

## Mitered Corners ◀ ▶ 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 is 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 read your column last month discussing pedestal supported pavers. Can marble pavers be used on pedestals, or is marble too fragile for this application?

**A:** As is so often the answer in our business, "it depends on the specific marble". Properly selected and evaluated marbles of soundness classifications A and B, with sufficient flexural strength and weathering performance could certainly be used. And this evaluation wouldn't be limited to marbles. In every stone type category there are examples of particular stones that lack the soundness, strength, and stability to make a pedestal supported application feasible or practical.

Typical safety factors used in design of some stone types are higher than for others. The requirement to satisfy the higher factor of safety will be a financial penalty in many cases as it will mandate the use of thicker stone slabs.

**Q:** Is there any published data listing shear strengths of stones?

**A:** Not only is there no published data, there is no recommended or endorsed method by which to test it. There are a few cases where the shear strength of a stone would provide influential design data. For instance, a heavy thickness of stone partially supported by a clip angle, if loaded to failure, would fail in almost pure shear. There has been discussion and proposals amongst the testing gurus regarding a means to test for shear strength, but no method has been adopted. Despite the simplicity of concept, actually designing

a fixture that would test stone specimens in pure shear with no bending force is quite difficult.

**Q:** We have specified a granite flooring in a size of 24" x 24" x 3/4" thickness. The contractor wants to thinset the material. Is there any technical reason why this shouldn't be done?

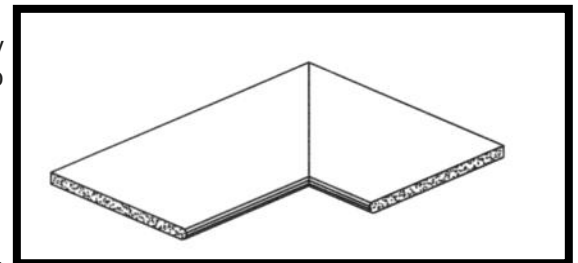
**A:** Not really a technical reason, but perhaps a practical reason. First is the complication of the paver unit size. Thinset products are generally limited to a rather unforgiving 3/16" maximum depth. Attempting to level a 4 ft<sup>2</sup> paver in thinset is not likely to produce great results, with unacceptable lippage being the expected outcome.

A medium bed mortar, generally capable of bedding depths up to 3/4" would be more appropriate. The second hurdle is the thickness tolerance of the paving units. NBGQA (National Building Granite Quarries Association) specifications and the Marble Institute of America's *Dimension Stone Design Manual* list the tolerance for 3/4" (20 mm) nominal granite slabs at ±1/8" (±3 mm), so theoretically you could have an extreme spread of 1/4" in the thickness of the pavers.

Most sawyers in the industry hold tighter tolerances than this, but there is no enforceable standard that says they must. While the medium bed mortar may be capable of working with this range, it makes it difficult for the mechanic in the field, as he/she may have large adjustments between adjacent pieces.

**Q:** On page 17-D-3 of the Design Manual, it says that mitered corners are not recommended. We do these all the time – what's wrong with it?

**A:** It's not wrong, and in several parts of the country, for example the southwest region, it is very common. The reasons we don't recommend it are the necessity to use two pieces that are long enough to reach the corner (requiring more slab stock), the length of the seam being nearly 1½ times longer, and the logistics of transporting and handling the fragile mitered pieces. In some cases however, particularly when using materials with pronounced linear veining trends, it is aesthetically superior to the 90° seam options.



*Miter Joint Through Countertop*

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