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Water Damage Inspection

By

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Subject

Participation in a lawsuit inspection involving all contractors of a six year old home that had water damage in the daylight basement level. The purpose of the inspection was to verify the cause of water damage and determine the likely contribution resulting from the installation of insulation by the insulation contractor.

Home Inspection

The inspection of the home began outdoors on the east side. Figures 1 and 2 show the east side of the house, and the location where the ground had been excavated.

Figure 1 – North and East Side of the Home

Figure 2 – East Side of the Home

Two excavation pits had been made on the east side of the home to uncover the exterior drain tile. The first was in the area of the bay window, Figure 2. Figure 3 shows the tile, and the gravel that was put into the bottom of the trench and over the tile. The tile had been covered with a fabric material to prevent silting into the tile. The fill over the gravel was most likely heavy clay soil from the basement excavation.

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Figure 3 – Drain Tile, East Side of the Home

Figure 4 – Pit, Southeast Corner of the Home

Figure 4 shows the second pit which was at the southeast corner of the home. There was no evidence of any tile or gravel fill at this location. This pit was shallow, only about a foot deep, but down to the level of the tile shown in Figure 3.

Another excavation was made on the southeast side of the home, Figure 5.

Figure 5 – Excavation Pit Location, South Side of the Home

Figure 6 – Excavation Pit South Side of the Home

An excavation pit was dug on the south side of the home to uncover the drain tile. Figure 5 shows the location of the excavation pit, and Figure 6 shows the pit. There was no tile was found at this location.

There was a large excavation on the west side of the home, Figure 7. Figure 8 shows the end of the drain tile at the southwest corner of the home. The drain tile appears to have been about one foot below grade at the southwest corner. The tile ended at the corner and there was no evidence as to where the tile drained, or of provision for water drainage from the tile.

Figure 7 – Excavated Area West Side of the Home

Figure 8 – End of Drain Tile Southwest Corner of the Home

Figure 9 – Drain Tile West Side of the Home

Figure 10 – Drain Tile West Side of the Home

Figures 9 and 10 show where the drain tile had been uncovered along the west side of the home. There did not appear to be any problems with the tile installation at these two locations.

Figure 11 – Crack in Block Foundation West Side of the Home

Figure 11 shows a crack in the block foundation. The tubing hole for the air conditioning unit may have contributed to the block cracking. There was evidence of water leakage in the northwest bedroom on the inside of the foundation wall at this location

Figure 12 – Sump and Sump Pump

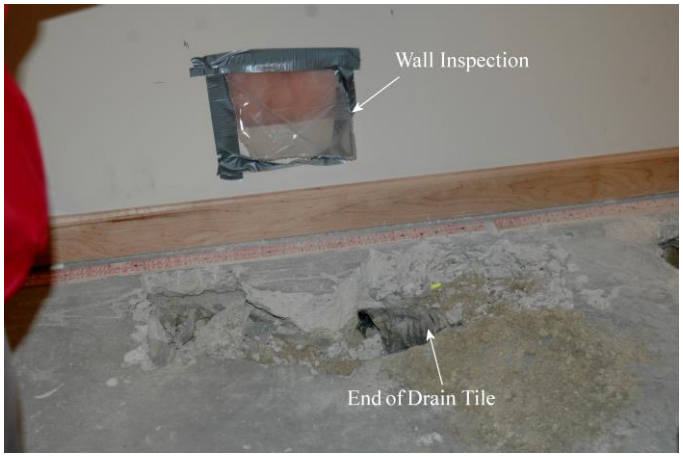

Figure 13 – West Drain Tile along Inner West Wall in Northwest Bedroom

Figure 12 shows the interior sump and sump pump. There are two tiles entering the sump. The upper left-hand tile apparently runs along the north side of the house to the west, and the lower right-hand tile

apparently runs along the north side of the house to the east. The sump pump was added this year. The home's owner said that they had been told that they would not need a sump pump, because the tiling was so good. The sump was present, but there was no discharge provided for the pump.

Figure 13 shows the end of the drain tile in the northwest basement bedroom along the inner west wall of the foundation. This location was approximately the center of the window shown in Figure 11. The sheet rock had been cut to inspect the vapor barrier and insulation, which appeared to be in order.

Figure 14 – East Drain Tile, South Wall

Figure 15 – End of East Drain Tile, South Wall

The drain tile running from the east end along the south wall in the family room is shown in Figures 14 and 15. The drain tile ended about 4 feet from the southeast corner.


Figure 16 – Water Damage to Basement Woodwork


Figure 17 – Water Damage to Basement Woodwork

The water damage in the basement appears to be very limited, Figures 16 and 17 showing typical staining of the woodwork.

The basement concrete slab had been saw-cut to minimize cracking of the concrete. The concrete was not reinforced, and the slabs formed by the saw cutting may have moved slightly in relationship to each other.

There was water damage to the ceiling in the southwest basement bedroom, Figure 18. The master bathroom is located above the southwest basement bedroom. There was clear evidence of cracking in the shower floor tile grout lines, Figure 19. The shower in the master bathroom is very likely the source of water in the ceiling in the basement southwest bedroom. Cracking along the grout lines was the result of improper installation of the shower by the plumbing and tiling contractor.

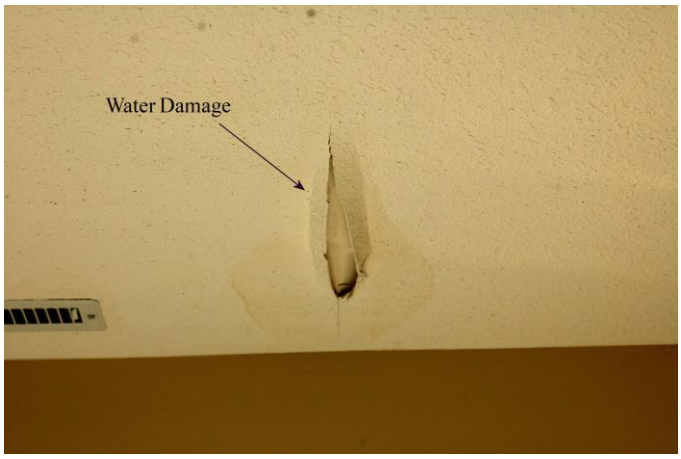

Figure 18 – Water Damage Ceiling, Southwest Basement Bedroom

Figure 19 – Cracks in Grout, Master Bathroom Shower, Main Level

Opinion

Based on the evidence available for examination during my inspection of the home, I concluded that the water leakage and water damage were not caused by any work performed by the insulation contractor. It is my opinion that the water damage was caused by incomplete drain tiling on the exterior and interior of the basement. It is also my opinion that the water damage to the ceiling in the southwest bedroom is the result of cracking in the master bathroom shower floor tile grout, and was not caused by the insulation contractor, but improper installation of the shower. There were structural problems noted during the inspection; shifting of the basement slab at the saw cuts, and also noted were sags in the roof sheeting, indicating missing or defective roof trusses, which also were not related to the work performed by the insulation contractor.