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L/360: DEFLECTION PROTECTION



INSIDE TILE INC

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We all know in a tiled floor application, be it ceramic, porcelain or stone, tile is hard and will crack, break or dislodge if the surface in which it is installed bends under load. This is called deflection. To understand deflection in floor applications, we need to wrap our minds around L/360, subfloor deflection **and** the joist system deflection.

According to TCNA, there is an accepted minimum requirement for floor rigidity; L/360. This equates to 360 inches divided by 12 inches equals 30 feet; meaning for every 30 feet of tile, there can only be 1 inch of deflection (bounce) in the tiled floor.

There are 2 criteria to meet L/360: the joist **and** subfloor. Your subfloor will meet L/360 for tiled flooring applications using these floor joist systems:

- A. Using a 16" on center floor joist and 5/8" tongue and groove exterior grade plywood or 3/4" tongue and groove exterior grade OSB
- B. Using a 19.2" on center and 24" on center floor joists using only 3/4" tongue and groove exterior grade plywood or OSB

Once again, either of these floor joist systems will ensure that your subfloor meets L/360 between the joists. Keep in mind that backerboard does not contribute to your subfloor meeting L/360.

How does your joist system (room span) meet L/360? This is something the engineer can tell you. You should really be concerned about your joist system meeting L/360 if you have a tiled floor application that is suspended over a basement or even over a crawl space. If the floor has considerable deflection (bounce) to it, recognize if the joist system needs additional joist support (piers) to help the length of your room span meet L/360. Once again, check with the engineer to ensure the joist system meets L/360.

There are many products in the market that work with deflection in a tile floor application. The only way these products will warrant themselves is if your joist and subfloor system meet L/360 before their product fails. If your tiled floor application does not meet L/360, backerboard, thinset, grout and tile manufactures will be quick to walk away from the failed floor application.

If you have any questions on the topic, please don't hesitate to call.

<http://www.tileusa.com/>. August 25, 2008.
<http://www.nationalgypsum.com/>. August 25, 2008.

UNDER CONSTRUCTION:



Coming soon, Tile Inc. will have a new website, www.tileinc.net. Our website will feature our services, product lines, contact information and helpful links. Add it to your "favorites" now and check back in the coming weeks when the website is fully launched.