SeaShield Marine Systems

SeaShield 550 Epoxy Grout

Encapsulation and Repair Grout for Concrete, Timber and Steel

SeaShield 550 is a 3-component water displacing epoxy resin/aggregate formulation which provides a durable, well bonded repair to concrete, timber and steel below water.

Uses

SeaShield 550 Epoxy Grout is designed for underwater application. Because of its relatively long pot life, it is easy to handle yet still provides high early strength.

It can either be placed by pouring into forms or pumped into place and is typically used for rebuilding piers, jetties and barrier walls. It is also very effective for chemical anchoring of bolts and anchors in rails, equipment bases and other structural applications.

Physical Properties

(unmixed) @ 77°F

Component "A" (resin):

Specific Gravity	1.13
Viscosity	700 cps
Color	Clear
Ratio by Weight	66%

Component "B" (hardener):

Specific Gravity	0.96
Viscosity	400 cps
Color	Amber
Ratio by Weight	33%

Component "C" (Aggregate I):

Free Flowing Non-Dusting Powder	
Color	Neutral

Mixing Ratios

For 3.5:1 and 5:1 Mixing Ratio - Hand Placing or Pumping for Aggregate I

Aggregate Bag Weight	Solid to Liquid Ratio	A - Volume gal	B - Volume gal	Yield ft^3
44	3.5	0.89	0.52	0.46
44	5.0	0.63	0.37	0.40

These mix designs are given as a guide. Site temperature, material temperature, placing thickness may cause these to be amended. A trial mix should always be checked before proceeding.

NOTE: Component "C (Aggregate I)" is graded Silica Sand treated with Silane and other organic reactive compounds. This allows for non-dusting during the mixing application. When fully cured, the epoxy resin is chemically bonded to the silica surface. This provides higher physical properties such as compressive tensile and impact strength. This will also decreased water absorption and permeation.

Cure Schedule

Pot Life 200 g.	@ 77°F	150 Minutes
Pot Life 200 g.	@ 100°F	45 Minutes
*Tack-free time	@ 60°F to 80°F	10 to 20 Hours
*Tack-free time	@ 40°F to 59°F	20 to 40 Hours
Full cure	@ 60°F to 80°F	30 to 60 Hours
Full cure	@ 40°F to 59°F	+120 Hours

Cure time is considerably longer at colder temperatures.

For applications below 55°F, use SeaShield 550 Winter Grade.

**Based on 2 inch cubes.*

Minimum Application Temperature

SeaShield 550 Epoxy Grout cures at temperatures down to 32°F.

Moisture Sensitivity

SeaShield 550 Epoxy Grout has good wet adhesion and good water displacement capabilities.

Physical Properties of Cured System

(7 day cure @ 77°F w/ 3.5:1 and 5:1 mix ratio)

Compressive Strength	ASTM C579	10,500 PSI
Tensile Strength	ASTM C307	2,200 PSI
Bond / Shear Strength	ASTM C882	2,000 PSI
Shrinkage	ASTM C531	0.07% Max.
Water Absorption	ASTM C413	0.45% Max.

Surface Preparation

Surface preparation is very important and will improve the adhesion and extend the life of the grout:

a) Must be cleaned free of old existing coatings. New concrete should hydrate a minimum of 5 days prior to placement of grout.

b) Remove all oils, greases, dirt and wax solutions from surface.

c) High-pressure waterblast, sandblast or shot blast surface to remove contaminants which will interfere with proper adhesion. Water blast shall be done at a minimum of 3500 PSI.

Mixing

Pour component "A" resin & component "B" hardener into a 5 gallon pail. Agitate with a low speed mixer (200-300 rpm) for at least 3 minutes. When mixing, occasionally scrape the sides & bottom to make sure the entire product is mixed consistently. Slowly add the aggregate when mixing. The product is mixed properly when an even color is achieved without streaks and all the aggregate has been mixed with the resin.

Yield

3.5:1 - 1.42 gallon 550 A & B with 44 lbs. of Aggregate I yields = 0.46 cubic feet

5:1 - 1 gallon 550 A & B with 44 lbs. of Aggregate I yields = 0.40 cubic feet

Application

Placing by Hand Pouring into Forms

No priming is required. Once mixed, pour into formwork, ensuring it is well compacted, vibrating where possible. When using wood forms, use paraffin wax or polyethylene sheet to ensure easy formwork removal after pouring.

Placing by Pumping

It is recommended that SeaShield 550 A, B & C should be stored at 68°F to 86°F (20°C to 30°C) for 24 hours prior to use for optimum pumping and productivity.

Follow the typical design mix outlined under Mixing Ratio.

NOTE: Prior to using the pump, all lines shall be primed by circulating the SeaShield Hose Lubricant.

Pumping of this lubricant is normally very rapid. Make sure all SeaShield Hose Lubricant is pumped out of the hose prior to pumping mixed SeaShield 550 Epoxy Grout.

Clean Up

Pumping equipment is best cleaned with SeaShield Equipment Cleaner Solution. Recirculating using a sponge "pig" is an efficient cleaning procedure.

Storage

Store all 3 components in a dry, well-ventilated area at temperatures above 50°F. Shelf life of unopened components is 2 years.

Packaging

(3.5:1 Ratio)
SeaShield 550 - 1.42 Gallon Units (A & B)
Aggregate I - 44 lbs. per bag

(5:1 Ratio)
SeaShield 550 - 1 Gallon Units (A & B)
Aggregate I - 44 lbs. per bag

Denso®

DENSO NORTH AMERICA

HOUSTON:
9747 Whithorn Drive,
Houston, Texas,
U.S.A. 77095
Tel: 281-821-3355
Fax: 281-821-0304

TORONTO:
90 Ironside Crescent,
Unit 12, Toronto,
Ontario, Canada M1X1M3
Tel: 416-291-3435
Fax: 416-291-0898

www.densona.com

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