



## A Brief Guide to Understanding Moisture and Water Intrusion in Stucco and EIFS



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Today's media is very good at informing the public of potential moisture intrusion issues. However, the media also seems to be interested in presenting only the worst or most extreme cases. Because of this, many home and building owners are confused about moisture and water intrusion. While severe cases do exist, not all moisture intrusion issues are severe and extreme. Not all moisture issues result in toxic mold, structural defects and expensive repairs. **The key to preventing major damage is discovering the problem early** and having it repaired.

**The Facts:** Homes and buildings constructed since the mid 1980's have an increased risk of containing abnormal moisture in wall cavities. Some studies suggest the risk may be as high as 90%. The City of Woodbury, MN has taken major steps to study and document moisture issues and their findings continue to be stunning. As of October 2007, 58% of stucco homes in Woodbury have failed and been repaired. Of repairs completed since 2000, 11% have failed again. Significant building code changes took effect in 2000 and were intended to fix the problem, but moisture intrusion issues continue.

**The Cause:** Certain types of siding material, especially stucco and EIFS (exterior insulation and finish system) together with improper methods of installation appears to be a major contributing factor. Poor assembly of wall, window, and roof systems can be another cause. Poor grading or ground contact can be another cause.

**Testing:** Moisture testing will confirm the presence or absence of abnormal moisture. Moisture testing and evaluation requires special equipment. This type of testing is usually not part of a common home or building inspection, but is available at additional cost. The building owner will be asked to sign an agreement authorizing moisture testing. In stucco, two small 1/4" holes will be created at each test location and probes inserted into the wall cavity. Holes in EIFS may be smaller. Moisture will be measured at multiple depths and the numerical moisture reading will be recorded in a moisture analysis report. The number of tests performed is dependant on the size, design and features of the building. A moisture analysis report will describe areas that were tested and digital photos will cross-reference those areas. Depending on the circumstance, test results more than 12 months old should not be relied upon and retesting is recommended.

**The Numbers:** Moisture levels under 10 % WME (wood moisture equivalent) are considered to be normal dry readings. Moisture levels between 10 and 15% are not unusual. Moisture levels between 16 and 19% indicate abnormal moisture intrusion and modifications of the siding or flashing will be needed to reduce moisture levels. Moisture readings over 19% are considered to be excessive and may be sufficient to allow mold growth and structural damage. If levels exceed 19% and wall sheathing is undetectable or soft, the wall assembly may need to be opened and examined for further structural damage. If a decision is made to open the wall, other contractors will need to be involved. Home Inspections of Minnesota does not provide repair or construction services. However, we are happy to consult with your contractor and help design the nature of repairs and to confirm the work is properly completed.