



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 (>38m³ - 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 a superior flexibility is required (waste water treatment facilities), **Cem-Kote Flex ST** is reinforced with the **Reinforcing Fabric HD** throughout. In restoration, **Reinforcing Fabric HD** 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 and White. Selected colours are available on request. Note: Only **Cem-Kote Flex ST Industrial Grey** is ANSI/NSF 61 approved.

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 plastic jug. **Industrial Grey** in 4.8 L (1.3 U.S.gal.); **Light Grey** in 5.24 L (1.38 U.S.gal.). Note: special formulations, depending on colour, contain varying amounts of component B.

Yield

Cem-Kote Flex ST; (Industrial Grey) Yields 10.5 L (0.37 ft.³) and covers approximately 6.6 m² @ 1.6 mm (71.0 ft.² @ 63 mils) thickness per kit, applied in two (2) coats. The **Light Grey** material yields 11.0 L (0.39 ft.³) and covers 6.9 m² (74.0 ft.²). Special formulations, with a higher volume of Component B, have a higher yield, depending on specific formulation. 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 D412 Mod.)	
@ 20°C, (68°F) non-reinforced	20%
@ 20°C, (68°F) reinforced	30%
Ultimate Tensile Stress (ASTM D412 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 E96)	
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 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 the **Reinforcing Fabric HD**, correct surface preparation and application procedures with W. R. Meadows Technical Service.

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 W. R. Meadows' **MEADOW-CRETE® 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 W. R. Meadows' **PATCH-PRIME™** rust proofing.

Crack Treatment

All cracks must be treated using **Cem-Kote Flex Plus** and **Reinforcing Fabric HD**. 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 the **Reinforcing Fabric HD**, into the wet **Cem-Kote Flex Plus** and apply a second coat to fully cover the **Reinforcing Fabric HD**. The total applied thickness should be 2 mm (80 mils).

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 the 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 1.6 mm (63 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 with compressed air. The hose size should be 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 using spraying, brush each coat to eliminate all pinholes.

Reinforcing Fabric

In some 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** by brushing or spraying. When spraying, brush each coat to eliminate all "pinholes". Embed the **Reinforcing Fabric HD** into the first coat and follow with a second coat. The **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 the **Reinforcing Fabric HD**, should 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. In potable water applications, the minimum drying/curing time is 7 days. 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 must 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 instructions, contact Technical Service at 1-800-563-3618.

MANUFACTURER

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