

TECHNICAL DATA SHEET

DESCRIPTION

One component, shrinkage compensated portland cement based concrete repair material containing blended coarse aggregate. Civil/Structural FPX is enhanced with a corrosion inhibitor for rebar & steel protection and is designed primarily for large volume placements including structural elements, typically in applications from 1 inch (2.54 cm) to 12 inches (30.48 cm).

USE

For repair of concrete utilizing form and pour or form and pump applications. Can be used on-grade, above, and below grade; horizontal, vertical and overhead; interior or exterior; structural and general repairs where 1 in. (2.54 cm) to 12 in. (30.48 cm) thickness is required. Excellent for use as a repair material or resurfacing for parking facilities, industrial plants, bridges, tunnels, dams, balconies or any deep section repair of concrete.

FEATURES

- Pre-extended with coarse aggregate for labor saving
- Corrosion inhibitor protects steel reinforcement from both chloride intrusion and carbonation
- High bond strength
- Compatible with coefficient of thermal expansion of concrete
- Increased resistance to deicing salts
- Excellent for deep section structural repairs
- Freeze/Thaw resistant
- Extended working time for ease of placement
- Not a vapor barrier

PROPERTIES

Application Time: Approximately 45 minutes depending on ambient and substrate temperatures

Setting Time: ASTM C403:

Initial Set @ 73 degrees: 1 hr. 10 min.

Final Set @ 73 degrees: 2 hrs. 25 min.

Consistency: Flowable

Compressive Strength: ASTM C109

1 day: 2,960 psi (20.4 MPa)

7 days: 8,730 psi (60.2 MPa)

28 days: 10,460 psi (72.1 MPa)

Flexural Strength: ASTM C348:

1 day 403 psi (2.7 MPa)

7 days 951 psi (6.6 MPa)

28 days 1270 psi (8.7 MPa)

Splitting Tensile Strength: ASTM C496:

1 day 222 psi (1.5 MPa)

7 days 639 psi (4.4 MPa)

28 days: 710 psi (4.9 MPa)

Bond Strength: ASTM C1583:

1 day 56 psi (0.4 MPa)

7 days 265 psi (1.8 MPa)

28 days: 348 psi (2.4 MPa)

Freeze-Thaw Resistance: ASTM C666- Proc. A:

Durability Factor @ 300 cycles 95.3

Mass Loss @ 300 cycles 0.00%

Length Change @ 300 cycles 0.03%

Surface condition @ 300 cycles no scaling or cracking

Note:

The data shown is typical for controlled laboratory conditions. Reasonable variation from these results can be expected due to interlaboratory precision and bias. When testing the field mixed material, other factors such as variations in mixing, water content, temperature and curing conditions should be considered.

Estimating Guide

Yield: Approximately 0.44 cu. ft. (0.0125 cu. M) /55 lb. (24.9 kg) bag

Packaging

PRODUCT CODE	PACKAGE	SIZE	
		lbs.	kg
308765	Bag	55	24.94
308771	Supersak	2500	1133.98

STORAGE

Civil/Structural FPX should be stored in a cool, dry interior area. At no time, should material be exposed to high moisture, rain or snow conditions. Shelf life of unopened bags, when stored in a dry facility is 12 months.

APPLICATION

Surface Preparation:

The concrete must be sound and free of all foreign material, including oil, grease, dust, laitance, or other surface contaminants. Surface preparation in accord with ICRI Guidelines is recommended. The edges of the patches should be saw-cut perpendicular to the surface to no more than a depth of 1/2 in. (13 mm) to avoid feather edging the repair material. Best results will be obtained by abrasive blasting the area to be repaired, providing uniform depth, a high surface profile and a firm bonding area. All surfaces to be repaired should be in a saturated-surface-dry (SSD) condition with no standing water on the surface. Supported patches deeper than 2 in. (5.08 cm) may require reinforcement or anchorage. Applications for unsupported repairs exceeding 1in. (2.54 cm) in thickness may require anchorage. Please consult the engineer of record for special requirements that may be required.

Water Requirements:

Add 4.5 pints (2.1 L) of clean potable water to 55 lb. (24.9 kg) bag.

Mixing:

Never mix partial bags. Mix with a forced action mixer. Use suitable size container with an appropriate paddle at a slow speed (400-500 rpm) with a heavy duty drill. For larger projects use a mortar mixer.

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Add recommended amount of water into the container followed by the Civil/Structural FPX powder. Mix thoroughly for at least 5 minutes.

Placement:

Using freshly mixed Civil/Structural FPX (do not dilute), scrub a thin layer into the SSD substrate with a stiff brush and place the Civil/Structural FPX before the scrub coat dries. In certain conditions the use of an approved Dayton Superior surface bonding agent, may be required.

Contact Technical services for further information. Mix only enough material that can be placed within a 40-minute period. **DO NOT RETEMPER.** Apply Civil/Structural FPX by pour or pump into a formed vertical surface or horizontal area. Confirm pump type and hose diameters will accept material with pump manufacturer prior to placement. Place at a minimum depth of 1 in. (2.54 cm) up to 12 in. (30.48 cm). For deeper application contact Dayton Superior Technical Service. **DO NOT FEATHER EDGE.**

CLEAN UP

Clean tools and equipment while material is still wet with water. Hardened material requires mechanical or abrasive methods.

CURING

Formwork should remain in place until material reaches 2500 psi (17.2 MPa) or as specified by engineering documents. To assure maximum durability, moist cure or use approved Dayton Superior curing compound conforming to ASTM C309.

LIMITATIONS

FOR PROFESSIONAL USE ONLY

Application thickness: Minimum 1 in. (2.54 cm) Maximum 12 in. (30.48 cm) For deeper application contact Dayton Superior Technical Service.

Do not place at temperatures below 40°F(5°C) or if the temperature is expected to drop below 40°F(5°C) in the next 24 hours.

In hot weather, follow ACI Committee 305 recommended procedures.

Colder temperatures will extend the setting time and warmer temperatures will reduce the setting time.

Please consult the engineer of record for the project for special requirements.

PRECAUTIONS

READ SDS PRIOR TO USING PRODUCT

- Product contains Crystalline Silica and Portland Cement – Avoid breathing dust – Silica may cause serious lung problems
- Use with adequate ventilation
- Wear protective clothing, gloves and eye protection (goggles, safety glasses and/or face shield)

- Keep out of the reach of children
- Do not take internally
- In case of ingestion, seek medical help immediately
- May cause skin irritation upon contact, especially prolonged or repeated. If skin contact occurs, wash immediately with soap and water and seek medical help as needed.
- If eye contact occurs, flush immediately with clean water and seek medical help as needed
- Dispose of waste material in accordance with federal, state and local requirements

MANUFACTURER

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WARRANTY

Dayton Superior Corporation ("Dayton") warrants for 12 months from the date of manufacture or for the duration of the published product shelf life, whichever is less, that at the time of shipment by Dayton, the product is free of manufacturing defects and conforms to Dayton's product properties in force on the date of acceptance by Dayton of the order. Dayton shall only be liable under this warranty if the product has been applied, used, and stored in accordance with Dayton's instructions, especially surface preparation and installation, in force on the date of acceptance by Dayton of the order. The purchaser must examine the product when received and promptly notify Dayton in writing of any non-conformity before the product is used and no later than 30 days after such non-conformity is first discovered. If Dayton, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty. Only a Dayton officer is authorized to modify this warranty. The information in this data sheet supersedes all other sales information received by the customer during the sales process. **THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.**

Dayton shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if Dayton could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.