

## Stucco Homes & Real Estate Sales

There has been new information released about stucco and the impact it is having on homeowners buying & selling stucco clad homes. Stucco is a great cladding material. It's durable, comes in many colors and textures, and provides a high-end appearance for a home thereby increasing curb appeal and the value of the home. When applying stucco, strict attention needs to be paid to water management. Flashing details & water management are the keys to a properly performing stucco or stone veneer system.

Stucco is made up of Type I & Type II Portland Cement, which is a porous material. It is designed to allow water to be absorbed or pass through, and the WRB (Weather Resistive Barrier) behind the stucco is designed to drain water away from the underlying substrate on the building. Substrate is the wood or sheathing material under the stucco. Unfortunately, due to improper flashing techniques, improper installation of the underlying WRB, lack of communication among the Trades, and lackluster inspections by local Municipalities, many of our homes have been leaking and are in poor condition.

Water entry behind the stucco can cause deterioration (rot) of the underlying wood substrate allowing water to wet the insulation, framing members, and drywall in our homes. This type of damage goes undetected until an inspection is performed, and consequently is all having a negative impact on the resale value of these homes.

Stone veneer systems are "direct attach" reservoir systems just like stucco, and are experiencing the same leaks & challenges as such. Evaluations for these systems are performed in the same manner as stucco. Brick & Full dimension stone systems are designed with a minimum 1" air gap, and are not direct attach systems. They have their own footing to carry their weight. These systems have their own unique way of being checked, and for the purpose of this discussion, we will be focusing only on stucco & stone veneer systems.

Hardcoat stucco (real stucco) should consist of 3 layers; scratch coat, brown coat & topcoat. The total thickness should be 7/8", with an additional two layers of WRB protection. Unfortunately most of the systems installed in the Northeast consist of only 2 layers of stucco that end up being 1/2" thick or less, with only one layer of WRB (Weather Resistant Barrier). I have inspected systems as thin as 1/8" thick. The lack of the 3<sup>rd</sup> layer helps cracks transmit faster to the exterior.

Below are examples of flashing details that help keep water from getting behind the stucco:



Kickout Diverter



No Kickout Diverter



Head Flashing & Soft Joint



No Head Flashing & Soft Joint

Homes in the Northeastern part of the country are usually framed in wood. The temperature extremes here can cause expansion & contraction of wood framing members, which open & close gaps around windows, doors & other penetrations into the stucco system. With a lack of proper flashing details, it was found that over 50% of leaks in homes are from improperly flashed windows, and 30% of leaks in homes are caused by lack of flashing details known as “kick out diverters”. Kick out diverters is installed at roof/wall intersections to push rainwater out into the gutter, and away from walls. The stains you see under gutters, at chimney/roof intersections & under windows could be an indication of moisture penetration; not always, but it is a sign to look closer at that area.

The media has been putting out a lot of information recently about stucco homes; some is correct and some is not. Stucco clad homes in the Northeast Region of the United States began to receive attention after Joe Lstiburek, PH, D., P.Eng. Fellow ASHRAE from Building Science Corporation wrote an article in 2010 entitled: Stucco Woes, The Perfect Storm. This article describes the lengthy number of installation deficiencies that occurred while contractors & builders were applying stucco to homes in the Northeast during the construction boom of the 90s and beyond. In this article, Eastern PA was given the unpleasant title of: Stucco Failure Capitol of the United States. Local news stations did stories in 2012 & 2013 on the stucco failures occurring in Eastern PA, and as a result, Relocation Companies now require invasive testing of all homes whether for a seller or buyer. Banks & Real Estate Appraisers are also getting involved, and are asking questions as part of the Real Estate sales process.

## **Selling Your Stucco Home: Be Pro-Active Not Reactive**

“With all the news about stucco, what can I do to make sure I get the highest price possible for my stucco home while reducing the days on market?” The best way to market stucco home is by having the stucco system tested first. If repairs are needed, we get them done, and market the house as “pre-certified dry.” The inspection report, and any additional documentation, is then attached to your listing in the MLS (Multiple Listing Service) that Real Estate professionals use to market your home. This approach attracts more buyers since the fear of leaking stucco has been removed. A home that has already been inspected by a seller has shown to sell faster than one that has not. You can also wait and see if a potential buyer wants to do a stucco evaluation. The majority of home inspectors recommend invasive testing, since they cannot see below the stucco where the issues lie. Last year, over 90% of the stucco homes sold in the Northeast had an invasive stucco evaluation to determine if the stucco system was leaking. My experience shows that its always less expensive for a seller to be in control, and to perform any needed repairs rather than letting a buyer find problems, ask for the entire exterior to be replaced, or just cancel the transaction. The fastest way to sell your stucco or stone veneer clad home is to check it first, and then market the house as certified dry.

## **What Is Involved In Checking My Stucco Home?**

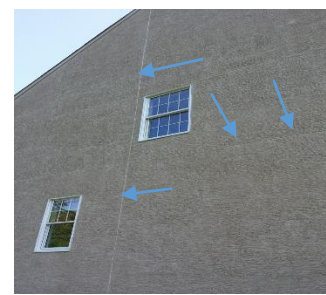
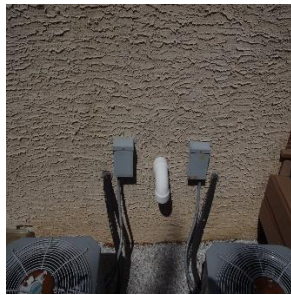
When an evaluation of a stucco home is performed, we do a complete visual evaluation of the entire system from the roof down of all dissimilar material intersections with the stucco such as windows, doors and other penetrations into the system looking for cracks, gaps, flashing details and staining. After the entire exterior is visually evaluated, we begin a photo log of the exterior components. We also perform an interior evaluation of the home looking for signs, symptoms or clues that moisture penetration is occurring or has occurred in the past. The interior evaluation is very important, as this speaks to a complete system evaluation. We may employ the use of Infrared Technology to help identify possible leak locations. Infrared is a good tool to use when diagnosing moisture intrusion, but it’s only a tool as it merely reads temperature differences and not moisture content in the underlying wood. Invasive testing and documenting moisture readings gives a much more accurate analysis of how a system is performing.

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Back outside, we begin invasive testing of the stucco system to determine if water has gotten behind the stucco and/or past the WRB (Weather Resistive Barrier) causing damage to the underlying wood substrate. This test involves drilling 2 small 3/16" holes approximately 1" apart, and inserting an electronic probe that contacts the wood under the bottom corners of windows, doors or other penetrations into the system. This process tells us the moisture content in the wood. Once readings are obtained and logged, the dust is blown from the drill holes & an ASTM C920 approved sealant is used to seal up the small holes, which, when done correctly, are nearly impossible to see.

Wood sheathing has a standard moisture content that ranges from 6% to 15%. If the moisture content in the wood is over 15% but under 20%, only minor work is needed that usually does not involve removing stucco. A moisture content of over 20% is an indication moisture intrusion is occurring. When we determine to what extent, then we can decide if any stucco needs to be remediated. Over 25% moisture content in the underlying wood requires removal of the stucco and locating the leak, re-setting windows and possibly installing specialized sill flashing. **Performing an in-depth system analysis prior to listing is the key to reducing the days on market and increasing the value of your home. Be proactive not reactive.**

Below are examples of flashing details that help keep water from getting behind the stucco:



**Weep screed**

**No weep screed**

**No expansion/control joints**

**Has expansion/control**

**About the author:**

Rob Lunny is an EDI Level II & Moisture Free Warranty Certified Stucco Moisture Intrusion Analyst. Rob also holds membership in AWCI, EIMS & Building Science Corporation, he is certified in Infrared Thermography and understands the science behind the construction of a wall system. Rob is a 20 year retired ASHI inspector and performs stucco system evaluations for homeowners & the Real Estate Community in PA, Delaware, New Jersey & New York, he also performs stucco system evaluations for 6 of the largest relocation companies in the Nation. Rob specializes in evaluating these systems and consulting with homeowners & contractors on correct repair methods. He also teaches Continuing Education to Realtors through 3 Real Estate schools in the Tri-County area to aid Realtors in a better understanding of the issues surrounding these systems and how to better serve their clients. Lunny Building Diagnostics also offers consulting services & 3<sup>rd</sup> party oversight for repair or installation of these systems to ensure original bid specifications were properly followed and all work has been completed according to industry standards.

For more information visit [www.LunnyEnvironmental.com](http://www.LunnyEnvironmental.com)



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