Keeping Basements Dry

By Rick Bunzel, Mountain View Property Inspections

Today homeowners try to utilize every inch of space in their home and many are turning basements into additional bedrooms, recreation and media rooms. Technological advances in the last 15 years now allow most modern basements to be made into comfortable, livable space. However, all basements are vulnerable to some water penetration and soil issues during their lifespan.

Most homeowners regard a dry basement as a reasonable expectation, but unfortunately, practice doesn't always follow design. One of the most frequent homeowner complaints to builders is about moisture in the basement. For home inspectors this is also an issue as we are expected to detect leaky basements. Unfortunately many of the components of a dry basement such as the drainage systems and exterior basement walls are not visible to us so we have to rely visible signs to determine the performance of these systems.

Contrary to logic, the last thing most owners do to keep water out of the home is one of the most important. Waterproofing begins with landscaping. The most critical thing is that the ground must slope away from the foundation so that water will not be trapped against the home. It's pretty amazing how many homes we see with a reverse slope. Sometimes it's unavoidable but in many cases builders leave it to the homeowner to figure it out and then they defer to the landscaper who may not be qualified.

Most contemporary homes now have some type of exterior moisture controls. The black "tar like" product that is applied to basement walls is called damp-proofing, as it provides only a minimal level of moisture resistance. Builders who want to waterproof the walls will add of barrier of 4-10 mil plastic, rigid insulation board or spray on a coating of waterproofing material. This will direct the water to the drainage tile, which if the elevation is right direct the water away from the home but most frequently to a sump in the basement or crawl space.

In Northern Colorado, as well as many other areas in the U.S., we have expansive soils, which represent as significant a problem as wet basements. In fact in many cases the issues go hand in hand. I have seen as much as 8" heaving in basements. In many cases the expansion is a result of excess water under the foundation. However not all cracks indicate expansive soil. Often basement wall and floor cracks are nothing more than hairline fractures caused by shrinkage due to the curing process of concrete. If the cracks are less than 1/4" in width, these cracks are usually insignificant. However, if these cracks leak water or if they appear to widen as time passes, it can be an indication of a

developing problem. Many builders are now including structural or raised floors in basements. Wood, steel and concrete structural basement floors have been around for several years. However this type of flooring system was not without it own problems. Most relate to inadequate lateral support, inadequate under floor ventilation to maintain a dry crawl space and inadequate clearances to wood and steel structural members. We have found that builders have different opinions and approaches as to how to control moisture and how ventilation should be addressed. Today most building departments are requiring a vapor barrier and mechanical ventilation system.

If your home is equipped with a drain sump, you will want to check it in after a heavy snow or rain. Most sumps will have some water in them and that is normal. If the water is within several inches of the rim, you will want to consider the addition of a sump pump. This pump will drain water out the sump to outside or to the sewer system of the home. If you notice a moldy smell in the sump, add a little bleach to the water to kill the mold or mildew in it. For homes that have groundwater seeping up through the foundation, homeowners may try to address the problem by waterproofing the interior walls and floors. This type of waterproofing will work for minor leaks only. Once the water pressure builds, it will find a weak spot and leak through. If the leak is serious they are a number of companies that can be contracted to re-engineer the home drainage system.

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