

# Tyfo® SW-1 Epoxy Underwater Epoxy

## DESCRIPTION

Tyfo® SW-1 is a two part, 100% solids epoxy formulation consisting of epoxy resins, hardeners and inert fillers specifically designed for underwater applications on steel, concrete and masonry surfaces. Tyfo® SW-1 is used in fiber wrap applications, with or without an aggregate, as a protective coating or repair mortar to protect against damage and erosion in splash zone areas.

## USES

Tyfo® SW-1 is formulated for use as the patching material, primer and adhesive in fiber wrap applications. Tyfo® SW-1 can also be used to coat or repair concrete and steel materials in underwater and splash zone applications providing protection against corrosion, erosion and deterioration from salt or fresh water.

## COLORS

The standard color of Tyfo® SW-1 is gray. Special colors are available subject to minimum order quantities.

## MIXING

Tyfo® SW-1 should be mixed above water and then transported below water. Premix Part A (base) and Part B (hardener) individually. Then combine Part A and Part B in a clean container and mix thoroughly with a slow speed motor and "Jiffy" type mixer. Scrape the side of the container at least once during mixing.

## MORTAR GROUT

A mortar grout can be made by mixing clean, dry silica sand with an equal volume of Tyfo® SW-1.

## PACKAGING

Order in 4-gallon pre-measured units in 5-gallon containers.

## MIX RATIO

100.0 parts of component A to 74.0 parts of component B by volume. (100 parts of component A to 56.0 parts of component B by weight.)

## SHELF LIFE

Two years in original, unopened and properly stored containers.

## STORAGE CONDITIONS

Store at 50° to 90° F (10° to 32° C). Avoid freezing.

## CERTIFICATE OF COMPLIANCE

- Will be supplied upon request, complete with state and federal packaging laws with copy of labels used.
- Material safety data sheets will be supplied upon request.
- Possesses 0% V.O.C. level, per ASTM D-2369.

## HOW TO USE THE TYFO® SW-1 EPOXY

### SURFACE PREPARATION

Surface must be structurally sound, clean, free of loose or deteriorated concrete or coatings, marine growth or any other material which would impair adhesion. Sand blasting or high pressure water blasting are preferred methods of surface preparation. Application of Tyfo® SW-1 should begin promptly after surface preparation to reduce possibility of surface contamination.

### APPLICATION

Apply Tyfo® SW-1 at water and surface temperatures of 55° F or higher. Mix the Tyfo® SW-1 above water and transport underwater after mixing. Prime the surface by scrubbing the surface with neat Tyfo® SW-1. Apply by pressing the Tyfo® SW-1, mixed with or without aggregate, onto the surface with gloved hand or trowel. Work the Tyfo® SW-1 firmly into the surface to displace water. Build up the material to the desired thickness. The mortar grout (1:1 by volume) should be used for deep patching and the repair should be made in lifts of no more than 1.0 inch at a time. Allow each lift to achieve initial set prior to applying the next lift.

## HORIZONTAL ANCHOR BOLT GROUTING

Before grouting ensure the anchor hole is free of all debris and foreign objects. Prime by scrubbing the anchor bolt hole with neat Tyfo® SW-1. Fill approximately half the hole with the Tyfo® SW-1 and push the anchor bolt into the hole, twisting the bolt to make sure full contact is made. Pack the hole with additional Tyfo® SW-1 to finish with the substrate

## COVERAGE

Tyfo® SW-1 coverage rates are approximate and will vary with temperature, surface porosity and texture. Following is the approximate coverage on a smooth surface:

Tyfo® SW-1 or mortar	sq. ft./gal.	thickness
	50	30 mils (1/32")
	25.5	62 mils (1/16")
	12.8	125 mils (1/18")

One gallon of Tyfo® SW-1 mixed with one gallon of dry aggregate will yield approximately 1.6 gallons of mortar.

## EPOXY MATERIAL PROPERTIES AT 75° F

PROPERTY	ASTM METHOD	TYPICAL TEST VALUE
Mixing ratio, by wt.		100:56
Specific Gravity		1.6
Viscosity A & B mixed, cps		14,000-18,000
Gel Time, 65° F, hours		2.5 - 3.5
7 day compressive strength, psi	D-695	7,000 - 8,000
7 day compressive strength, mortar, psi (Tyfo® SW-1:sand – 1:1 by volume)	D-695	8,000 - 9,000
Shore D Hardness	D-2240	80 - 85

Values presented are typical laboratory data.

## CAUTION!

Do not thin or dilute Tyfo® SW-1. Do not mix or apply below 55°F. Use only clean, oven dry aggregate to produce mortar. Tyfo® SW-1 is not designed to resist hydrostatic pressure from the negative side. Agitation of the product once under water should be minimized. When applying in a splash zone, protection should be provided from wave action under the product has reached initial cure (8-10 hours). Due to the many variables which can exist in underwater applications, a test application under job site conditions is recommended prior to the start of every project to evaluate both application techniques and adhesion properties.

### COMPONENT A - Irritant:

Component A contains epoxy resin. Vapors can cause respiratory irritation. Contact may cause skin or eye irritation. Can cause sensitization after prolonged or repeated exposure. Use safety goggles and chemical resistant gloves. Use only with adequate ventilation.

### COMPONENT B - Irritant:

Component B is corrosive and contains amines. Contact with skin may cause severe burns. Avoid eye contact. Product is a strong sensitizer. Use of safety goggles and chemical resistant gloves recommended. Remove contaminated clothing. Avoid breathing vapors. Use adequate ventilation. Use of an organic vapor respirator recommended.

### FIRST AID

In case of skin contact, wash immediately and thoroughly with soap and water. For eye contact, flush immediately with water for 15 minutes and consult a physician. For respiratory problems, remove person immediately to fresh air.

### CLEANUP

Clean tools and application equipment immediately after use with xylene or a similar approved solvent. Clean spills and drips while wet with approved solvent. Collect with absorbent material. Dispose of in accordance with current local, state and federal regulations. Read material safety data sheet before using. Uncured material can be removed with approved solvent. Cured materials can only be removed mechanically.

### SHIPPING LABELS CONTAIN

- State specification number with modifications, if applicable
- Component designation
- Type, if applicable
- Manufacturer's name
- Date of manufacture
- Batch name
- State lot number, if applicable
- Directions for use
- Warnings or precautions required by law

### SHIPPING

Freight Class 60

**KEEP CONTAINER TIGHTLY CLOSED.  
NOT FOR INTERNAL CONSUMPTION.  
CONSULT MATERIAL SAFETY DATA SHEET  
(MSDS) FOR MORE INFORMATION.  
KEEP OUT OF REACH OF CHILDREN.  
FOR INDUSTRIAL USE ONLY.**

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