FYFE
Tyfo® FIBRWRAP® Systems

ISO 9001:2008 REGISTERED FIRM

Tyfo® 103
High-Performance Adhesive

DESCRIPTION
Tyfo® 103 Standard Injection Epoxy is a two-component, standard viscosity, high modulus epoxy adhesive.

USE
Recommended for the repair of cracks in concrete with automatic meter, mix and dispense pressure injection equipment.

ADVANTAGES
- Good high temperature properties
- Resistance to creep and stress relaxation
- Excellent adhesion under adverse application conditions (cold, wet concrete)

PACKAGING
Order in 150-gallon or 15-gallon units.

MIX RATIO
Two parts component A to 1 part component B by volume; 100:43 by weight.

SHELF LIFE
Three years in original, unopened and properly stored containers.

STORAGE CONDITIONS
Store at 40° to 90° F (4° to 32° C) away from sunlight in a dry place. 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.
- Tyfo® 103 Standard Injection Epoxy meets or exceeds the properties of a material specified in ASTM C-881-90 Type I and IV, Grade 1.

HOW TO USE TYFO® 103 INJECTION EPOXY

SURFACE PREPARATION
The concrete must be sound and free of all bond-inhibiting substances. Accumulations of water must be removed with compressed, oil-free air.

MIXING
Tyfo® 103 is a two-component system designed specifically for use with automatic meter, mix and dispense equipment. Mix ratio is 2 parts of component A to 1 part of component B by volume. Application equipment should be routinely checked daily to determine that the equipment is metering and proportioning the components accurately and is delivering thoroughly mixed material.

APPLICATION
Apply material in accordance with established industry procedures. Use only trained personnel with experience in pressure injection application. Allow for adequate cure of the epoxy adhesive before the repaired structure is returned to service.

LIMITATIONS
The recommended minimum substrate temperature during installation is 50° F (10° C). The maximum sustained in-service temperature of fully cured material is approximately 120° F (49° C) in applications where substantial and sustained shear stresses are encountered. The material is not recommended for application in wide cracks above 80° F (27° C). The installed thickness should not exceed 0.25-inch unless preplaced aggregate is used to dissipate heat generated during the curing process.

EPOXY MATERIAL PROPERTIES

Curing Schedule, 7 days at 73° F (23° C) +/-4° F.
Test temperature, 73° F (23° C) +/-4° F, unless otherwise specified.

PROPERTY	ASTM METHOD	TYPICAL TEST VALUE*
Density (Pound/Gallon)	D-1475	Part A = 9.4 (4.3kg) Part B = 8.1 (3.7kg) Mixed = 9.0 (4.1kg)
Viscosity, cps	D-2393	Part A 420 Part B 160 Mixed 360
Viscosity @ 50° F (10° C), cps	D-2393	Mixed 1,450
Gel Time, 5 minutes	C-881-90	14 minutes
Tensile Strength, psi	D-638	9,000 (62.1 MPa)
Elongation at Break, Percent	D-695	2.0%
Compressive Yield Strength, psi	D-695	16,000 (110.3 MPa)
Compressive Modulus, psi	D-695	400,000 (2.8 GPa)
Heat Deflection Temperature, F (C)	D-648	140° F (60° C)
Wet Slant Shear Strength[1]	AASHTO T-237	Cement Mortar Failure[2]

(1) Cure schedule, 7 days at 40° F (4° C).
(2) Compressive strength of cement mortar, >4,500 psi.
* Specification values can be provided upon request.

CAUTION!

COMPONENT A - Liquid epoxy resin. HMIS Health Hazard Rating: 2 (Moderate Hazard). Causes skin and eye irritation. May cause allergic reaction. Harmful if swallowed. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid prolonged or repeated contact with skin.

COMPONENT B - Liquid epoxy hardener. HMIS Health Hazard Rating: 3 (Serious Hazard). Contains alkaline amines. Danger! Corrosive liquid. Causes severe eye and skin burns. May cause allergic skin and respiratory reaction. Do not get in eyes, on skin or clothing. Avoid breathing vapor. Keep container closed when not in use. Use only with adequate ventilation. Wash thoroughly after handling. Combustible. Keep away from heat or open flame.

SAFETY PRECAUTIONS

Avoid breathing vapors. Avoid contact with eyes and skin. Use of an approved respirator with an organic absorption cartridge is recommended for possible vapors. Rubber gloves, rubber boots, and protective suits are recommended for handling and application of this material. Safety glasses or a face shield are recommended to prevent eye contact.

FIRST AID

In case of skin contact, wash thoroughly with soap and water. For eye contact, flush immediately with plenty of water; contact physician immediately. For respiratory problems, remove to fresh air. Wash clothing before reuse.

CLEANUP

Collect with absorbent material, flush with water. Dispose of in accordance with local disposal regulations. 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

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.

Fyfe Co. LLC

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