

PRODUCT NAME

Cem-Kote® Flex ST



NSF / ANSI 61

Drinking Water System Components



Flexible Cementitious Waterproofing

MANUFACTURER

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FEATURES

- **Certified NSF / ANSI Standard 61 - Drinking (Potable) Water Contact**
- Superior flexibility
- Bridges substrate crack up to 1/16" - 1.6 mm
- 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

PRODUCT DESCRIPTION

Basic Use

Cem-Kote Flex ST can withstand high positive & negative water pressure, and is suitable for new construction and restoration. It is suitable for drinking (potable) water & wastewater tanks, secondary containment structures, tunnels, concrete slabs, balconies and patios with medium traffic.

Cem-Kote Flex ST is only used in "Open" wastewater structures (H₂S freely escaping) - **System #1** in *Cem-Kote Flex CR PDS*.

In new construction, *Reinforcing Fabric HD* is used throughout, to provide superior flexibility of the system.

In restoration a strip of *Reinforcing Fabric HD* or *Reinforcing Fabric NW* is used over cracks to increase crack 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°F) 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 nontoxic. Your skin might be sensitive to hydraulic cement, or the liquid additive. Use rubber gloves recommended. 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.

Color

Industrial Gray, Light Gray and White.

Packaging

Cem-Kote Flex ST Premix Kit consists of dry Comp. A 22.7 kg (50 lb.) bag + liquid Comp. B 6.8 L (1.8 USG) plastic jug. The volume of Comp.B may slightly vary, depending on color.

Yield

Cem-Kote Flex ST yields 14.9 L (0.53 ft³) & covers approx. 9.31 m² @ 1.6 mm (100 ft² @ 63 mils) thickness per kit, applied in two (2) coats.

Using *Reinforcing Fabric HD* throughout requires min. 2.0 mm (80 mils) thickness of *Cem-Kote Flex ST* to cover the fabric. Coverage is reduced to 7.45 m² (89.4 ft²) per kit.

The actual coverage depends on surface roughness & thickness applied, and test is required 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 area, free from moisture & direct sunlight has a shelf-life of 12 months. Liquid Comp. B **must not freeze**. Packaged 40 kits per pallet.

TECHNICAL DATA

Ultimate Tensile Strain (ASTM D412 Mod.)	
at 20°C, non-reinforced	20%
at 20°C, reinforced	30%
Ultimate Tensile Stress (ASTM D412 Mod.)	
at 20°C, non-reinforced	0.82 MPa (120 psi)
at 20°C, reinforced	3.05 MPa (440 psi)
Crack Spanning (Gemite ISO TP 005)	
at 20°C, non-reinforced	0.5 mm (20 mils)
at 20°C, reinforced	1.6 mm (63 mils)

Water Vapor Permeance, (ASTM E96) wet cup 1.6 mm,	697 ng/Pa.s.m ² (12.8 perms)
Water Vapor 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 wetness.

INSTALLATION

Follow Gemite's most recent application procedures and details, to assure quality installation. The applicator must, prior to bid, consult the detailing, *Reinforcing Fabric* use, correct surface preparation & application procedures with Gemite's Technical Service. The applicator must arrange a pre-installation meeting with Gemite's technical representative, General Contractor and the Site Engineer to review the 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 and efflorescence by dry or wet sandblast, shotblast, or high pressure water, min. 5,000 psi (34.5 MPa), or 3,500 psi (24 MPa) with sand brought to the nozzle. Repair deeper areas using *Gem-Plast TC* or *Fibre-Patch OV*. 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.

Mixing

Thoroughly mix the liquid Comp. B prior to its use. Use paddle or helix mortar mixer, or heavy duty drill (400-600 RPM) with a mixing paddle. Pour approx. 80% of the Comp. B into a clean mixer and gradually add the dry Comp. 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.

Crack Treatment

All cracks must be treated using *Cem-Kote Flex ST* combined with *Reinforcing Fabric NW* or *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* approx. 25 cm (10") wide, over the crack. Embed a strip of the *Reinforcing Fabric NW* or *HD* into the wet *Cem-Kote Flex ST*, and apply a 2nd coat to fully cover the *Reinforcing Fabric NW* or *HD*.

Important - *Reinforcing Fabric NW* is used over cracks on slabs.

For below ground applications always use *Reinforcing Fabric HD*.

Cove Installation

Install 40-50 mm (1.5-2") coves in vertical & horizontal corners (all 90° angles) using *Fibre-Patch OV*.

Reinforcing Fabric HD, well embedded and covered in *Cem-Kote Flex ST* must be used over all coves. Cove installation and treatment is essential to avoid water leaks through the corners.

Application

Trowel or brush apply *Cem-Kote Flex ST* to a min. thickness of 1.6 mm (63 mils) in two (2) coats to a saturated surface damp concrete.

Cem-Kote Flex ST can be also spray applied using a hopper gun or positive displacement (carrousel) 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 debonding.

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.

Reinforcing Fabric

In new projects the *Reinforcing Fabric HD* may have to be used throughout. When using the *Reinforcing Fabric HD*, apply first a thin layer of *Cem-Kote Flex ST*, embed the *Reinforcing Fabric HD* into the 1st coat, and follow with the 2nd coat. *Reinforcing Fabric HD* must be fully covered and must not protrude through the surface.

The total min. applied thickness of *Cem-Kote Flex ST*, including the *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 under normal conditions 15-20°C and 70-80% RH. The curing time may have to be extended at low temperatures. Contact Gemite Products Technical service. 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.

Clean Up

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

AVAILABILITY AND COST

Cem-Kote Flex ST is available worldwide. Contact Gemite Products Inc. for the name of the Representative/Distributor nearest you and pricing information.

MAINTENANCE

None required.

WARRANTY

A limited twelve (12) month Material Replacement Warranty is available. For complete details contact Gemite's Head Office.