Tile Design & Printing

The tile industry is constantly innovating, design and format-wise, from slabs, thinner, thicker, through body veins, anti-bacterial, and more. To date, printing capabilities have been the most transformative of them all.

The Progression of Tile Printing

Silk Screen - Historically, manufacturers used silk screens to apply glazes. The resolution was low and each set of silkscreens produced only a single color pattern. The tile had to be rotated during installation or it was immediately obvious that every piece looked the same.

Roto-Color - The Roto-color process was a huge step forward in the 1990s and allowed for a pattern that wouldn't be repeated for 20-30 tiles, however, a lack of graphic variation, natural shading, and general low-definition graphics left much to be desired design on the table.

Digital Printing - This technology entered the market at the turn of the century and was not perfected until around 2010. Like the technology that changed the television industry, Digital Printing not only brought the most realistic image possible, it also meant that hybrid looks could now be introduced to the market along with added texture and dimension. Most tiles produced in large-scale factories utilize this technology, with a few exceptions such as deep bright colors (yellow, red, blue, green). Much like the picture on your television screen, the graphics on tiles are made up of millions of small pixels of color. The smaller the pixels, the higher the definition.

Digital technology uses 500 injectors to print with greater variety and less repetition in the overall pattern. This process allows for a production pattern that is not repeated for 180' or more. This is 8 times the variation of a conventional Roto-color machine and a far better resolution. Today, with the advances in glazing technology, High Definition Porcelain utilizes digital printing technology pioneered in inkjet printers. This is a huge leap forward in both resolution and pattern variation, creating a porcelain tile that is virtually indistinguishable from natural stone.

Digital printing is done without direct contact with the surface of the tile; the glaze is sprayed on. This removes the unprinted edges known as framing and the unglazed valleys that are often created with the Roto-color process. Digital printing technology also allows for the creation of low-relief patterns, handmade effects, fabric looks, and mosaics. Trim shapes like Cove Bases and Chair Rails can be made with the same process as the floor and wall tile, matching far better than with traditional methods. The Digital process can also reproduce the look of wood, rustic stones, marble, and slate as well as mix these looks to create hybrid designs, without the cost and complexity of filling, honing, or double pressing.

While this concept is simple in theory, it has taken decades of painstaking work to bring the technology from the research and development laboratories to the production line.