



## Stucco presents a unique set of problems

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Stucco is one of the most popular exterior finishes for homes. It's an attractive, low-maintenance and fire-resistant sheathing. But, like any building product, it's only as good as its application. And it's not right for every climate.

Traditional stucco siding is made of Portland cement, sand, lime and water - similar to concrete. A wire mesh is nailed to the side of the house, right over the house wrap, and special flashing is installed around windows and doors. Three coats of stucco are trowelled over the wire mesh - a scratch coat, a brown coat and then the coloured topcoat, to which pigment has been added.

There's curing time needed between coats, and stucco can be properly applied only at optimum temperature. If you are having stucco done when the weather goes below 5C, you'd better make sure your contractor encloses and heats the area.

One of the biggest problems with stucco is that it will shrink and crack, just like any concrete, especially in places where there is a freeze-thaw cycle.

Most newer homes with exterior stucco have an acrylic-polymer finish, which will expand and contract with the weather. This keeps cracks to a minimum and means the stucco can easily last up to 50 years before needing to be repaired.

Synthetic stucco materials also come precoloured from the factory, which gives perfectly uniform colour all over that is UV- and fade-resistant.

### THERMAL BREAK

The new stucco systems include an additional insulation layer of Styrofoam, a feature I love because it provides more of a thermal barrier. This is known as an exterior insulation and finish system (EIFS). An acrylic-polymer coat of stucco is applied onto a base of mesh and foam board insulation. EIFS has higher plasticity, which means it has more resistance to cracking, but it is more vulnerable to high impacts such as hail or hockey pucks, than traditional stucco siding.

For my money, new synthetic stucco - if used with a high-strength backer mesh and high-compression foam - is the way to go.

## **WATER PROBLEMS**

Since traditional stucco contains sand and cement, it is porous. It'll repel rain for some time but can eventually become saturated - even letting moisture penetrate all the way through to the house wrap. As long as the wrap is properly done, your house is protected. If it's not, moisture can reach the wood framing, causing rot or the growth of mould.

But traditional stucco also breathes and will eventually dry out. New synthetic stucco systems are a different story. These stuccos are made from acrylic polymers and designed to be completely waterproof. They don't breathe at all, which is great except when water does manage to get behind the surface, it has no way to escape, unless it can weep out the bottom of the wall.

Any cracks, bad caulking or poor flashing around windows and doors will allow water to get in and become trapped since it can't evaporate. And this moisture will inevitably lead to rot - first the wood sheathing and then the framing.

There are potentially serious EIFS problems with water-trapping - and they are getting worse as more and more houses use these synthetic stucco systems.

People try to seal around their windows and doors with caulking to prevent more water from getting in behind the synthetic stucco and they are actually making the problem worse by cutting off the few spots where water can evaporate.

Damage that might take 10 or 20 years to develop under traditional breathable stucco can happen in a just a couple of years.

*Mike Holmes is the host of Holmes on Homes on HGTV. For more information, go to <http://www.holmesonhomes.com> [<http://www.holmesonhomes.com>]*