

Making Glass Opaque: Frit, Silicone Still Spandrel Products of Choice

Glass is the primary building product for accommodating views inside and out. It is also capable of blocking those views—with a little help from an opacifier. An opacifier is a substance added to a material, such as glass, to make the system opaque.

When architects want to hide features between floors of a building, they often specify spandrel glass, which is fabricated to be opaque thanks to the application of ceramic frit or silicone coatings. ICD High Performance Coatings in Vancouver, Wash., is a company that produces a silicone product. According to ICD CEO Kris Vockler, silicone and frit are the only products designed for spandrel that will last “the wild micro-climate” that is created in the spandrel cavity.

“Organic coatings (such as latex paints), for example, are not a good choice for spandrels due to the micro-climate changes in a day,” she says. “Heat buildup can go from

very cold to very hot in a single day; [and] humidity can as well.”

While the frit and silicone coatings serve similar purposes, they are applied by different processes. With frit, ceramic enamels are “fired” onto a glass substrate and fused to the glass during the tempering process. Silicone coatings, on the other hand, are applied after tempering either via ambient curing or in low-temperature infrared and convection ovens.

Catoosa, Okla.-based Tristar Glass has the capabilities to do both, as do many glass fabricators. Rob Carlson, the company’s mechanical engineer, says having a blend of the two “really

gives us the best of both worlds. It gives us the versatility to service our customers according to whatever they’re trying to do.”

Carlson says that the prod-

uct used on a particular project typically depends on what the customer requests. In larger projects, one or the other is usually already specified.

“If they don’t specify, a lot of it comes down to the application, the process that it’s going through or what color they’re trying to match,” says Carlson.

For instance, in a structural application, ceramic frit may be the default because it doesn’t require edge deleting prior to the application of sealants or adhesives. Silicone does.

However, if a designer is looking to match an extremely vibrant color, silicone may be preferred.

In a standard spandrel job, it’s not ideal for the two to be used together. “If we use one, we stick to that one. We don’t mix and match,” says Carlson. “Even if the colors are very close, that color discrepancy is not worth the risk of checker-boarding the building.”

Jeff Nixon, general manager of Glass Coatings and Concepts in Monroe, Ohio, which manufactures a ceramic enamel product, says durability is a key characteristic with frit. “The glass in the enamel, and the ceramic pigments contained therein, are completely lightfast, and that is true for every color,” he says. “They won’t fade, blister, peel or otherwise degrade with exposure to the sun.”

Vockler says one interesting aspect of silicone is its elasticity. “At 13 applied mils, the ability to pass fallout protection testing is inherently in the coating,” she says.

Carlson points out that from a fabricator’s perspective, “it’s nice to have both.”

“They both service very well,” says Carlson. “Our roll coater can handle them equally, and switching between the two doesn’t cause any problems or issues.”

—Nick St. Denis ■



Ceramic frit and silicone coatings are still the prominent products used to make spandrel glass opaque.