

# Tyfo® P

## Polymer Cement Repair Mortar

### DESCRIPTION

Tyfo® P is a two-component, quick-setting, polymer-modified, cementitious mortar for vertical and overhead concrete and masonry repairs.

### USE

This material is recommended for use with the Tyfo® Concrete Repair System in overhead and vertical patching of scaled and spalled concrete. It is also suitable for resurfacing damaged concrete. Tyfo® P has excellent bonding strength to sound concrete and exhibits high compressive strength. Because of its fast-setting properties, thicker patches are possible. It is suitable for interior and exterior applications.

### ADVANTAGES

- Fast-setting for repairs up to 4" (100mm) thick
- High compressive strength
- For overhead and vertical applications
- Excellent bond to sound concrete
- For interior and exterior applications

### COVERAGE

Approximately 0.48 cubic feet (0.01m<sup>3</sup>) per 62 lb. unit.

### PACKAGING

Two components - one 54 lb. (24kg) bag of Tyfo® P dry powder and a one-gallon (3.8L) pail of Tyfo® P liquid.

### SHELF LIFE

Two years in the original, unopened package when kept in a dry area above freezing.

### STORAGE CONDITIONS

Store liquid units in a dry area above 32° F (0° C). Store bags in a dry area away from flames. Plastic tarping is recommended. 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.

### HOW TO USE THE TYFO® P REPAIR MORTAR

#### FOR EXPOSED REINFORCING STEEL

Exposed rebar may be treated with the anti-corrosion systems of Tyfo® CIS or Tyfo® CB (see data sheets). All loose rust and scaling should be removed, preferably by sandblasting to white metal prior to treating. For best results, a bond coat consisting of a slurry mixture of Tyfo® P or Tyfo® CB should be brush-applied to the entire exposed area. Apply the next layers of Tyfo® P topping before the bond coat has dried.

#### SURFACE PREPARATION

New concrete must have a minimum cure of 3 days. Old concrete must be sound, clean and rough. The surface must be prepared using a scabber, bushhammer, shotblast or scarifier which will provide a minimum surface profile of 1/8-inch (3mm) and expose the aggregate of the concrete. The final step of cleaning is to remove all residue with a vacuum system, pressure washer, compressed air, broom, or similar.

#### MIXING

Pour the Tyfo® P liquid into a suitable mixing container. Add the appropriate amount of Tyfo® P dry powder to the Tyfo® P liquid. Mix rapidly for 2 to 3 minutes until uniformly blended. Apply immediately. NOTE: Tyfo® P has a working time of 10 minutes. Do not mix more material than can be applied in that time frame.

Smaller quantities may be mixed with a drill and "Jiffy"-type mixing blade. For large jobs use a paddle-type mixer. All materials should be in the proper temperature range of 60° to 90° F (16° to 32° C) prior to use.

#### APPLICATION

Apply the properly mixed Tyfo® P while the bond coat is still wet. Trowel the material onto the prepared surface being repaired. Trowel flush with surface and allow it to setup. Clean tools immediately after use with water.

Note: Application of Tyfo® P should be made in lifts of 1/8-inch minimum to 1 1/2-inch maximum. For thicker repairs, allow material to set up slightly prior to adding subsequent lifts. When primary lifts are slightly set up, scoring the surface will provide an additional mechanical lock for the subsequent lifts.

#### WORKING TIME

Tyfo® P has a working time of approximately 10 minutes at normal ambient temperatures between 60° to 80° F (16° to 27° C). If material begins to harden, it should be discarded.

#### LIMITATIONS

Do not apply when the temperature falls below 45° F (7° C). Prevent repair from freezing until a minimum strength of 1,000 psi (7 MPa) (very firm to the touch) is achieved. Application in hot temperatures will cause rapid setup of the material. Do not mix more material, especially in warmer conditions, than can be used within 10 minutes.

MATERIAL PROPERTIES		
PROPERTY	ASTM METHOD	TYPICAL TEST VALUE*
Compressive Strength, psi 1 day 3 days 7 days 28 days	ASTM C-109	5,000 (34.5 MPa) 6,000 (41.4 MPa) 6,500 (44.8 MPa) 8,000 (55.2 MPa)
Bond Strength, psi 1 day 7 days 14 days 28 days	ASTM C-1042	1,440 (9.9 MPa) 1,600 (11.0 MPa) 1,760 (12.1 MPa) 2,200 (15.2 MPa)
Flexural Strength, psi 7 days	ASTM C-78 (modified)	2,000 (13.8 MPa)
Set Time at 70° F (21° C) Initial Set Final Set	ASTM C-191	10 minutes 25 minutes
Freeze/Thaw Resistance	ASTM C-666 Procedure A at 500 cycles; Relative Durability Modulus	>80%

\* Specification values can be provided upon request.

**CAUTION!**

**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**

Clean tools and equipment with water before the material hardens.

**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

**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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