How are latex bonding agents for stucco applications tested? —via e-mail

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ASTM C932, Standard Specification for Surface-Applied Bonding Compounds for Exterior Plastering, is used for comparing “exterior surface-applied bonding compounds for improving the adhesion of cementitious material to concrete or other masonry surfaces or any structurally sound surfaces.” (I’m told that the ancestor to this specification is an ancient military spec; however, I was unable to find a copy for comparison purposes, and no one I talked to in the federal government could find it either.) C932 describes the required characteristics and test methods for determining whether a product meets certain performance requirements. The testing method in the standard explains how to prepare briquettes made of mortar, apply the bonding agent to the briquettes, apply fresh mortar over the coated surface and see whether the bond will withstand 150 psi under several conditions.

Several different latex polymers are used in the manufacture of these bonding agents, and as long as they perform according to the above-mentioned testing procedures, they are considered acceptable. However, I happened to be sitting in on the ASTM task group meeting that monitors C932, and it came to light that one of the less expensive resins used in some of these bonding agents, polyvinyl acetate, has shown some failures that the testing in C932, as currently written, did not predict. During a presentation to the task group, Douglas “Gerry” Walters, a chemist who has formulated such resins, explained that PVA is alkaline sensitive and can fail in such applications due to “hydrolyzing.” Walters’s presentation prompted a proposed change in the test method that would better simulate a wet condition where hydrolyzing might occur, and that the wet condition be tested at 100 psi.

Hydrolyzing occurs when an alkaline sensitive latex material is subjected to high alkalinity in the presence of moisture. In other words, wet portland cement stucco applied over a PVA-based bonding agent may have sufficient alkalinity and moisture to dissolve the film, especially if the substrate was already wet before the application of the layer of stucco.

Walters explains that a couple of other compounds—vinyl acetate ethylene, vinyl ester of versatic acid or vinyl acetate with acrylic modifiers—are not so alkaline sensitive, and are a better choice for bonding agents.

I am restoring a wall that appears to be plaster. I have scraped off almost all the old layers of paint with a manual scraper. Some paint will not come off. Should I use belt sander on the whole wall to get it smooth?

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A belt sander might be a bit labor-intensive on such a large surface, not to mention annoying to the neighbors. I recommend using a chemical paint stripper once the scraper becomes ineffective. There are many different products on the market. I prefer the paste type. You can cover some such products with plastic to keep them from evaporating too quickly so they penetrate farther into the old paint, which makes for fewer applications.

Once the paint is removed, scrub it down with whatever the paint stripper label recommends to neutralize the chemical, lest it cause discoloration or adhesion problems later. Once the surface is clean (and before patching), prime the chemical, lest it cause discoloration or adhesion problems later. Once the surface is clean (and before patching), prime the plaster with whatever is compatible with the desired finish. Patch the dings with spackling compound or patching plaster. All-purpose joint compound is not intended to be used thusly; it is designed to stick to itself or bare gypsum board. Sand first with 80 grit, then 100 grit. Remove all sanding dust with a damp sponge. Spot prime the patches with the primer, and finish as desired.

About the Author
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