



## CEM-KOTE® FLEX ST

### Flexible Cementitious Waterproofing



ANSI/NSF Standard 61

Drinking Water System  
Components

#### FEATURES

- **Approved ANSI/NSF Standard 61 – Barrier Materials**
- Superior flexibility
- Bridges substrate crack up to 1.6 mm (1/16")
- Long term crack resistance
- Fast cure waterproofing
- Approved for potable water tanks (>38m<sup>3</sup> - 10,000 USG)
- 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

#### PRODUCT DESCRIPTION

##### Basic Use

**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** is reinforced with **REINFORCING FABRIC HD** throughout.

In restoration, **REINFORCING FABRIC NW** is used just over the cracks to provide bridging.

##### Composition and Materials

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

##### Limitations

Do not apply **CEM-KOTE FLEX ST** when the temperature is expected to be below 4°C (40°) within 48 hours, or when rain is imminent. Follow hot weather concreting precautions when applying **CEM-KOTE FLEX ST** at temperatures exceeding 25°C (77°F) or under sunny and windy conditions. For low temperature exposures, use **CEM-KOTE FLEX PLUS**.

##### Health and Safety

**CEM-KOTE FLEX ST** is non-toxic. Your 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 MSDS for additional information.

##### Colour

Industrial Grey, Light Grey, White.

##### Packaging

**CEM-KOTE FLEX ST Premix Kit** consists of dry component A packaged in 16 kg (35.3 lb.) bags and liquid component B, packaged in 4.8 L (1.3 U.S. gal.) plastic jugs.

##### Yield

**CEM-KOTE FLEX ST** yields 10.5 L (0.37 ft.<sup>3</sup>) and covers approximately 8.0 m<sup>2</sup> @ 1.3 mm (86 ft.<sup>2</sup> @ 50 mils) thickness per kit, applied in two (2) 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.

##### Storage and Transportation

**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. Packaged 40 kits per pallet.

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## TECHNICAL DATA

Ultimate Tensile Strain (ASTM D 412 Mod.)	
@ 20°C, (68°F) non-reinforced	20%
@ 20°C, (68°F) reinforced	30%
Ultimate Tensile Stress (ASTM D 412 Mod.)	
@ 20°C, (68°F) non-reinforced	0.82 MPa (120 psi)
@ 20°C, (68°F) reinforced	3.05 MPa (440 psi)
Crack Spanning (Gemite ISO TP 005)	
@ 20°C, (68°F) non-reinforced	0.5 mm (20 mils)
@ 20°C, (68°F) reinforced	1.6 mm (63 mils)
Water Vapour Permeance, (ASTM E 96)	
Wet cup 1.6 mm	697 ng/Pa.s.m <sup>2</sup> (12.8 perms)
Water Vapour Permeability,	
Engelfried-Klopfer S <sub>d</sub> <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 ft.)
A high porosity concrete block, coated with <b>CEM-KOTE FLEX ST</b> , "burst" at 38.4 m (126 ft.) water head pressure with <b>CEM-KOTE FLEX ST</b> showing no sign of wetness	

## INSTALLATION

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 41.4 MPa [6,000 psi]). Repair deeper areas using **GEM-PLAST TC** or **MEADOW-CRETE<sup>®</sup> OV** 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 **PATCH-PRIME™** rustproofing from **W. R. MEADOWS**.

### Crack Treatment

All cracks must be treated using **CEM-KOTE FLEX PLUS** and **REINFORCING FABRIC NW**. Pre-fill any open cracks larger than 2 mm (80 mils) with **CEM-KOTE FLEX PLUS**. Apply a thin coat of **CEM-KOTE FLEX PLUS** 15-25 cm (6-10") wide over the crack. Embed a strip of **REINFORCING FABRIC NW** into the wet **CEM-KOTE FLEX PLUS** and apply a second coat to fully cover the **REINFORCING FABRIC NW**. The total minimum applied thickness for crack treatment must be 2 mm (80 mils). In new construction, where the use of **REINFORCING FABRIC NW** may be considered throughout, the **HD FABRIC** could be replaced with a 1 mm thick coat of **CEM-KOTE FLEX PLUS**. In such cases, only one coat of **CEM-KOTE FLEX ST** on top of **CEM-KOTE FLEX PLUS** is required. Please confirm with Technical Services in all such cases.

### 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.

### Application

Trowel or brush apply **CEM-KOTE FLEX ST** to a minimum thickness of 1.3 mm (50 mils) in two (2) coats to a saturated surface dry (SSD) 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. When using spraying, brush each coat to eliminate all pinholes. The second coat must be applied into a wet first coat, usually within 10-15 minutes, depending on temperature and relative humidity. 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 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.

## WARRANTY

A limited twelve (12) month Material Replacement Warranty is available. For details, contact Technical Service.

## TECHNICAL SERVICE

For advice on suitability of **CEM-KOTE FLEX ST** for a specific application, specification assistance and application advice, contact Technical Service at 1-800-563-3618.

### Short Specification

The waterproofing will be **CEM-KOTE FLEX ST**, a flexible, polymer modified cement, manufactured by Gemite Products Inc. It will be mixed and applied according to the current manufacturer's specifications and recommendations. The suitability of **CEM-KOTE FLEX ST** for a specific use, the surface preparation method, detailing and application procedures must be checked with the Technical Services prior to bid.

## MANUFACTURER

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