



MIGRATING CORROSION INHIBITORS
FROM GREY TO GREEN

03 30 00	Cast in Place Concrete
03 40 00	Precast Concrete
03 70 00	Mass Concrete

MCI[®]-2006 NS TF

DESCRIPTION

MCI[®]-2006 NS TF is a normal-set, powder-based, organic corrosion inhibiting admixture for protection of metallic reinforcement in concrete structures.

When incorporated into concrete, cementitious grouts, or repair mortars, MCI[®]-2006 NS TF forms a protective monomolecular layer on embedded metals that inhibits corrosion. In new construction, this is quantified by an increase in critical chloride threshold and subsequent reduction in corrosion rates when corrosion does initiate. When used with repair mortars and grouts, MCI[®]-2006 NS TF not only protects rebar within the patch; it is able to migrate into undisturbed concrete adjacent to the repair to protect reinforcement already in place.

PACKAGING & STORAGE

Available in 6.95 lb (3.2 kg), 69.5 lb (31.6 kg), and 139 lb (63.1 kg) drums.

To ensure best product performance, store in original packaging, indoors, and out of direct sunlight at 40-100 °F (4-38 °C).

Shelf life: 2 years



HOW IT WORKS

MCI[®]-2006 NS TF is an organic corrosion inhibitor. It is considered ambiodic (mixed), meaning it protects both anodic and cathodic areas within a corrosion cell. MCI[®]-2006 NS TF contains a blend of amine salts of carboxylic acids that form a protective layer on embedded reinforcement, delaying the onset of corrosion as well as reducing existing corrosion rates.

MCI[®]-2006 NS TF is effective at enhancing the durability and extending the service life of concrete structures exposed to corrosive environments (carbonation, chlorides, and atmospheric attack).

WHERE TO USE

- Reinforced concrete including precast, pre-stressed, and post-tensioned structures
- Corrosive environments including exposure to deicing salts, saline groundwater, airborne chlorides, and carbonation
- Marine and coastal structures, highways and bridges, parking decks, balconies, pools, concrete tanks, pilings, substructures, piers, pillars, pipes, and utility poles

ADVANTAGES

- Biobased (18%)
- Certified to meet ANSI/NSF Standard 61 for use on structures holding potable water
- Earns credit towards LEED certification
- Powder formula for ease of addition into pre-mixed grouts, repair mortars, or other cementitious-based products
- Compatible with mortars used with galvanic anodes or impressed current CP systems
- Lower toxicity and environmental impact than traditional corrosion inhibiting admixtures such as calcium nitrite
- Low dosage rate with minimal effect on concrete properties (i.e., workability, strength development, air entrainment, etc.)

MCI®-2006 NS TF

- Single dosage rate which is independent of expected exposure to chlorides
- Ability to migrate through porous substrates (concrete, masonry, limestone, etc.) by capillary action, vapor diffusion, and ionic attraction
- Field and lab tested worldwide

PHYSICAL PROPERTIES

Appearance	Off-white powder
Non-Volatile Content	98-100%
pH	11.5-13 (1% in water)

DOSAGE

Add MCI®-2006 NS TF to concrete mix or repair mortars at 1.39 lb/yd³ (0.82 kg/m³). Dosage is fixed and independent of chloride levels.

ASTM C494 PHYSICAL PROPERTY RESULTS

Set Time			
	Control	MCI®-2006 NS TF	Relative to Control
Initial Set (Minutes)	239	257	+18
Final Set (Minutes)	318	329	+11
Compressive Strength			
3 Day (psi)	4340	4780	110%
7 Day (psi)	5050	5630	111%
28 Day (psi)	6190	6710	108%
6 Month (psi)	7130	7970	112%
1 Year (psi)	7380	8150	110%
Flexural Strength			
3 Day (psi)	750	780	104%
7 Day (psi)	775	835	108%
28 Day (psi)	805	835	104%
Shrinkage			
Length Change (%)	-0.020	-0.026	-0.006
Freeze/Thaw			
Relative Durability Factor	96%		

APPLICATION

In ready-mix applications, MCI®-2006 NS TF is best added with the mix water into ready-mix concrete at the plant. Alternatively, it can be dosed into the ready-mix truck using portable dosing equipment. Concrete should be mixed thoroughly before placement.

In other cementitious product applications, MCI®-2006 NS TF can be pre-blended into the mortar, grout, etc., so that it is evenly dispersed throughout the mix. Alternatively, it can be added into the mix water prior to mixing with the material.

STANDARD TEST RESULTS

Slump	ASTM C143	Neutral
Air Content	ASTM C231	Neutral
Density	ASTM C138	Neutral
Set Time	ASTM C403	Neutral
Flexural Strength	ASTM C78	Neutral
Compressive Strength	ASTM C39	Neutral
Workability	N/A	No adverse effects when used with pozzolans or other high performance concrete admixtures

CONSIDERATIONS

Concrete properties are always best determined in a trial using the actual mix components. Cortec® recommends a trial batch anytime you are using MCI®-2006 NS TF with new mix components.

Consult with Cortec's Technical Service department for further guidance if necessary.

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