



CEM-KOTE™ FLEX ST

Flexible Cementitious Waterproofing



ANSI/NSF Standard 61

Drinking Water System Components

DESCRIPTION

CEM-KOTE FLEX ST is a highly flexible waterproofing fibre-reinforced and 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, a strip of **REINFORCING FABRIC NW** is used just over the cracks to provide bridging.

FEATURES/BENEFITS

- **Potable Water Approved ANSI/NSF Standard 61**
- Superior flexibility
- Bridges substrate crack up to 1.6 mm (1/16")
- Long term crack resistance
- Fast cure waterproofing
- 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 16 kg (35.3 lb.) bags and liquid component B, packaged in 4.8 L (1.3 U.S. gal.) plastic jugs. *Light Grey* and *White* in 5.24 L (1.38 USG). (Note: special formulations, depending on colour, contain varying amounts of Component B).

COLOUR

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

COVERAGE

CEM-KOTE FLEX ST Industrial Grey yields 10.5 L (0.37 ft.³) and covers approximately 6.56 m² @ 1.6 mm (70.6 ft.² @ 63 mils) thickness per kit, applied in two (2) coats.

The *Light Grey* or *White* material yields 11.0 L (0.39 ft.³) and covers 6.9 m² (74.0 ft.²). Formulations, with a higher volume of Component B, have a higher yield, depending on specific formulation.

Note: When using **REINFORCING FABRIC HD** throughout, a thicker layer of **CEM-KOTE FLEX ST Industrial Grey** is required [1.8 mm (76 mils)] to cover the fabric completely – approx. coverage 5.83 m² (63 ft.) per unit. 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.

SPECIFICATIONS

- ANSI/NSF Standard 61 – Barrier Materials
- Guide specification available.

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 ² (12.8 perms)
Water Vapour Permeability,	
Engelfried-Klopfer Sd <3 m	S _d = 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 CEM-KOTE FLEX ST , "burst" at 38.4 m (126 ft.) water head pressure with CEM-KOTE FLEX ST showing no sign of water penetration.	

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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]). Repair deeper areas using **MEADOW-CRETE® 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**. 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** and **REINFORCING FABRIC NW**. Pre-fill any open cracks larger than 2 mm (80 mils) with **CEM-KOTE FLEX ST**. 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 ST** and apply a second coat to fully cover the **REINFORCING FABRIC NW**.

Cove Installation ... Install 40-50 mm (1.5-2") "coves" in vertical and horizontal corners (all 90° angles) using **MEADOW-CRETE 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.

Application Method ... Trowel or brush apply **CEM-KOTE FLEX ST** to a minimum thickness of 1.6 mm (63 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 carrousel) 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.

PRECAUTIONS

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.

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.

MASTERFORMAT NUMBER AND TITLE

07 16 13 – Polymer Modified Cement Waterproofing

LEED INFORMATION

May help contribute to LEED credits:

- EA Credit 1: Optimize Energy Performance
- IEQ Credit 3.1: Construction Indoor Air Quality Management Plan - During Construction
- MR Credit 2: Construction Waste Management
- MR Credit 4: Recycled Content
- MR Credit 5: Regional Materials

MANUFACTURER

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