

TileLetter

www.tileletter.com

ON THE COVER:
Schluter-Systems

Tile – how it changed one
showroom and one
plumbing dealer, forever

Qualified Labor
1,000th Certified Tile Installer

Thin Tile
adds majesty to
university façade

Tile – how it changed one showroom and one plumbing dealer, forever

*By Sean Gerolimos,
technical director, Schluter-Systems*

Retail spaces and showrooms are demanding environments for floor covering materials that make a first and lasting impression. There are high traffic levels, cleaning requirements, and expectations for long-term durability with minimal maintenance. This article takes a look back at how one plumbing dealer chose ceramic tile as the floor covering for his busy showroom, and how this choice ultimately changed his business.

Aird Dorrance was founded in

1960 in upstate New York by Aird and Barbara Dorrance as a plumbing, heating, and industrial supplies dealer. The couple's son Frank and his wife Sheila became part owners in the family business in 1995. The company remained family-owned until 2010 when it was sold to VP Supply Corp, a wholesaler specializing in plumbing, HVAC, renewable energy, and kitchen products. Aird Dorrance remains a division of VP Supply Corp with showrooms near Plattsburgh, N.Y., and Albany, N.Y. These showrooms

present excellent examples of the how the use of ceramic tile and appropriate installation systems offer clear advantages over other coverings.

The true value of ceramic floors over other surfaces

When the company was building their first Kohler premier showroom in 2003, a combination of experiences led Frank to select ceramic tile as the floor covering. The floors in their previous space had been covered with vinyl composition tile (VCT), and they required periodic maintenance. Over the course of months, sand tracked in from the outside would be ground into the floor finish, revealing traffic patterns. Thus, displays in the showroom had to be moved, and the process of stripping and sealing/polishing would be repeated.

In addition to the disruption of store operations and inconvenience to customers, this periodic maintenance also increased the cost of the flooring. According to a study performed by construction cost consulting firm Scharf-Godfrey and published by the Tile

Council of North America (TCNA), the installed cost of VCT is approximately half that of ceramic tile, but the longer expected life span of a ceramic tile floor and limited maintenance requirements result in a lower life cycle cost for ceramic tile.

The new showroom was to be 4,000 sq. ft. of open space to provide flexibility in setting up product displays, vignettes, etc. The floor structure consisted of steel decking with a 4" thick concrete topping, with hydronic radiant heating tubes embedded. Although the floor was designed and constructed to meet building code requirements, deflection and vibration of the structure were expected, as well as increased



Properly-placed movement joints - here filled with DILEX movement joint profiles - help ensure the floor stays crack-free and are virtually indistinguishable from grout joints in the floor.

expansion and contraction with the operation of the heating system. Frank had previously worked with Schluter-Systems when consulting on a hydronic radiant floor heating system installation at the company's original office building in Plattsburgh, and knew it was important to take these factors into account when designing the floor-covering assembly.

Planning for expansion and contraction

Based on this experience, he selected an uncoupling membrane, Schluter®-DITRA, as the tile underlayment. Uncoupling membranes are geometrically configured to provide flexibility at the interface between the substrate and the tile covering and the transfer of movement stresses. This allowed the



The tiled floor in the showroom has become a sales tool to help explain tile floor installation and, ultimately, to sell more tile.

suspended, heated concrete floor to move without damaging the tile assembly. It also helped prevent a shrinkage crack, still visible in the mechanical room where the floor isn't covered, from transferring to the tile or grout. The space created on the underside of these membranes can also allow heat to transfer laterally, which promotes even heat distribution between hydronic heating tubes early in the heating cycle.

Tile underlayments, including uncoupling membranes, are not a substitute for movement joints. Movement joints are an essential component of any tile assembly. Tile and grout are rigid materials that expand and contract with changes in temperature, humidity, and loading. If they are not allowed to do so freely, by providing free space at the perimeter and replacing grout joints with flexible sealant at regular intervals, stress will build up in the covering. This greatly increases the risk of cracking and delamination of the tile and grout. The *TCNA Handbook for Ceramic, Glass, and Stone Tile Installation* includes comprehensive

guidelines for movement joints (Method EJ171). For this project, Frank selected prefabricated Schluter®-DILEX movement joint profiles. The joints were placed at floor-to-wall transitions and within the tile field.

Minimizing shrinkage stresses in fast-track construction

When the time came in 2006 to build an even larger showroom in

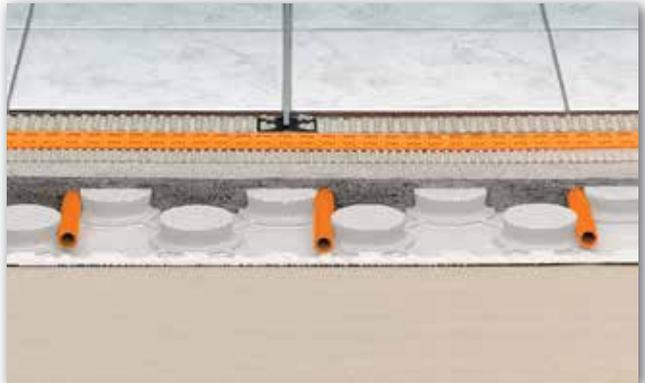


Use of an uncoupling membrane prevented this shrinkage crack (exposed in the mechanical room) from transferring through the tile and grout in the public areas of the showroom.

Ballston Lake, N.Y., Frank intended to replicate the success enjoyed at their Plattsburgh facility. The situation was different insofar that there was an existing concrete slab on grade, and the construction schedule was on a fast track. Thus, the plan was modified to include the hydronic radiant heating tubes in a poured underlayment. Again owing to Frank's experience consulting on the Schluter-Systems office building, the first step was to place the Schluter®-BEKOTEC modular screed system over the subfloor. The studded EPS foam panels provided thermal insulation over the concrete slab, a means to anchor the hydronic tubes without fasteners, and eliminated the need for wire reinforcement and movement joints in the screed. The last benefit is possible because micro-cracks form in the screed between the weak points created by the studs, in effect creating a series of smaller screeds across the floor. In this way, shrinkage stresses were minimized and curling and continuous cracking were prevented. The uncoupling membrane and tile were applied as soon as the screed could support installation traffic (within days).

A new tile business is born

Perhaps the most interesting part of this story from the perspective of the tile industry at large is that these positive experiences with tile in their showrooms led Aird Dorrance to change their business model and begin selling tile. In that way, their showroom floors became more than just a serviceable part of their infrastructure. The story presented in this article has been told many times over the years to prospective customers. These showrooms demonstrate how ceramic tile can be combined with radiant heating to produce beautiful, durable, and hygienic floors that provide superior comfort to owners and customers (or inhabitants and guests) in commercial and residential settings alike.



Hydronic tubes are placed in a modular screed for efficient heat transfer through the tile floor in the BEKOTEC modular screed system. The studded EPS foam panels provide thermal insulation over the concrete slab and minimize curing stresses. An uncoupling membrane is added to prevent cracks in the tile covering due to thermal expansion/contraction.