

## Silicon Sealants ◀ ▶ My Opinion

*Have a technical question? Check MIA's Dimension Stone Design Manual VII first. If you can't find the answer there, contact MIA's Technical Director, Chuck Muehlbauer, at [technical@marble-institute.com](mailto:technical@marble-institute.com). This FREE service is for MIA members only! (Non-member charge: \$85/hour) As a courtesy to other members, please limit phone conversations to ten minutes per call. All opinions and advice provided by Chuck Muehlbauer or anyone else from MIA are provided as general information only. MIA assumes no responsibility and shall not be liable for any damages resulting from your use of this information. Any information provided by the MIA are the exclusive property of MIA and shall not be disseminated, republished, or reproduced in any manner without the prior written consent of MIA.*

**Q.** I've been asked to provide documentation that the marble we are supplying complies with the ASTM C 503 Specification. I have a copy of the ASTM standard, but it clearly says "for exterior marble". The job I'm supplying is all interior work. What is the ASTM number that governs interior marbles?

**A.** The copy you have must be an obsolete version. The current version of the document is ASTM C 503-08, and it is titled: "Standard Specification for Marble Dimension Stone." Previously, the title of the standard did limit it to exterior only, but that limitation was eliminated in a revision process a number of years ago. At the same time, recognizing that there are in fact some different property and performance requirements applicable to exterior versus interior installations, the committee added some discussion on marble soundness and repairs to the document. The text on soundness and repair that was added was actually taken from the Marble Institute of America's *Dimension Stone Design Manual*, and was reprinted with the MIA's permission.

**Q.** When is the MIA going to wake up and put something in your manual to prohibit the use of silicon sealants with stone? Everyone knows that silicon stains stone. How many more jobs have to get ruined before you guys put a stop to its use?

**A.** Actually, silicone doesn't stain natural stone. If staining occurs, it

is almost assuredly caused by the plasticizers in the sealant, and not the silicone. Plasticizers are admixtures in the sealant product for the purpose of reducing the modulus (making it "softer" which increases the extension and compression capability of the sealant). Plasticizers can be oil based, or include other potential staining agents. Not all silicone sealant products have the same type or amount of plasticizer, since some molecular chains of silicone already provide reduced modulus, and therefore have reduced need for plasticizers. So while yes, some silicone sealants may "bleed like a stuck pig" into the stone substrate, others exist that are non-staining. You have two options to verify compatibility between the stone and the sealant. One is to identify an exemplar project using the same stone and sealant combination in a similar climate and simply observe its condition. When such an exemplar project doesn't exist, the other option is to test for compatibility per ASTM D 2203 Standard Test Method for Staining from Sealants. Some of the major sealant manufacturers may provide assistance to you in identifying the exemplar project from their database <sup>and/or</sup> completing the laboratory testing.

**Q.** Why does the MIA *Dimension Stone Design Manual* show mesh reinforcing in the mortar bed only if 2" or thicker? Wouldn't reinforcement be a good idea all the time?

**A.** Yes, perhaps in theory, but it is simply not achievable in prac-

tice. For the wire mesh reinforcing to be effective, it really needs to be within the center third of the mortar bed with some reasonable dimension of mortar covering it both top and bottom. If the mortar bed is less than 2" in depth, it's just not practical to assume that the field mechanics can control its position accurately enough to keep it within the center third of the bed. It's going to be at the top or bottom, where it's simply ineffective.

**Q.** Why does the MIA have a 15 ft. vertical limit to adhered stone installation? Does stone get heavier if the wall gets higher? If a stone falls off from 15 ft., isn't that still as much of a safety hazard as one falling from higher?

**A.** No, obviously the stone doesn't get any heavier. The primary rationale behind that limitation was visibility and informal inspection. While some owners and some municipalities have comprehensive façade inspection regimens in place, many do not. At 15 ft. above the sidewalk, a distressed installation would likely get noticed even without a formal inspection protocol. Above that level, it's not as likely to be noticed, and the probability of the condition advancing into a public safety issue is much greater.