

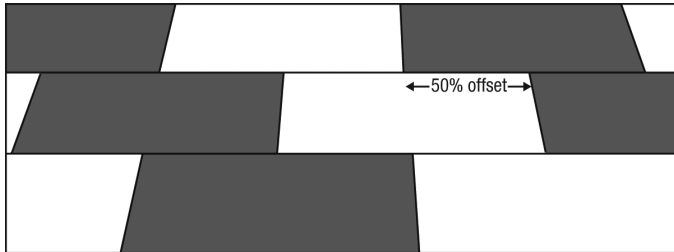
June 2011 revised

Re: Pressed Rectangular Tile-Large Format

Pressed rectangular tile by virtue of their size and shape offer new and interesting design possibilities. They also create their own unique demands related to workable patterns, grout joint size and possible lippage issues. It is hoped that this candid review of the product is helpful in understanding when and how these tiles can best be utilized on a project.

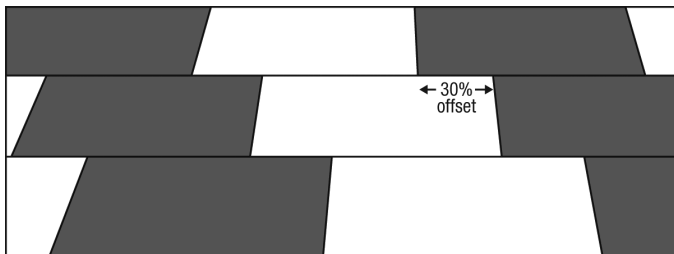
Large rectangular tiles are pressed with inherent tension, this strengthens the tiles irregular shape, similar to tensioned concrete slabs or flat heavy haul trailers. This strengthening begins to develop during the pressing of the tiles and continues to develop in the tile as it passes on to the drying oven. The resulting tension in *pressed rectangular tiles* can sometimes show up in the form of an arc or crown on the surface of the tile. While completely within ANSI 137.1 specifications, these large rectangles can require the following:

traditional offset



Re-arrange the offset in the previous and following rows to meet the lower point.

TCNA recommendation



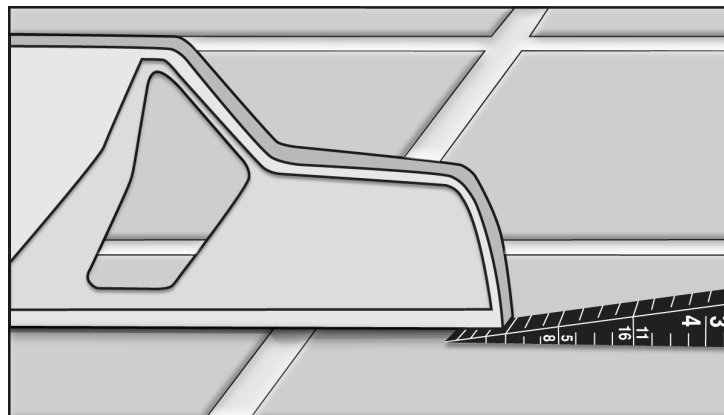
Gently opening up the grout joint will also improve transitions from tile to tile. The TCNA Handbook 2011 page 33 recommends for tile "with any side 18" or longer the grout joint shall be, on average, a minimum of 1/8" wide for rectified tiles and, on average, a minimum of 3/16" wide for calibrated (nonrectified) tiles.

Finally of course the substrate itself and its variations can aggravate the precision of the installation and width of the grout joints. The current requirements have changed significantly again per the TCNA Handbook 2011 page 34, " for tiles with all edges shorter than 15", maximum allowable variation is 1/4" in 10' from the required plane, with no more than 1/16" variation in 12" when measured from the high points in the surface. For tiles with at least one edge 15" in length, maximum allowable variation is 1/8" in 10' from the required plane, with no more than 1/16" variation in 24" when measured from the high points in the surface.

- shifting the tile pattern (see examples to left)
- change in installation method and setting mortar
- both may be necessary, particularly if a very narrow grout joint is expected

Accepting the physical aspect of these tiles 18" or larger, shifting the typical brick pattern commonly used from a 50% offset to a maximum 33% offset does much to resolve any possible lippage from one tile row to the next, without compromising the overall appearance of the installation. The above 1/3 offset is now the prevailing recommendation from the Tile Council of North America 2011 for ALL tile 18" or longer (square or rectangle page 33).

The use of a larger notch trowel, in conjunction with a medium bed or full contact mortar is recommended to improve overall support and coverage for large tile modules.



Above: "Widening the grout joint does not eliminate lippage, but can make it much less apparent." Photo courtesy Ceramic Tile and Stone Consultants.

This alteration of the specification should be noted in CSI Section 03100 Concrete Formwork.

If variations in the substrate exist or are allowed beyond the tolerances defined above, wider grout joints from 1/8" 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.

Again, citing the Tile Council of North America Handbook: "*Lippage is a condition where one edge of a tile is higher than the adjacent tile, giving the finished surface an uneven appearance and potentially causing a trip hazard.*"