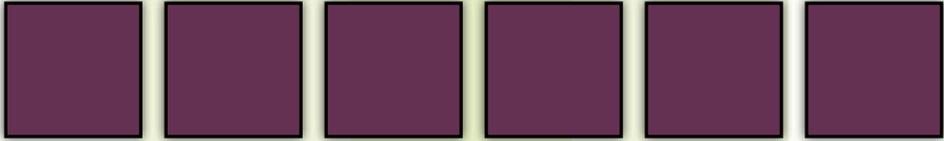


LARGE FORMAT TILE: a wide demand for narrow grout joints

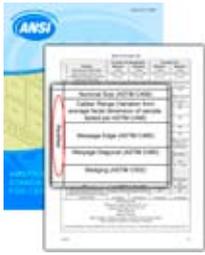


By Bill Griese,
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Large format tiles are in style, and continue to increase in popularity. One design element that contributes to their popularity is less overall grout area when they are used. While a conventional 3/16-inch to 1/4-inch joint looks very good with large format tiles, sometimes a narrower grout joint is specified, further minimizing the overall grout area. However, this look can only be achieved if some key installation issues are addressed.

The first issue is that narrow grout joints provide less room to allow for variation in tile size. One way to address this issue is through the use of rectified tile. Rectified tile has less dimensional variation, because the edges are ground

to achieve more precise facial dimensions than traditional calibrated tile has. This is clearly shown in the 2008 ANSI accredited standard A137.1, American National Standard Specifications for Ceramic Tile, which lists the dimensional requirements for rectified tile, calibrated tile, and natural tile (tile that has not passed through a sorting/calibrating machine). It should also be noted that A 137.1 references section 4.3.8 of the ANSI accredited standard A108.02, which states that “the actual grout joint size shall be at least 3 times the actual variation of facial dimensions of the tile supplied.” This does not permit the use of narrow grout joints with tiles exhibiting much variation in their sizing.



When selecting large format tile, one should be familiar with the sizing requirements for rectified tile in the 2008 ANSI accredited standard A137.1.

Get to know ANSI A137.1!

Prior to the passage of the 2008 ANSI accredited A137.1 standard for ceramic tile, there was no standard sizing requirement for rectified tile, and even today the international standard for tile (ISO 13006) does not have such a requirement. Unfortunately, some large format tiles on the market promoted as “rectified” do not meet the A137.1 standard, and are only as dimensionally precise as calibrated tile. Therefore if a narrow grout joint is desired, one should be familiar with the 2008 A137.1 requirements when selecting large format tile, especially if it is advertised as “rectified.”

A flat substrate is key

Another key issue to consider when installing large format tile with a narrow grout joint involves the impact of an uneven substrate. First, narrow grout joints provide less room to



Large format tile set in a staggered pattern can exacerbate lippage that is more obvious with narrow grout joints.

allow for variation in the layout due to an uneven substrate. Second, with narrow grout joints, lippage due to an uneven substrate is more apparent.

It is critical to have a flat substrate. The *TCA Handbook* calls for 1/4-inch maximum deviation from planarity every 10 feet. However, one should consider even stricter tolerances when working with large format tile, especially when a narrow grout joint is desired. With larger tiles, the effects of an uneven substrate on the installation are magnified, making it harder to avoid lippage or misalignment. Smaller tiles can better accommodate variation in the subfloor. With larger pieces, layouts contain fewer tiles, and therefore fewer opportunities to make gradual adjustments when compensating for the effects of an uneven substrate.

Setting procedure

Setting procedure is another issue that should be given special consideration when installing large format tiles with a narrow grout joint. Like natu-



Like natural stone, a thick set mortar bed can be used when installing large format tile.

Photo courtesy of Ceramic Tile and Stone Consultants



A medium-bed (thin-set) method, utilizing large trowel sizes and mortar with anti-slump characteristics, is most common when installing large format tile.



Although, the TCA Handbook calls for 1/4-inch maximum deviation from planarity every 10 feet, one should consider even stricter tolerances when working with large format tile

ral stone, a thick-set mortar bed can be used when installing large format tiles. But more commonly, a medium-bed (thin-set) method with a large notch trowel of 1/2 inch or greater is used. These mortars are formulated with coarser aggregate to provide anti-slump characteristics that resist larger, heavier tile sinking in the mortar. Some medium bed thin-set mortars also utilize innovative technology, such as hollow ceramic microspheres, to improve trowelability while maintaining anti-slump properties. With flat floors, a full contact mortar can also be considered. These innovative mortars change viscosity as the tile is moved back and forth allowing full contact to be made between the tile and the floor. Even with the



Self leveling underlaments (SLUs) are an option in achieving a flat substrate. Photo courtesy of ProSpec.

development of these mortars especially for the installation of large format tiles, installers need more time, and compensation for such, to achieve a flat installation when tiles are placed closely together.

Pattern choice reduces lippage

One final issue to consider when installing large format tile is inherent tile warpage. Though such warpage is usually slight, lippage can result when the low spot in one tile is near the high spot in another. This becomes more noticeable as grout joints become smaller or where wall wash lighting is used. Therefore, patterns that have the center of one tile near the end of another should be avoided when installing large

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format tile with a narrow grout joint. Some examples include running bond (brick) and pinwheel patterns. When opting for these patterns with large format tiles, it is important to consider a wider grout joint to reduce noticeable lippage.

In summary, there are a host of issues one should consider to achieve a successful narrow grout joint installation with large format tiles: Using rectified tiles, proper steps to flatten the substrate, an appropriate setting procedure, avoiding patterns that exacerbate lippage, avoiding wall wash lighting, and allowing sufficient time and compensation for an installer with experience in such installations.

Bill Griese, standards development and green initiative manager for the Tile Council of North America (TCNA), is involved in the development and revision of ASTM, ANSI, ISO, and other industry-specific standards, and the coordination of TCNA's environmental efforts. He serves as chairman for the ASTM C21 Committee on Ceramic Whitewares and Related Products, and also works closely with TCNA's Product Performance Testing Laboratory. Griese earned a Bachelor of Science degree in Ceramic and Materials Engineering from Clemson University in Clemson, SC.