I am investigating Type B versus Type D moisture-resistive barriers (paper under stucco) as they relate to vapor transmission. Which is better?

According to UBC Standard 14-1, type B has much lower permeance than type D. I’m also told—but haven’t seen this myself—that type B is very brittle and subject to damage while being installed. However, BOCA’s National Building Code allows Type B for this use.

For stucco assemblies, two layers of type D paper are recommended, and are required over wood-based sheathing (at least in UBC land). The use of two layers allows the outer layer to wrinkle up upon wetting, creating channels for intruding moisture or condensation to run down, while the second layer prevents most of the moisture from entering the wall cavity. During the stucco installation, the wet stucco causes the first layer to wrinkle up, which embeds in the stucco’s backside. Once the assembly dries out, the membrane flattens out. This creates channels in the back of the stucco that some suggest facilitate drainage. And since each layer of Type D has very low permeance, any moisture that does get into the wall cavity can escape as vapor.

The following are taken from discussions on AWCI’s NetForum found at www.awci.org/netforum/awci/a:

We had a fire in our bedroom that caught the bed, the nightstand and small portion of the floor on fire. The walls are plaster, the ceiling is drywall and the floor is hardwood. After the fire department came, water went through the floor to the dinning room ceiling, which is plaster. Our insurance agent sent out a cleaning company, which immediately started cleaning up the water. Do I have to worry about the rest of the plaster on the dining room ceiling falling down, since most of the topcoat has already come off? Also, do I need to have the plaster walls in our bedroom redone or re-drywalled?

The plaster and drywall in the bedroom where the fire started should definitely be replaced. Even though they are still in place, and the insurance company says they can be cleaned and painted, the have been exposed to the heat of the fire, and the gypsum content has certainly been partially calcined. This reduces the fire retardant properties of the plaster and drywall. Gypsum contains more than 20 percent water in crystalline form. When it is heated as in a fire, the crystals break down, releasing the water, which keeps the wall relatively cool, and contains the fire to the room in which it started. The plaster and drywall did their job. But now they need to be replaced so they are ready to do it again. And if you replace the plaster with drywall, use 5/8-inch fire-rated boards instead of half-inch. The difference is cost is minimal, but they will be as good a fire retardant as the plaster. The ceiling of the dining room below has probably not been calcined, but could have been damaged by the water. If it is sagging at all, it should be replaced.

—George Green Gypsum Consulting

What type of fastener would be used to attach lath for three-coat stucco over 1 inch or thicker EPS foam? I am in an area where contractors do not use stucco netting but use expanded lath only. Concerns have been expressed that fasteners will not support stucco through foam.

The application of stucco directly over EPS is not recommended because the stucco will crack. To avoid the cracking, first install sheathing over the EPS. There are fasteners on the market specifically for use with expanded lath in this situation.

—Bob Drury, Northwest Wall and Ceiling Bureau

About the Author
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