Semstone 884

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Description	SEMSTONE 884 is a vinyl ester polymer concrete which incorporates proprietary non-shrink technology into its formulation, making it the first practical vinyl ester polymer concrete for use as a concrete topping. It is recommended for use in concentrated nitric acid service and other strong oxidizers. SEMSTONE 884 is an excellent alternative to acid brick. It is also used as a construction material for pouring pump foundations and small tank foundations. It can be used for pre-casting of sumps and trenches.
Color	Gray
Finish	N/A
Primer	SEMSTONE 8084 Primer: All surfaces to which SEMSTONE 884 will be applied must be primed, including steel as well as concrete. Use only SEMSTONE 8084 Primer. Mix and apply in Accordance with instructions found in our technical bulletin on SEMSTONE 8084 Primer. Apply one coat of primer. Allow to cure before applying SEMSTONE 884 Vinyl Ester Polymer Concrete.
Topcoats	Not Applicable

SUBSTRATES & SURFACE PREPARATION

General	Surfaces must be dry and free of dirt, dust, oil, grease, chemicals and all other contaminants immediately prior to applying primer of SEMSTONE 884.
Concrete or CMU	1. New concrete generally should be cured a minimum of 28 days. NOTE: Check with Carboline's Technical Service for recommendations regarding concrete cured less than 28 days. 2. Concrete must be structurally sound and must not contain any accelerators or curing compounds. 3. Remove all oil and grease. 4. Remove all surface laitance and expose sound concrete. We recommend abrasive blasting to do this. However, other methods, such as acid etching and neutralizing, may be used. 5. In general, any existing coating should be completely removed. In certain instances this may not be necessary, but consult with Carboline's Technical Service first. Always remove coatings which have failed due to lack of adhesion or thermal shock. 6. Locate all expansion joints, control joints, floor drains, equipment base plates and mid-floor termination points. Handle them according to recommended Construction Details. 7. New concrete generally should be cured a minimum of 28 days. NOTE: Check with Carboline's Technical Service for recommendations regarding concrete cured less than 28 days. 8. Concrete must be structurally sound and must not contain any accelerators or curing compounds. 9. Remove all oil and grease. 10. Remove all surface laitance and expose sound concrete. We recommend abrasive blasting to do this. However, other methods, such as acid etching and neutralizing, may be used. 11. In general, any existing coating should be completely removed. In certain instances this may not be necessary, but consult with Carboline's Technical Service first. Always remove coatings which have failed due to lack of adhesion or thermal shock. 12. Locate all expansion joints, control joints, floor drains, equipment base plates and mid-floor termination points. Handle them according to recommended Construction Details.
Special Instruction	Mask surfaces that are not to be coated. This material is difficult to remove, once applied.

PERFORMANCE DATA

Test Method	Results
Coefficient of Thermal Expansion	(ASTM C-531) 13x10-6 in/in°F
Compressive Strength	(ASTM C-579) 12,000 - 15,000 psi
Density	130 lbs./cu. ft.
Effective Shrinkage (glass deflection)	(ASTM C-883) No Deflection
Flexural Strength	(ASTM C-580) 1,500 - 2,000 psi
Hardness	(ASTM D-2240 Shore D) 75
Shrinkage	(ASTM C-531) None
Tensile Strength	(ASTM C-307) 1,700 - 2,000 psi
Thermal Compatibility to Concrete	(ASTM C-884) Passes
Water Boil Absorption	(ASTM C-413) Less than 1%
Working Time @ 75°F	45 minutes (significantly less at elevated

MIXING & THINNING

Mixing

1. Determine the number of units of SEMSTONE 884 to be mixed in the batch. Mix only as much material as can be placed and finished before material begins to set. CAUTION: At elevated temperatures, or in direct sunlight, working time will be significantly lowered. 2. Use horizontal blade motar mixer with a capacity of at least twice the volume of the material to be mixed (i.e., if mixer capacity is 10 cu. ft., mix no more than 5 cu. ft. of material in a batch). 3. Mixer should be dry and clean of all foreign matter. 4. Mixer should be in good condition and rubber blades on ends of mixing arms should make full contact with mixing tub. 5. Mix only complete units. If any of the components are spilled, discard the batch (see paragraph 2 under IMPORTANT NOTES). 6. Pour all of Part B into the bucket holding Part A and blend for 2 minutes using a Jiffy type mixer. 7. Close the safety cover. Turn on the mortar mixer. As it is running, pour in all of the mixture. Be sure to scrape all of it from the bucket. 8. Slowly add all the aggregate and continue to mix until no dry aggregate appears. 9. Discharge the mixed material into a clean wheelbarrow, turn the mixer off, and scrape it clean. NOTE: The first batch may be drier and stiffer than succeeding batches. This is to be expected and does not effect performance.

PLACING: 1. Place the mixed material onto the primed surface. 2. Maintain a minimum thickness of at least 1/2 inch. Screed strips are helpful in maintaining minimum thickness. A vibrating screed may facilitate placement. Do not feather edge. Key mid-floor termination points into the slab (see Construction Details.) 3. Finish by hand tamping using a flat trowel or sponge rubber float. 4. Optionally use styrene monomer as a smoothing liquid. If you use styrene monomer, mist it over the freshly placed material and spread it using clean, flat trowels or sponge rubber floats. CAUTION: Styrene monomer smoothing liquid is flammable. 5. If a more pronounced nonskid surface is desired, broadcast a sharp, dry grit onto the still wet surface. 6. If work is interrupted, or at the end of the day, terminate the topping in a straight and square line. 7. When used as a material of construction, SEMSTONE 884 may be formed and poured using standard concrete construction techniques. Line all forms with polyethylene. 8. Vertical surface intended for constant immersion service can be formed and poured. Alternatively, our SEMSTONE 870 Coating and Lining system may be used for vertical surfaces.

CURING SCHEDULE

Surface Temp.	Chemical Service	Foot Traffic	Light Vehicular
24°C (75°F)	24 Hours	8 Hours	24 Hours

CLEANUP & SAFETY

Cleanup | Clean all tools and equipment with acetone.

PACKAGING, HANDLING & STORAGE

Storage	Keep all SEMSTONE 884 components tightly sealed in their original containers until ready for use. Use SEMSTONE 884 within three months of date of manufacture. Refer to batch number on label for date of manufacture.

WARRANTY

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