

Tech Hotline

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Architectural Coatings for Building Facades: Waterproof or Weatherproof

The terms "waterproof" and "weatherproof" are sometimes used interchangeably, although they do not always mean the same thing, particularly in building construction.

The simplest definitions are:

- Waterproof - resists passage of water under hydrostatic pressure
- Weatherproof - resists passage of water in the absence of hydrostatic pressure

Architectural paints and coatings for exterior walls generally satisfy the latter definition in that they resist wind-driven rain and absorption of water in direct contact with vertical surfaces. In most cases fully waterproof coatings are not required for adequate protection of vertical above-grade wall surfaces, as the weatherproof coating provides sufficient resistance to wind driven rain¹.

One common test method that has been used in the coatings industry to measure resistance to wind driven is covered in Federal-Specification TTC-555B, *Coating, Textured (for Interior and Exterior Masonry Surfaces)*. Three 8 x 16 x 2 inch (203 x 406 x 51 mm) concrete masonry units (patio blocks) are first coated with a block filler, which is allowed to dry, and then top coated with the finish coating. The three panels are then mounted to a transparent test box and exposed to water spray at a rate of 60-70 gallons (227-265 L) per hour with simultaneous air pressure equivalent to a 98 mph (158 km/h) wind. The test panels are examined for water leaks and visible signs of dampness on the back side of the masonry. Water leakage is reported, and, if dampness exists, weight gain of the test panels is determined and reported. ASTM D 6904, *Standard Practice for Resistance to Wind-Driven Rain for Exterior Coatings Applied on Masonry*, is a comparable test method that has replaced the federal standard in some specifications.

Some manufacturers describe their architectural coatings as "waterproof" based on meeting the pass/fail criteria of the federal specification: no visible water leaks, and, if dampness exists, the average weight gain of the three test specimens must be less than 0.2 lb (90 g). The ASTM standard, while requiring the same information to be reported, does not have a pass/fail criteria, but leaves it at the discretion of the manufacturer and user.

Most Sto coatings will meet the federal specification criteria. Specifically, StoColor Silcolastic, has been independently tested and validated by SWRI (Sealant Waterproofing and Restoration Institute) in accordance with D 6904 with no leaks and only 1 oz (28 g) of weight gain. However, Sto Corp. has chosen to describe its coatings as "weatherproof" since we believe this to be a more accurate description of the products and their intended use.

1. One exception to this rule is single wythe masonry construction which requires special care to effectively weatherproof the surface. This can sometimes involve multiple layers of coating to fill, prime, coat, etc., depending on levels of rainfall exposure as influenced by climate, building orientation, quality of masonry units and workmanship, etc.