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## CEM-KOTE FLEX ST

### Polymer-Modified Flexible Cementitious Waterproofing

#### DESCRIPTION

CEM-KOTE FLEX ST is a two-component, highly flexible, fiber-reinforced, breathable, cementitious slurry, consisting of dry Component A and liquid Component B. CEM-KOTE FLEX ST can be used for interior, exterior, positive- and negative-side applications.

#### USES

CEM-KOTE FLEX ST is designed for positive and negative waterproofing of concrete structures in new construction and restoration. It is suitable for water and wastewater tanks, secondary containment structures, tunnels, concrete slabs, balconies, and patios with light to medium traffic. In new construction, where superior flexibility is required (waste water treatment facilities), CEM-KOTE FLEX ST may be reinforced with REINFORCING FABRIC HD throughout. In restoration, REINFORCING FABRIC NW is used just over the cracks to provide bridging.

#### FEATURES/BENEFITS

- Approved ANSI/NSF 61 – Barrier Materials.
- UV resistant
- Superior flexibility.
- Bridges substrate crack up to 1/16" (1.6 mm).
- Long term crack resistance.
- Fast cure waterproofing.
- Approved for potable water tanks (>38 m<sup>3</sup> - 10,000 gal.)
- Superior freeze/thaw resistance.
- Excellent salt scaling resistance.
- Effective protection against acid rain.
- Self-curing.
- Continuous water immersion possible.
- Superior negative/positive waterproofing.
- Breathable.
- Salt resistant.
- Easy mixing & application = sprayable.

#### PACKAGING

CEM-KOTE FLEX ST premix kit consists of dry component A packaged in 50 lb. (22.7 kg) bags and liquid component B, packaged in 1.8 gal. (6.8 L) plastic jugs.

#### COLOR

Industrial Gray, Light Gray, White. Only Industrial Grey color is ANSI/NSF Standard 61 approved.

#### COVERAGE/YIELD

CEM-KOTE FLEX ST yields 0.53 ft.<sup>3</sup> (14.9 L) per kit.

#### Two-Coat Requirement:

- CEM-KOTE FLEX ST must be applied in two coats at 32 mils each.
- Effective coverage is approximately 100 ft.<sup>2</sup> (16.25 m<sup>2</sup>) per kit at a total thickness of 64 mils.

The actual coverage will depend on surface roughness and the thickness applied. The applicator must carry out a sample application to determine the actual coverage for the given substrate and application thickness.

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#### SHELF LIFE

CEM-KOTE FLEX ST, when stored on pallets in a dry, cool area, free from moisture and direct sunlight, has a shelf life of 12 months. The liquid Component B must not freeze.

#### SPECIFICATIONS/STANDARDS

- ANSI/NSF Standard 61 – Barrier Materials (Industrial Gray version only)

#### TECHNICAL DATA

Ultimate Tensile Strain (ASTM D412 Mod.)	
@ 68° F (20° C) Non-Reinforced	20%
@ 68° F (20° C) reinforced	30%
Ultimate Tensile Stress (ASTM D412 Mod.)	
@ 68° F (20° C) non-reinforced	120 psi (0.82 MPa)
@ 68° F (20° C) reinforced	440 psi (3.05 MPa)
Crack Spanning (W. R. MEADOWS TP 005)	
@ 68° F (20° C) non-reinforced	0.5 mm (20 mils)
@ 68° F (20° C) reinforced	1.6 mm (63 mils)
Water Vapor Permeance, (ASTM E 96)	
Wet cup 1.6 mm	697 ng/Pa.s.m <sup>2</sup> (12.8 perms)
Water Vapor Permeability,	
Engelfried-Klopfer Sd <3 m	S <sub>d</sub> = 0.265 m
Salt Scaling Resistance, (ASTM C672)	
	Excellent
Hydraulic Impermeability TTP 1411	
(negative side), 2 mm thickness	Water head >126' (>38.4 m)
Pot Life @ 68° F (20° C),	40 Minutes
60% RH:	*In hot and low humidity conditions, .5 cups of water can be added to extend pot life
A high porosity concrete block, coated with CEM-KOTE FLEX ST, "burst" at 126' (38.4 m) water head pressure with CEM-KOTE FLEX ST showing no sign of wetness	

#### APPLICATION

Current guide specification and application instructions contain additional information specific to each application and must be followed. The applicator must, prior to bid, confirm the detailing, use of **REINFORCING FABRIC NW**, correct surface preparation, and application procedures with Technical Services.

**Surface Preparation ...** Remove all deteriorated and loose concrete, form release agents, oil, grease, laitance, dust, dirt and efflorescence by dry or wet sandblast, shotblast, or high-pressure water (minimum 34.5 MPa [5,000 psi]) to achieve CSP #3 (International Concrete Repair Institute). Conduct a bond test to assure proper surface preparation has been accomplished. Repair deeper areas using MEADOW-CRETE® GPS from W. R. MEADOWS. The proper surface preparation is essential for a successful waterproofing and concrete repair using CEM-KOTE FLEX ST. Remove all loose rust from any exposed reinforcing steel and apply two coats of FIBRE-PRIME rustproofing. Use MEADOW-PATCH™ T1 from W. R. MEADOWS for addressing bug holes and honeycombing.

**Crack Treatment ...** All cracks must be treated using CEM-KOTE FLEX ST or REINFORCING FABRIC NW or REINFORCING FABRIC HD. Pre-fill any open cracks larger than 80 mils (2 mm) with CEM-KOTE FLEX ST. Apply a thin coat of CEM-KOTE FLEX ST 6 - 10" (152.4 - 254 mm) wide over the crack. Embed a strip of REINFORCING FABRIC NW or REINFORCING FABRIC HD into the wet CEM-KOTE FLEX ST and apply a second coat to fully cover the REINFORCING FABRIC NW or REINFORCING FABRIC HD. Important: REINFORCING FABRIC NW is typically used over cracks on elevated slabs. For below-grade application, always use REINFORCING FABRIC HD.

**Cove Installation ...** Install 40-50 mm (1.5-2") "coves" in vertical and horizontal corners (all 90° angles) using CEM-KOTE CW PATCH, MEADOW-CRETE GPS, or FIBRE-PATCH OV. All the coves must be reinforced with REINFORCING FABRIC HD, well embedded and covered in CEM-KOTE FLEX ST. The installation of the cove as specified, including the proper embedding and covering REINFORCING FABRIC HD, is essential to avoid water leaks through the corners.

**Mixing ...** Thoroughly mix the liquid Component B prior to its use. Use paddle or helix mortar mixer or heavy-duty drill (400-600 rpm) with a mixing paddle. Pour approximately 80% of component B into a clean mixer and gradually add the dry component A, while mixing, until a smooth and lump free mix is obtained. Lumps will form if the dry material is added suddenly into the liquid. Add the remaining liquid, while mixing, to achieve the consistency required for a given application. A small amount of water can be added, if required, at higher ambient temperatures. W. R. MEADOWS recommends the Collomix® MK 140 HF for mixing. Mix in a receptacle larger than 5 gal. (18.9 L), such as a Collomix 10-gallon (37.9 L) bucket.

**Application Method ...** Trowel or brush apply CEM-KOTE FLEX ST to a minimum thickness of 1.6 mm (64 mils) in two (2) coats to a saturated surface damp concrete. CEM-KOTE FLEX ST can also be spray applied using a hopper gun or positive displacement (moyno or carousel) pump, with a suitable plastering spray nozzle. The hose size should be min. 25 mm (1"). The second coat must be applied into a wet first coat, as soon as the first coat allows the application and brushing of the second coat. The time between the coats will depend on temperature, relative humidity, surface porosity, sun, wind, etc. The delayed application of the second coat could result in de-bonding. If the first coat is left to dry overnight, clean the surface with water [10-14 MPa (1,500-2,000 psi)] and let dry prior to application of an additional coat. When spraying, brush each coat to eliminate all pinholes.

**Reinforcing Fabric ...** In some projects, REINFORCING FABRIC HD may have to be used throughout. When using REINFORCING FABRIC HD, apply first a thin layer of CEM-KOTE FLEX ST by brushing or spraying. When spraying, brush each coat to eliminate all "pinholes." Embed REINFORCING FABRIC HD into the first coat and follow with a second coat. REINFORCING FABRIC HD must be fully covered and must not protrude through the surface.

The total minimum applied thickness of CEM-KOTE FLEX ST, including REINFORCING FABRIC HD, must be 2 mm (80 mils).

**Curing ...** Cure CEM-KOTE FLEX ST by air-drying for a minimum of 3 days prior to a continuous exposure to water. Protect fresh applications from rain, strong wind and intense sunlight for 12 hours. When working under tarps at freezing temperatures, use electrical heaters and "forced" venting. Avoid using propane heaters to prevent "carbonation" of the material.

**Cleanup...** All tools must be cleaned with water immediately after use. Cured material can only be removed mechanically.

**Coating ...** CEM-KOTE FLEX ST when fully cured at 28 days at 75° F (23° C) may be coated with a standard water-based acrylic paint or coating.

**PRECAUTIONS**

Do not apply CEM-KOTE FLEX ST when the temperature is expected to be below 39° F (4° C) within 48 hours, or when rain is imminent. Follow hot weather concreting precautions when applying CEM-KOTE FLEX ST at temperatures exceeding 77° F (25° C) or under sunny and windy conditions. Contact W. R. MEADOWS for detailed instructions. Combustion engines must NOT be used in a confined space where CEM-KOTE FLEX ST is being applied. All gasoline/diesel/propane equipment other than concrete placing equipment should be shut off during placing of concrete or other cementitious materials. Paint can be applied to CEM-KOTE FLEX ST, but only 100% solids epoxy and water-based paints (containing no solvents) are compatible.

**HEALTH AND SAFETY**

Skin might be sensitive to hydraulic cement or the liquid additive. We recommend use of rubber gloves. Avoid contact with eyes and prolonged contact with skin. If contact occurs, flush immediately with water. Seek medical advice if irritation occurs. Harmful if digested. Keep product out of reach of children. FOR INDUSTRIAL USE ONLY. Consult SDS for additional information.



**Certified by IAPMO R&T to NSF/ANSI 61 for Material Safety**



**LIMITED WARRANTY**

W. R. MEADOWS, INC. warrants at the time and place we make shipment, our material will be of good quality and will conform with our published specifications in force on the date of acceptance of the order. Read complete warranty. Copy furnished upon request.

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