

## **CERTI-VEX® PATCH FS**

### **FAST SETTING REPAIR MORTAR**

### **FOR VERTICAL, OVERHEAD & HORIZONTAL REPAIRS**

#### **DESCRIPTION**

**CERTI-VEX PATCH FS** is a single component, fast setting portland cement based, polymer modified patching mortar designed to repair and rehabilitate a wide variety of surfaces. The fast setting, low shrinkage and high strength of Certi-Vex Patch FS allows it to be featheredged or shaved to desired shape up to 2 inch thickness in a single application.

#### **BENEFITS**

- Vertical, overhead and horizontal surfaces
- Excellent strengths
- Use for structural repairs
- Good impact resistance
- Repairs up to 2 inch in depth in single lift
- Excellent freeze/thaw resistance
- Rapid set range 6 – 20 minute initial set
- Interior and exterior use
- On grade, above and below grade repairs
- Excellent bond, tensile and flexural strength
- Non-shrink
- Meets ASTM C-928 for dry packaged rapid hardening cementitious materials for concrete repairs

#### **RECOMMENDED FOR**

- Repair to concrete pipe, pre-cast, cast-in-place or pre-stressed concrete
- Fast repair to bridges, pilings, parking decks and many other structures
- Repair or finish damaged and spalled concrete

#### **SURFACE PREPARATION**

- Surfaces to be repaired must be structurally sound, clean and free of dust, dirt, oils, paints and all other contaminants that will prevent proper bond.
- Prepare area by high pressure water blast, or other mechanical means to expose a aggregate surface with a minimum surface profile of +/- 1/16 inch.
- If reinforcing steel is exposed, remove 1 inch of surrounding concrete. If there is corrosion on the reinforcing steel remove concrete 3 inch beyond any evidence of corrosion along the steel. Remove all corrosion and protect the steel with a corrosion resistant barrier or a slurry coat of Certi-Vex Patch FS. If applying a slurry coat apply two applications allowing to dry between applications.

#### **SURFACE CONDITIONING**

The surface to receive the repair material must be saturated, surface dry (SSD) with no standing water.

#### **PRIMING**

- Prime the prepared substrate with a brush or spray applied coat of **StarSeal Envio Bond** to the SSD surface.
- Alternatively, apply a scrub coat by mixing Certi-Vex Patch FS with the maximum allowable amount of clean water and scrub the material onto all exposed surfaces to receive Certi-Vex Patch FS. Place Certi-Vex Patch FS into the wet scrub coat before it dries.

#### **MIXING**

For repairs up to 3/4 inches in single lift or multiple lifts to 2 inches.

- Locate mixer close to repair areas.
- Mixing proportions: Use 5 quarts of clean, potable water per 50 lb. bag of Certi-Vex Patch FS. Mechanical mixing is preferred for best results. Use a slow speed ½ inch drill (500-650 rpm) and a paddle (like that used for joint compound of plaster).
- Place most of the water in a clean mixing container. Reserve the remainder. Add 3/4 of powder then mix until uniform. Add remainder of powder and continue to mix. Certi-Vex Patch FS may seem too dry at first, but continue mixing for 1 to 1 1/2 minutes. Add reserve water if necessary to achieve desired workable consistency.
- If mixing by hand is necessary, mix vigorously. Measure water with reliable volume measure. Mix until a smooth uniform, lump free consistency is obtained. The Certi-Vex Patch FS mix should be putty like.
- **NOTE:** Do not mix longer than four (4) minutes. Do not mix more material than can be placed in 15 minutes. DO NOT RETEMPER.
- **NOTE:** For single lifts greater than 3/4 inches, follow instructions above except add 1 part sharp sand or 3/8 inches aggregate to 2 parts Certi-Vex Patch FS should be used for the patch.

#### **SET TIMES**

To extend set time use cold water. To reduce set time use hot water. Site environmental conditions such as air and substrate temperature will also affect set times.

## **PLACEMENT & FINISH**

- Mixed product should be placed immediately.
- Certi-Vex Patch FS must be scrubbed into the substrate, filling all pores and voids. Force material against edge of repair, working toward center. After filling the repaired area, consolidate, then screed. Material may be applied in multiple lifts.
- The thickness of each lift, not to be less than 1/8 inch minimum or more than 2 inches maximum. Where multiple lifts are required score top surface of each lift to produce a roughened surface for next lift. Allow previous layer to tighten (5-10 minutes) apply scrub coat before building another layer. If first lift is fully hardened follow directions under Priming.
- Allow mortar to set to desired stiffness, then finish final layer with steel trowel or sponge float. Certi-Vex Patch FS can be sculpted for proper profile.

## **CURING**

Cure as per ACI recommendations for portland cement concrete. Beginning as soon as the patch has set, keep surface continuously moist for 24 hours, using burlap, fine mist, or a water based cure such as Vexcon's Envio Cure 100. Protect the newly placed material from wind, sun, rain, and frost. When conditions exist for rapid water loss, the use of Certi-Vex Envio-Assist, evaporation retarder is recommended.

## **PACKAGING**

Certi-Vex Patch FS is available in 50 pound bags. Contact Vexcon directly to discuss your customized packaging requirements.

## **YIELD**

When mixed in accordance to directions, one 50 pound bag will yield approximately 1/2 cu.ft.

## **SHORT SPECIFICATION**

03 01 00: Maintenance of Concrete: Repair mortar shall be a factory blended portland cement based, one component, high compressive and bond strength, non-shrink, fast-setting polymer modified, repair mortar for concrete. The repair mortar shall be suitable for use above or below grade and for applications on horizontal, vertical, and overhead surfaces. Manufactured by Vexcon Chemicals.

## **HEALTH AND SAFETY**

- Use only with adequate ventilation.
  - Use of gloves, goggles and other protective clothing is advised when using this product.
  - If swallowed, do not induce vomiting.
  - Use of respirators is advised when using in confined areas.
- Vexcon MSDS RP is an integral part of the safety and application of our product. A short synopsis is provided in this product data sheet. Before using this Vexcon product it is advisable to obtain a copy of the MSDS, RP, from your distributor or by contacting Vexcon Chemicals.

## **SHELF LIFE**

If properly stored in its original sealed bag, one year from date of manufacture. Rotate your stock.

## **CONTACT US @**

Additional product information, technical assistance and customer service are available by contacting Vexcon Chemicals directly or our distributors.

- vexcon.com
- techservice@vexcon.com
- customerservice@vexcon.com
- sales@vexcon.com
- Voice: 888.839.2661
- Fax: 215.332.9997

## **LIMITATIONS/SPECIAL NOTES**

- Do not attempt to RETEMPER or add water to the surface during finishing.
- All materials should be conditioned to the appropriate temperature range of 50° F to 90° F (10° C - 32° C) prior to mixing and placement.
- Do not apply when air, surface or material temperature is below 50° F (10° C).
- Protect from freezing.
- Do not exceed liquid requirements.
- Do not use solvent based cures.
- For additional information on substrate preparation refer to ICRI guide lines.
- Proper application of Vexcon material is the responsibility of the installer or user. Telephone consultation and/or field visits by Vexcon personnel are for the sole purpose of making technical recommendations only, and not for providing quality control or supervision on location.

## **TECHNICAL DATA**

Set Time (Gilmore)		
Initial		6-20 Minutes
Final		40-45 Minutes
Compressive Strength (ASTM C 109)		
1 Day		2,675 psi
7 Days		6,810 psi
28 Days		7,025 psi
Shear Bond (ASTM C 882)		
7 Days		1,140 psi
28 Days		1,800 psi
Flexural Strength (ASTM C 348)		
1 Day		575 psi
7 Days		1,260 psi
28 Days		1,680 psi
Shrinkage/Expansion (ASTM C 157)		
28 Days		-0.045%
Tensile Strength (ASTM C 190)		
1 Day		270 psi
7 Days		465 psi
28 Days		520 psi
Freeze/Thaw Resistance (ASTM C 666)		
50 cycles		Excellent
Gardener Impact		
28 Days		Greater than 158 inch lbs
Entrained Air Content (ASTM C 231)		
Wet		5.3%
pH Wet		12
Color		Light Gray

## **WARRANTY**

Vexcon warrants that the goods supplied hereunder shall be of its standard quality and shall conform in all material respects to the sample which has been made available for testing by buyer prior to sale. As the EXCLUSIVE REMEDY for any breach of this Limited Warranty, Vexcon shall replace nonconforming goods or refund the purchase price. Since methods of use and application are beyond Vexcon's control, this Limited Warranty IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THOSE CONCERNING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS LIMITED WARRANTY IS ALSO IN LIEU OF ANY OTHER POSSIBLE WARRANTIES OF VEXCON, WHETHER ALLEGED TO ARISE BY AGREEMENT OR BY OPERATION OF LAW, RESPECTING THE SALE, APPLICATION, USE OR FUNCTION OF VEXCON'S PRODUCTS, INCLUDING BUT NOT LIMITED TO CLAIMS OR NEGLIGENCE, GROSS NEGLIGENCE, STRICT LIABILITY OR ANY OTHER TORT. IN NO EVENT SHALL VEXCON BE LIABLE FOR PERSONAL INJURY OR PROPERTY DAMAGE, REAL OR PERSONAL, ATTRIBUTED TO ITS PRODUCTS, NOR FOR ANY EXCAVATION, REMOVAL, REAPPLICATION, DOWN TIMES, CLEANUP, LOSS OF USE, LOSS OF OPPORTUNITY, LOSS OF MARKET VALUE, LOSS OF RENTAL VALUE OR FOR ANY LOSS OF PROFITS OR OTHER SPECIAL, INCIDENTAL, RESULTING, CONSEQUENTIAL OR EXEMPLARY DAMAGES. No person is authorized by Vexcon to assume for it any other liability of any kind in connection with the sale or use of products manufactured and sold by it, and there are no oral agreements or warranties collateral to or affecting any sale or use. All of the foregoing arises under the substantive law of Pennsylvania without regard to principles of conflicts of laws.