

The Fabrication & Installation Process of Tile Countertops

Tiles for use in countertops are generally prefabricated and available almost exclusively in cut squares ranging from 1 to 12 inches. The most common materials for countertop tile are ceramic, porcelain and stone. Most tile shops will have a large selection of materials, patterns and designs in stock and more that can be ordered and delivered in as little as a few days.

Ceramic and porcelain tile manufacturing has remained largely unchanged for centuries. The raw materials are typically natural clays, sand, dolomite or quartz that is powdered and mixed with small amounts of water. The next step commonly involves pressing the in dies at several hundred pounds per square foot to create the body or bisque.

The bisque is then dried and glazed. The glaze is pre-mixed for color, density and weight before being applied through one of various techniques for pattern and design, including silkscreening, waterfall, sprayed or brushed.

After the glaze is applied, the bisque, now called greenware, is introduced to a roller hearth kiln where it is baked and pressed at more than 2100 degrees F for around 45 minutes. After cooling, some ceramic and porcelain tiles can be further polished and refined. Many types of porcelain can also be bullnosed for edging and 'coved' for backsplash usage. In all, the process is generally done in about seven steps that takes anywhere from 60 minutes to a few days depending on the material and the factory.

Stone tiles are cut from solid stone, and in essence are miniature slabs with a highly reduced thickness. Granite and sometimes marble or other natural stones are used for stone tiles which are precut and polished. Edging is also cut from stone. It can be important to choose edging at the same time as the tile, or the grain and color could be mismatched.

After the tile is delivered to a home, it can usually be installed by one person over a two day period. In most cases, the tile will have to be further cut inside or outside the home, if possible, to meet the specifications of the countertop. The complexity of the cuts required can add to the installation time and the first day is usually a full-day job for twelve feet of countertop. These cuts can produce dust but the use of wet saws, ceramic clipping tools or snap cutters can reduce this, making in-home cuts less messy.

The tiles are applied to one of several different substrate materials. Plywood can be used, but it is more common for countertop fabricators to use a specialty backer board or mortar setting. The tiles are set in an adhesive with about a dime-edged space between them, or whatever the desired distance between tiles. Then, the tiles usually require a 24 hour period for setting before the grout is applied. Between the tiles and the backsplash, which would most commonly also be made of tile, joints are filled with caulk or sealant. The grout application typically only requires 1 to 2 hours to complete. And a final sealant should be applied to most grouts, which are more porous and thereby less stainproof than the tiles themselves.



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