

SeaShield Marine Systems

SeaShield 550 Epoxy Grout

Encapsulation and Repair Grout for Concrete and Steel

SeaShield 550 is a 3-component water displacing epoxy resin/aggregate formulation which provides a durable, well bonded repair to concrete 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 hand 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	1.11
Viscosity	600 cps
Color	Light Gray

Component "B" (hardener):

Specific Gravity	.98
Viscosity	100 cps
Color	Amber

Component "C" (aggregate):

Free Flowing Powder	
Color	Neutral

*Aggregate I or II.

Mixing Ratios

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

	Wt.	Vol.
"A"	80	78
"B"	20	22
"C" - Aggregate I	500	300

For 10:1 Mixing Ratio - Hand Placing
for Aggregate II

	Wt.	Vol.
"A"	80	78
"B"	20	22
"C" - Aggregate II	1000	600

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.

Cure Schedule

Pot Life 200 g. @ 77°F 120 Minutes

*Tack-free time @ 50°F/77°F 20/10 Hours

*Through cure @ 50°F/77°F 60/30 Hours

Cure time is considerably longer at colder temperatures.

*Based on 2 inches coverage thickness.

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 Testing

(7 day cure @ 77°F w/ 5 to 1 mix ratio)

Compressive Strength	ASTM C579	9,000 PSI
Tensile Strength	ASTM C307	2,000 PSI
Shear Strength	ASTM C882	150 PSI
Shrinkage	ASTM C531	0.07% Max.
Water Absorption	ASTM C413	0.45% Max.

Surface Preparation

This is the single most important step. The life of the grout system will be extended considerably by adhering to the following recommendations:

- Must be cleaned free of old existing coatings. New concrete should cure a minimum of 28 days.

- b) Remove all debris from working surfaces.
- c) Remove all oils, greases, dirt and wax solutions from surface.
- d) Sandblast, shotblast or hydroblast surface to remove contaminants which will interfere with proper adhesion.

Mixing

Please note that for thickness of SeaShield 550 Epoxy Grout, the following aggregate mix shall be used:

- a) **Pumping or pouring at less than 2"** – Use 1 gallon 550 resins and 1 ea. 44 lb bag of Aggregate I
- b) **Pouring at greater than 2"** – Use 1 gallon 550 resins and 2 ea. 44 lb bags of Aggregate II

Supplied as a three package system. Open component "A" and agitate resin until evenly blended. Open container "B", mix well and pour entire contents into component "A" container. Agitate with low speed mixer (200-300 rpm) until one even color develops. Be sure to scrape the sides and bottom of the container while mixing. Add aggregate to the premixed resin and mix thoroughly.

Yield

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

10:1 - 1 gallon 550 A & B with 88 lbs. of Aggregate II (pourable only) yields = 0.70 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. Use paraffin wax or polyethylene sheet to ensure easy formwork removal after pouring.

Placing by Pumping

It is recommended that SeaShield 550 A & B 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.

In practice, a mix of 44 lbs. Aggregate I plus 1 Gallon SeaShield 550 (A & B) is an ideal volume. Immediately after mixing, it should be transferred into the hopper of the peristaltic pump. **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 equip-

ment cleaner solution. Recirculating using a sponge "pig" is an efficient cleaning procedure. Use cleaning solvent such as Acetone or MEK. **CAUTION:** This solvent is flammable so there must be no open lights, flames, sparking motors or pilot lights in the vicinity. Smoking near the solvent is to be forbidden. All equipment must be cleaned immediately after use.

Safety and Toxicity

Epoxy systems are capable of producing severe injury to, or destruction of, skin and eye tissues. They are classified as corrosive for shipping purposes. Precautions must be taken to prevent prolonged or repeated skin contact and it is essential to protect the eyes from splashes. Protective clothing, rubber gloves and chemical goggles should be worn when working with these products.

Some people become sensitized when working with epoxy resin systems. The sensitization may appear in the form of skin or respiratory reactions. Avoid breathing vapors, particularly if these products are used in a confined area. Face mask with respirator #1224 is usually adequate. Air supplied mask is suitable for use in confined areas.

Storage

Store in heated area and on pallets. Do not allow products to freeze. Shelf life in unopened containers is two years.

Packaging

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

Warranty

Manufacturer WARRANTS that the product conforms to its chemical description and is reasonably fit for the purpose stated on its Technical Bulletin when used in accordance with its directions. Manufacturer makes NO OTHER WARRANTY either expressed or implied. Buyer assumes all risk in handling.



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

A Member of Winn & Coales International