should extend ¼" past the foundation wall when the job is complete. In circumstances where there is no brick ledge at the top of the foundation wall this becomes critical.



Excerpt from the Ontario Building Code.





***Repair Procedure:***

**Note:** I have repaired the flashing in the test area, but this needs to be done everywhere there is no brick ledge. (Back 1/3 of the house)

Remove the lower 3 courses of brick in the effected area.

**Caution:** This must be done in maximum 4' sections in order maintain bearing on the foundation wall for the upper courses of brick. Once the complete repair is completed in a section and the mortar is cured, it is safe to continue the flashing repair on the adjacent section.

Clean repair area well. Seal the original flashing with tar where the flashing meets the concrete, paying particular attention to the corners and any cut/damaged areas; coat it well. Use peel and stick flashing material (Blue-Skin or equivalent) and apply it over the existing flashing, making sure to lap it under the building paper. It must extend a minimum of 1/4" past the exterior edge of the foundation wall. Seal it thoroughly to the existing flashing material.





Overlap the flashing material in the corners. Do not just cut the material to go around the corner. Trim off excess material, keeping the minimum 1/4" overhang in tact. (Last picture)

