

BOMANITE STABILIZER PRO **GENERAL CHEMICAL TESTING AND ANALYSIS**

Chemical Description: A solvent-free, silane-modified, lithium-silica densifier for concrete and masonry.

In 1997, Law Engineering of Atlanta, Georgia, tested Bomanite Stabilizer Pro for flexural strength, water permeability, water vapor transmission and staining resistance. The mix consisted of 517 pounds of Portland cement; 1,800 pounds of coarse aggregate; 1,230 pounds of fine aggregate; 275 pounds of water, with 5.5% air content. The water-cement ratio was 0.51. This mix had a compressive strength of 3,500-4,000 psi. For water vapor transmission testing, a cement-sand mortar was used. Proportions were prepared according to ASTM C 109: 23.6% cement, 65% sand, and 11.4% water, by weight. Samples were cured in lime-saturated water for seven days at 73 °F, then air-cured for 21 days at 73 °F and 50% relative humidity before coatings were applied. The mortar samples for vapor testing were cured the same way.

Flexural Strength: Results are expressed in pounds per square inch (psi) and carried out per ASTM C-78-94 "Standard Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)."

Untreated: 430

Bomanite Stabilizer Pro: 600

Water Permeability: Performed in accordance with CRD-C 48-73 "Method of Test for Water Permeability of Concrete," shows Bomanite Stabilizer Pro reduces the permeability of concrete over the control.

Untreated: 4.8E-10 (cm/sec)

Bomanite Stabilizer Pro: 6.9E-11

Water Vapor Transmission: Performed in accordance with ASTM E-96-94, "Standard Test Methods for Water Vapor Transmission of Materials." These figures are reported in grains/hour per square foot and show reduced vapor transmission

Untreated: 1.40

Bomanite Stabilizer Pro: 1.20

Stain Resistance: All samples were exposed to the listed materials then scrubbed with water, a nonabrasive cleaner and an abrasive cleaner. Values listed are for abrasive cleaners only; with 0 representing no change in stain and 10 indicating the stain is completely gone.

	Untreated	Bomanite Stabilizer Pro
Tomato Paste	3	8
Gum	3	8
Coffee	8	10
Tea	8	8

BOMANITE STABILIZER PRO **GENERAL CHEMICAL TESTING AND ANALYSIS**

Chloride Ingress: Wiss, Janney, Elstner Associates tested the ability of Bomanite Stabilizer Pro to resist chloride ingress. The test method was based upon techniques developed and used by WJE in a research project of the National Cooperative Highway Research Program as reported in NCHRP No. 244, "Concrete Sealers for Protection of Bridge Structures." For a sealer to meet this standard, it must reduce chloride content by at least 75%.

Untreated: 0% reduction

Bomanite Stabilizer Pro: 91% reduction

Hardness/Abrasion: Mohs Hardness testing was conducted by Arrow Testing Laboratories of Provo, Utah, in January of 2001 using the Arrow protocol and apparatus. 3000-psi steel-troweled concrete that had been in place 10 years was tested. The Mohs hardness scale is a comparative scale. The absolute scale of hardness equivalent is given in parentheses following the Mohs number.

Untreated: 3.5 (9)

Bomanite Stabilizer Pro: 6.5 (86)

Water Penetration: In January of 2001, Arrow Testing Laboratories of Provo, Utah, used a water cylinder and 3000-psi steel-troweled concrete that had been in place for 10 years. The slab was tested through a 30-minute soak-in period. The cylinder is graduated in inches; the figures below represent column inches absorbed over the test period.

Untreated: .7 (1.78cm)

Bomanite Stabilizer Pro: .1 (.25cm)