

# PRODUCT DATA

NO. 704



ANSI/NSF Standard 61  
Drinking Water System  
Components



W. R. MEADOWS®

SEALTIGHT®

MasterFormat: 07 16 13

## CEM-KOTE™ FLEX ST

Flexible Cementitious Waterproofing

OCTOBER 2021  
(Supersedes December 2018)

### DESCRIPTION

CEM-KOTE FLEX ST is a highly flexible, fiber-reinforced, breathable, cementitious slurry, consisting of dry Component A and liquid Component B.

### 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.
- 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.

### YIELD

CEM-KOTE FLEX ST yields 0.53 ft.<sup>3</sup> (14.9 L) and covers approximately 100 ft.<sup>2</sup> @ 63 mils (9.31 m<sup>2</sup> @ 1.6 mm) thickness per kit, applied in two coats.

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.

### 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. (Store above 40° F.)

### SPECIFICATIONS

- ANSI/NSF Standard 61 – Barrier Materials (Industrial Gray version only)
- Guide specification available.

### TECHNICAL DATA

Ultimate Tensile Strain (ASTM D 412 Mod.)	
@ 68° F (20° C) non-reinforced	20%
@ 68° F (20° C) reinforced	30%
Ultimate Tensile Stress (ASTM D 412 Mod.)	
@ 68° F (20° C) non-reinforced	0.82 MPa (120 psi)
@ 68° F (20° C) reinforced	3.05 MPa (440 psi)
Crack Spanning (Gemite ISO 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 >38.4 m (>126')
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	
VOC Content:	<5 g/L

### APPLICATION

Follow Gemite's most recent application procedures and details to assure quality installation. The applicator must, prior to bid, confirm detailing, use of REINFORCING FABRIC, correct surface preparation, and application procedures with Gemite Technical Services. The applicator must also

**CONTINUED ON REVERSE SIDE...**

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arrange a pre-installation meeting with Gemite's technical representative, general contractor, and site engineer to review installation procedure. The project specification supersedes the Gemite guide specification.

**Surface Preparation ...** Remove all deteriorated and loose concrete, form release agents, oil, grease, laitance, dust, dirt, sealers, curing compounds, penetrating sealers and efflorescence by high pressure water [5,000 psi (34.5 MPa)] to achieve CSP #3 (International Concrete Repair Institute). Conduct a bond test to assure proper surface preparation has been accomplished. The proper surface preparation is essential for a successful waterproofing and concrete repair using CEM-KOTE FLEX ST. Repair the deeper areas using MEADOW-CRETE® GPS from W. R. MEADOWS. Use MEADOW-PATCH™ T1 from W. R. MEADOWS for addressing bug holes and honeycombing.

**Reinforcing Steel ...** Remove all loose rust from any exposed reinforcing steel and apply two coats of FIBRE-PRIME.

**Crack Treatment ...** All cracks must be treated using CEM-KOTE FLEX ST and REINFORCING FABRIC NW or REINFORCING FABRIC HD. Pre-fill any open cracks larger than 2 mm (80 mils) with CEM-KOTE FLEX ST. Apply a thin coat of CEM-KOTE FLEX ST 6 - 10" (15 - 25 cm) wide over the crack. Embed a strip of REINFORCING FABRIC NW or REINFORCING FABRIC HD into the wet CEM-KOTE FLEX ST, let dry sufficiently, and apply a second coat to fully cover the REINFORCING FABRIC NW. Total applied thickness should be 63 mils (1.6 mm). In crack treatment of continuously and completely water saturated concrete slabs or walls, or for any below-grade concrete, use a strip of REINFORCING FABRIC HD instead of REINFORCING FABRIC NW. Any water seepage must be stopped for at least three days to allow CEM-KOTE FLEX ST to cure. If there is possibility of water freezing in the crack behind CEM-KOTE FLEX ST, the "cut and fill" method must be used in treatment of cracks.

**Cove Installation ...** Install 1.5" - 2" (40 - 50 mm) "coves" in vertical and horizontal corners (all 90° angles) using MEADOW-CRETE GPS or MEADOW-PATCH 20 from W. R. MEADOWS. All the coves are also reinforced with REINFORCING FABRIC HD well-embedded and covered in CEM-KOTE FLEX ST.

**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. W. R. MEADOWS recommends the Collomix® MK 140 HF for mixing. 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. 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.

**Application ...** Trowel or brush apply CEM-KOTE FLEX ST to a minimum thickness of 1.6 mm (63 mils) in two coats to saturated surface damp concrete. CEM-KOTE FLEX ST can also be spray applied using a hopper gun or displacement (moyno or carousel) pump, with a suitable plastering spray nozzle. When Spraying, brush each coat to eliminate all pinholes. 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 its de-bonding.

**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 three 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 or using acetone solvent.

#### PRECAUTIONS

Do not apply CEM-KOTE FLEX ST when the temperature is expected to be below 40° 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 Gemite Technical Service for detail 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.

CEM-KOTE FLEX ST is manufactured by:

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#### LIMITED WARRANTY

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