Semstone 145

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Epoxy novolac
Description	100% solids, high performance, novolac epoxy lining system designed for concrete. It is a semi-leveling coating and may be applied as an aggregate filled and/or reinforced coating system. Specially formulated to withstand some of industry's most aggressive chemicals, including 98% sulfuric acid, as well as many organic chemicals and solvents.
Features	• Excellent resistance to chemical attack • Excellent abrasion and impact resistance • Exceptional thermal shock resistance • Superior acid resistance • Superior bonding qualities • High cohesive strength • Low permeability • Low odour
Colour	Light Grey (U74P)
Primer	Semstone 110 Primer **Note:** For substrates with out-gassing concerns use Carboguard 1340. Primer should be applied while the substrate temperature is decreasing.
Film Build	800 microns dry per coat Application thickness may vary from 0.75-3.8 mm depending on expected service conditions (i.e., chemical exposure, temperature, traffic load and other mechanical abuse, immersion service vs. splash-spill, etc.). Consult Carboline's Technical Service Department for specific thickness recommendations. In addition, coverage rates will be affected by the condition of the surface being coated (degraded vs. smooth, steel vs. concrete, etc.).
Typical Uses	• Process slabs • Tank farm floors • Chemical loading and unloading areas • Spill containment areas
Solids Content	By Volume 100% +/- 2%
Theoretical Coverage Rates	1.25 m²/l at 800 microns dry. With aggregate included application thickness may vary from 0.75-3.8 mm, depending on expected service conditions and system design. See Application Procedures for more specific coverage information.
VOC Values	**As Supplied** : 0

SUBSTRATES & SURFACE PREPARATION

General	Proper preparation is critical to ensure an adequate bond. The substrate must be dry and free of all wax, grease, oils, fats, soil, loose or foreign materials and laitance. Laitance and unbonded cement particles must be removed by mechanical methods, i.e., abrasive blasting or scarifying. Other contaminants may be removed by scrubbing with a heavy-duty industrial detergent and rinsing with clean water. For recommendations or additional information regarding substrate preparation, please contact Carboline's Technical Service Department.

SUBSTRATES & SURFACE PREPARATION

Steel	Equipment base plates, etc. to be coated along with the concrete should be abrasive blasted to a near white metal finish, SSPC-SP 10 (AS 1627.4 Sa 2½), with a 35 to 50 microns anchor profile.
Concrete or CMU	Concrete should be properly cured for 28 days and have the following characteristics: Substrate tensile strength of at least 300 psi. pH in the range of 7 to 11. The surface must show open pores throughout and have a sandpaper texture.

MIXING & THINNING

Mixing	Premix part A for 30 seconds using a Jiffy-type mixer. Pour part B into part A and mix thoroughly for two minutes.
Ratio	4:1 by volume (Part A : Part B)
Pot Life	45-60 minutes at 24°C* *Significantly less at elevated temperatures

APPLICATION PROCEDURES

General

Broadcast Application (AFC-Broadcast)
Apply a base coat at the specified thickness using a squeegee or notched trowel. For a 1.5mm system apply a 0.63mm base coat and for a 3.1mm system apply a 1.3 mm base coat. Immediately after applying the base coat begin broadcasting the aggregate until a dry appearance is achieved. Note: the use of a 20/40 mesh aggregate is recommended.
After the base coat has cured remove the loose aggregate. Apply a 0.25-0.38mm top coat using a squeegee or roller.

Blended Application for Horizontal Surfaces (AFC-Blended)
After mixing part A and B split the mix into two 20-litre buckets. While continuing to mix with a Jiffy mixer, slowly add the aggregate.
Note: A 2:1 sand to liquid weight ratio will produce a trowel-like consistency. A 3:1 ratio will give a grout-like consistency. The use of 20/40 mesh silica aggregate is recommended.
Apply the mixture at the desired thickness using a notched trowel. After the surface has cured it must be washed with soap and water prior to re-coating.

Blended Application for Vertical Surfaces
When mixing a large kit, split the mix of Part A and Part B into two 20-litre buckets. While continuing to mix with a Jiffy mixer, slowly add the aggregate and thixotrope.
The mix ratio for a vertical blended mortar will be (by volume): one part liquid to one part aggregate to a half part (or up to one part) thixotrope. The use of 80/120 mesh silica aggregate and Semstone Thixotrope D is recommended.
Apply the mixture at the desired thickness using a notched trowel. After the surface has cured it must be washed with soap and water prior to re-coating.

Reinforced (AFRC-Broadcast)
A fiberglass scrim cloth may be added to the 3.1mm broadcast system. Apply the cloth into the base coat prior to applying the aggregate.

Reinforced (AFRC-Blended)
A fiberglass scrim cloth may be added to the 3.1mm blended system. Apply a 0.63-0.89mm base coat and then lay the scrim cloth into the base coat.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	10°C (50°F)	10°C (50°F)	10°C (50°F)	0%
Maximum	32°C (90°F)	32°C (90°F)	32°C (90°F)	90%

Substrate temperature should be greater than 3°C above dew point.
For optimal working conditions, substrate temperature must be between 15°C and 27°C. Measure the surface temperature with a surface thermometer. Cold areas must be heated until the slab temperature is above 10°C. This will allow the material to achieve a proper cure. Also, a cold substrate will make the material stiff and difficult to apply. Warm areas or areas in direct sunlight must be shaded or arrangements made to work during evenings or at night. A warm substrate (15-27°C) will aid in the material's workability; however, a hot substrate (27-37°C)or a substrate directly in the sun will shorten the material's working time and can cause other phenomenon such as pinholing and bubbling.
If the temperature is expected to drop below 10°C use Semstone 145 CT.
Consult Carboline Technical Service if conditions are not within the recommended guidelines.

CURING SCHEDULE

Surface Temp.	Chemical Service	Dry to Touch	Firm
24°C (75°F)	36 Hours	12 Hours	24 Hours

*And 50% relative humidity

CLEANUP & SAFETY

Cleanup	Thinner #76, Thinner #19 or Thinner #10 solvents are recommended for clean up of material spills. Use these materials only in strict accordance with manufacturer's recommended safety procedures. Dispose of waste materials in accordance with government regulations.
Safety	The selection of proper protective clothing and equipment will significantly reduce risk to injury. Body covering apparel, safety goggles and impermeable gloves are highly recommended.
Ventilation	The use of a NIOSH/MSHA approved respirator using a #TC-23C-738 organic vapor or a #TC-23C-740 organic vapor acid gas cartridge is mandatory. Use only with adequate ventilation.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 24 months Part B: 24 months
Shipping Weight (Approximate)	1 gallon kit: 5.3 kg 5 gallon kit: 25.7 kg
Storage Temperature & Humidity	10-24°C 24 hours before application, all components should be stored at a 21-29°C to facilitate handling.
Flash Point (Setaflash)	Part A: 77°C Part B: 116°C
Storage	Store indoors

WARRANTY

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