



Cross Grid Tile - Rectified Tile - and Narrow Grout Joints

Cross-Grid is Crossville's term for precisely rectifying/squaring the tile on all sides so that measurable variance from tile to tile is minimized. For an additional charge per square foot this custom cutting service is available for most of the tile products Crossville produces.

In addition, some of Crossville's most popular tile products come with rectified edges at no additional cost.

One of the benefits of this consistent sizing is to allow for narrower grout joints. However, in order to accomplish a recommended grout joint of 1/8", variation in the substrate must also be minimal. ANSI A108 installation standards state in section A108.01 (2.6.2.2) and similarly in 108.02 (4.1.4.3.1):

"They shall be dry, stable, well cured, and, for tile with all edges shorter than 15", shall have a maximum permissible variation of ¼ in. in 10 ft. (6 mm in 3 m) from the required plane, and no more than 1/16 in. variation in 12 in. (2 mm in 305 mm) when measured from the high points in the surface. For tiles with at least one edge 15 inches (381 mm) or longer, the substrate shall have a maximum permissible variation of 1/8 inch in 10 feet (3 mm in 3 m) from the required plane, and no more than 1/16 inch variation in 24 inches (2 mm in 610 mm) when measured from the high points in the surface. Alternatively, in lieu of these tolerances, the concrete slab can be depressed to accommodate a mortar bed method of installation."

In addition to the new substrate requirements for tiles over 15", ANSI A108.02 sections 4.3.8.1 and 4.3.8.2 state:

Running Bond/Brick Joint Patterns: *For running bond/brick joint patterns utilizing tiles (square or rectangular) with any side greater than 15", the grout joint shall be, on average, a minimum of 1/8" wide for rectified tiles and, on average, a minimum of 3/16" wide for calibrated (non-rectified) tiles...*

Running Bond/Brick Joint Offset: *For running bond/brick joint patterns utilizing tiles (square or rectangular) where the side being offset is greater than 18" (nominal dimension), the running bond offset will be a maximum of 33% unless otherwise specified by the tile manufacturer. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage.*

This alteration of the specification should be noted in CSI Section 03100 Concrete Formwork see example:

- **"3.X INSTALLATION** concrete shall be of a flowable consistency (5-inch slump with admixture), pumped and well tamped into place, and finishes compressed and compacted by troweling. Finish slab free from small hollows or bumps and graded to the elevations called for, with depressions in floors between high spots not greater than 1/8-inch below a 10-foot straightedge in accordance with ACI 302 Surface Finish Tolerance, and not vary more than 1/4-inch between opposite exterior walls, unless otherwise called for on the Drawings." If the slab has been prepared properly thin-set methods TCNA F-113 or TCNA F-122 can proceed.
- Remedial measures such as planning or grinding of the slab are sometimes necessary; alternate to these would be building up the slab with patching or self leveling compounds following methods TCNA F200 or TCNA F205.
- Final option would be to recess the slab and carry out a full mud-set application following methods TCNA F111 or TCNA F112.

If variations in the substrate exist or are allowed beyond the tolerances defined above, wider grouts up to 1/4" will become necessary in order to visibly hide the transition from one tile to another. If a uniform grout joint appropriate to the condition of the substrate is not employed, "lippage" of the tile will occur. The Tile Council of North America Handbook states: "Lippage is a condition where one edge of a tile is higher than the adjacent tile, giving the finished surface an uneven appearance."

A= Rectified Tile B= Substrate Improvement (flatter) C= Narrow Grout Joints

A + B = C

There is a balance; A without B and the Customer's expectations are not met, simple as that, so lets all tell the same story.

It is hoped this information provides a better understanding of rectified tile and Crossville's related products.

Crossville Technical Services
Crossville Incorporated
(931) 484-2110