STRUCTUROC V

High Strength, fast setting mortar
with added fiber for vertical repairs

STRUCTUROC V is a polymer-modified, fiber added, single component, portland cement-based, compensated shrinkage rapid setting repair mortar. It is designed for vertical and overhead concrete repairs to produce superior bond, tensile and flexural strength. STRUCTUROC V is able to be placed and sculpted to proper shape in one operation for thicknesses from 5 mm (1/4") to 50 mm (2").

USES

All vertical or overhead repairs.

TYPICAL USES:

- Bridges, viaducts and tunnels
- Multi-Level parking structure
- Clarifiers and reservoirs
- Dams
- Approved by the Canadian Food Inspection Agency

SURFACE PREPARATION

Proper repairs depend upon a solid bond between mortar and base surface. Thoroughly clean and roughen subject area. Remove any curing compound, grease, oil, loose carbonated concrete, dirt, dust, rust, etc... from repair area. Preparation should be done mechanically to achieve a surface condition (CSP) of 2 according to ICRI Guideline 310.2.
Repair the surface and remove the damaged concrete until a rough, clean and sound concrete is obtained. Saturate the concrete surface to be repaired for at least 12 hours before applying the mortar. Remove any excess water before starting the patch. Do not apply on a wet surface. Follow the recommendations of I.C.R.I. for structures with exposed rebars.

PRODUCT FEATURES

- Single component
- Tenacious bond strength
- Reduced shrinkage
- Resistant to crack development
- High early and ultimate compressive and flexural strength
- Freeze/thaw resistant
- Can be overcoated within 8 hours after placement

PRODUCT MIXING

- Place mixing equipment near the workplace.
- Always mix by adding the dry product to the clean water.
- For every 3.5 L at 3.8 L (0.92 to 1 US gal) of water add 1 bag of 22.7 kg of STRUCTUROC V.
- Use a mortar mixer or a 1/2" drill equipped with a paddle mixer. (0.92 US gal) of clean potable water in a clean mixing container, slowly add the powder while mixing until uniform.
- If the mixing shoud be performed manually, it must be done vigorously.
- Add the remaining amount of water (never exceed 3.8 L (1 US gallon)) per bag.
- STRUCTUROC V should be mixed to the proper consistency depending upon requirements.
- Mix until a smooth and uniform consistency is obtained.

PRIMING

No primer required.

PHYSICAL MATERIAL PROPERTIES @ 22°C (72°F)

COMPRESSIVE STRENGTH ASTM C-109-93, 2" (50 MM) CUBES		
3 hours	16.5 MPa	(2,400 psi)
1 day	37.1 MPa	(5,366 psi)
7 days	48.3 MPa	(7,000 psi)
28 days	68.9 MPa	(10,000 psi)

FREEZE / THAW RESISTANCE ASTM C666 MODIFIED PROCEDURE B		
Cycles	**Durability factor (RDF)**	**Loss**
300	97.2 %	0.72 %

FLEXYRAL STRENGTH ASTM C78		
7 days	14.5 MPa	(2,100 psi)

CHLORIDE PERMEABILITY ASTM C-1202*	
28 days	< 2,200 coulombs

HARDENING	
Working time	15-25 minutes
Initial set time (Vicat)	20-29 minutes
Final set time (Vicat)	25-45 minutes

SHEAR STRENGTH ASTM C 882		
7 days	40.0 MPa	(5,750 psi)

DENSITY
2,140 kg/m³

ABSORPTION ASTM C 642
< 5%

LENGTH CHANGE ASTM C157 WITH C928 MODIFICATION		
Time	**Air cure**	**Water cure (immersion)**
7 days	- 0.042 %	- 0.009 %
28 days	- 0.069 %	- 0.023 %

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PRODUCT APPLICATION

VERTICAL SURFACES

Apply a thick coat of STRUCTUROC V using a trowel, rubber trowel or gloves to allow the product to penetrate each crevice, crack or edges and also eliminate any air pockets and ensure complete contact for a good bond. Apply all material from the same batch to build out as much as 50mm (2") thickness. Minimum thickness is 5 mm (1/4"). Two layers of 50mm (2") or less may be applied as little as 30 minutes after set time.

APPLICATIONS GREATER THAN 50MM THICKNESS

Place one or two layers totalling not more than 50 mm (2") thickness, leave surface rough, then damp cure. After 6 hours, apply an additional 1 or 2 layers totalling not more than 50 mm (2") each. Finish final layer with steel trowel or sponge float. If material has begun to set prior to placing, discard it. Do not retemper. Can be sculpted for proper profile as STRUCTUROC V sets.

CURING

The curing must begin as soon as the final set is attained. Final set will vary depending on site conditions. Immediately after application (i.e. as soon as the patch feels warm to the touch, looks dry and feels hard), saturate the surface with clean potable water being careful not to erode the surface with water pressure. Apply water until it runs down the whole face (for vertical surfaces) or until freshly sprayed surfaces continue to look and feel wet for 2 minutes (for overhead surfaces). Continue this curing for at least 4 to 6 hours or tack rags over patch and keep wet for first 2 hours and leave rags for 4 more hours. Follow ACI 309 recommendations for curing.

ESTIMATING / YIELD

STRUCTUROC V in 22.7 kg (50 lbs) bag yields 12.7 L (0.45 ft^3) of material when mixed with 3.3 L to 3.8 L (0.87 to 1 US gal) of clean potable water and will cover approximately 2.0 m2 (22 ft^2) at a thickness of 6 mm (1/4").

COVERAGE PER 22.7KG (50LB) BAG:

Nominal Thickness	*Approximate Coverage*
6 mm (1/4")	1.95 m^2 (21.0 ft^2)
12 mm (1/2")	0.98 m^2 (10.5 ft^2)
25 mm (1")	0.49 m^2 (5.25 ft^2)

PRECAUTIONS / RESTRICTIONS

Minimum application temperature 5°C (40°F). When placing in hot weather and rapid drying conditions including one or more of the following situations:

1. Air or surface or material temperatures are above 32°C (90°F)
2. Where the air flow is continuously above 8 km/h
3. Where relative humidity is very low. Then take the following precautions:
   - Store materials where they will remain cold
   - Use cold water for mixing
   - Add ice to mixing water if necessary
   - Protect from rapid dry conditions

PACKAGING

STRUCTUROC V :

22.7 kg (50 lbs) bags
Qty: 56 units per pallet

RECOMMENDED TOOLS

The following tools will assure a cost effective, satisfactory installation :

- Steel, Wooden or Magnesium Trowels
- Rubber trowel
- 1/2" Heavy Duty drill with mixing paddles
- Mortar mixer (for large volumes)

CLEANING

Use water to clean all tools immediately after use.

STORAGE

Store in cool dry area avoiding all moisture.
Can be kept in unopened bags for 12 months.

SAFETY

See Material Safety Data Sheet.
Contains Portland cement and silica sand. May irritate eyes and skin. Avoid contact with eyes or prolonged contact with skin. In case of contact, flush thoroughly with water. Avoid breathing dust.

ELIGIBLE LEED® CREDITS: 3

Regional Materials (MR 5.1 & 5.2): 2 Points
Low Emitting Materials (EQ 4.1): 1 Point

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

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