



Delivering Concrete Solutions

DATA SHEET

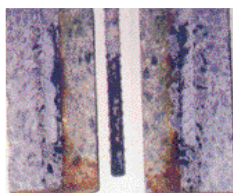
# Hycrete X1002

For technical assistance contact your local Hycrete Representative or call (201) 386-8110

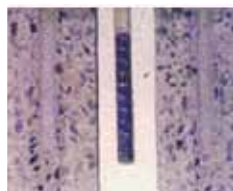
## Dual-Action Corrosion Inhibitor in Air-Entrained Concrete Mixes



Control



Calcium Nitrite



Hycrete X1002

Visual corrosion testing of steel reinforcement in concrete subjected to chloride exposure.

Source: University of Connecticut

### \* KEY BENEFITS

- Hycrete X1002 improves the durability of concrete
- Industry leading performance level of up to 7 times reduction in water absorption
- Forms protective coating around steel reinforcement
- Enhanced healing of cracks up to 0.4mm
- Increases electrical resistivity of concrete
- Liquid form means more consistent performance and verifiable dosage
- Neutral concrete set time performance, even in high fly ash and GGBS (slag) mixes
- Easy to use, no workability issues

\* See page 2 for testing methodologies

### PRODUCT DESCRIPTION

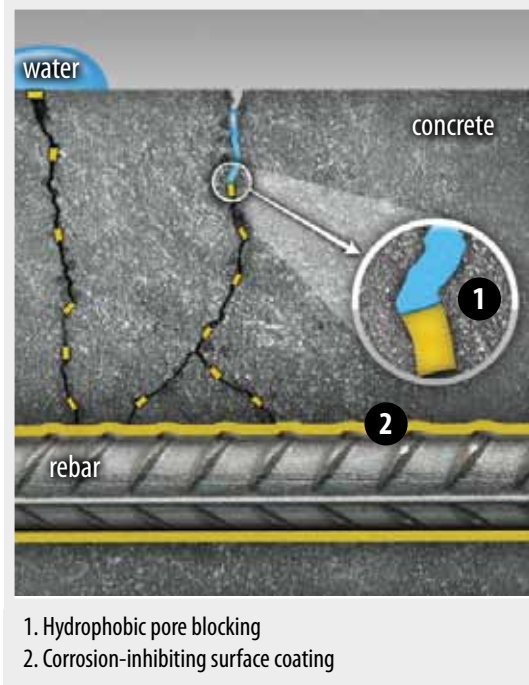
Hycrete X1002 is a patented dual action corrosion-inhibiting and waterproofing concrete admixture that delivers industry leading performance. Hycrete X1002 protects concrete and steel in two ways:

- a) Keeps water and corrosive agents out, reducing absorption to an industry low compared to control concrete.
- b) Protects steel by forming a protective passivating layer on the surface of reinforcement steel that dramatically reduces corrosion initiation and propagation.

Hycrete X1002 admixture in concrete provides an effective and robust barrier against water and chloride ingress that does not lose performance over time and never requires reapplication. Concrete treated with X1002 outperforms High Performance Concrete (HPC) mixes that include silica fume, fly ash, slag and calcium nitrite corrosion inhibitors.

### PRODUCT FEATURES

- ANSI 61 - approved for use in potable water tanks
- Compatible with standard admixture metering equipment
- Cradle to Cradle™ certified by MBDC
- Non-toxic, no VOCs

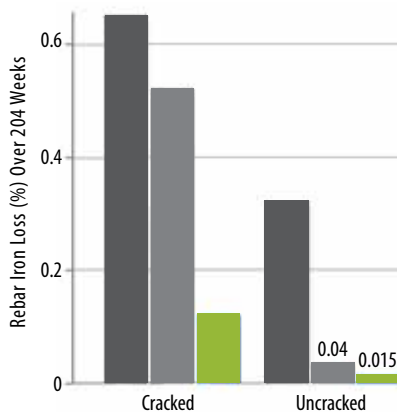


1. Hydrophobic pore blocking
2. Corrosion-inhibiting surface coating

### USES AND APPLICATIONS

- Bridges and highway infrastructure
- Dams, reservoirs, and water and wastewater systems
- Ports & marine structures
- Pilings
- Tunnels
- Airport runways
- Rail & metro systems
- Power & telecom infrastructure
- Parking structures

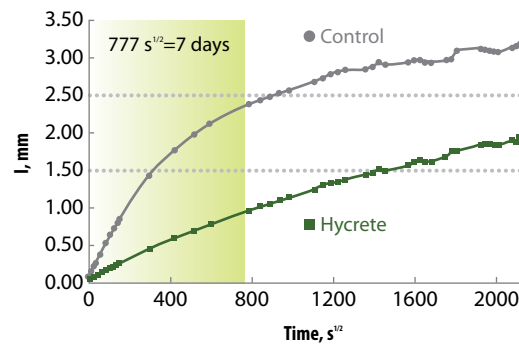
### Corrosion Performance — ASTM G109



Legend: Control (black), Calcium Nitrite (grey), Hycrete admixture (green)

Source: University of Massachusetts

### Determination of Capillary Absorption ASTM C1585



Source: Virginia Transportation Research Council

**PRODUCT PERFORMANCE\***

Water absorption	BSI 1881-122	Up to seven times reduction compared to control
Capillary absorption	ASTM C1585	Up to 60% reduction at 7 days
Corrosion protection	ATSM G109, ASTM C1556	Demonstrated protection against reinforcement bar corrosion and chloride penetration over the control
Permeability/hydrostatic pressure	DIN 1048 BS EN 12390-8	Passes DIN 1048; up to 70% reduction in permeability
Crack healing	ASTM C597	Hycrete heals faster and more completely compared to untreated concrete
Set time	ASTM C403	Set neutral
Drying shrinkage	ASTM C157	Neutral
Slump	ASTM C143	Neutral
Workability	N/A	Excellent
Effect on concrete color	N/A	None
Compressive strength	ASTM C39	Water/cement ratios may need to be lowered to account for possible, minor strength decreases associated with some materials. Perform trial mixes.
Potable water	ANSI 61	Approved for use in potable water tanks greater than 200,000 gallons
Adhesion	ASTM C1583, ASTM C1072, ASTM D3359	Neutral; no adverse effect on bond with concrete

\*All benefits and results are based on actual test results. Results may vary according to concrete mix designs, Hycrete X1002 dosage, or other factors.

**GENERAL PROPERTIES AND CHARACTERISTICS**

<p><b>Physical characteristics:</b></p> <p><b>Form</b> Liquid</p> <p><b>Specific gravity</b> 1.05</p> <p><b>Chloride content</b> Nil</p> <p><b>pH:</b> 8.5</p>	<p><b>Compatibility:</b></p> <ul style="list-style-type: none"> <li>■ Most concrete admixtures</li> <li>■ Most Portland cements or replacements including fly ash and GGBS (slag)</li> <li>■ Shotcrete mixes and application</li> <li>■ Most surface-applied sealants and external membrane protection systems</li> </ul>
<p><b>Recommended dosage:</b> 2.0 U.S. gallons per cubic yard of concrete (10.0 liters per cubic meter)</p>	
<p><b>Packaging:</b> 1 gallon bottles; 5 gallon pails; 55 gallon drums; 275 gallon totes; bulk tanker delivery</p>	
<p><b>Storage and handling:</b> Store above 32°F (0°C) and below 120 °F (48 °C). Slight flocculation can occur over time due to pH reductions. Such flocculation does not affect product performance</p>	

**NOTES**

- For non-air concrete mixes see Hycrete X1000 data sheet. Hycrete X1000 is specifically designed for non-air mixes.
- User should perform trial mixes prior to placement and make necessary adjustments to the mix design as needed.
- For air-entrained mixes or if considering dosages other than recommended dosage contact Technical Services before use.

**SAFETY**

Hycrete X1002 is a water-based material and should not be swallowed or come into contact with skin or eyes. Wear suitable protective gloves and goggles. If material comes in contact with the skin, wash immediately with soap and water. In case of contact with eyes, rinse immediately with sufficient water and seek medical support. If swallowed, seek immediate medical attention. For further information please consult the Material Safety Data Sheet.

**RELATED DOCUMENTS**

- Hycrete Mixing Instructions
- Hycrete Material Safety Data Sheet – Hycrete X1002
- For non-air concrete mixes see Hycrete Data Sheet - Hycrete X1000



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Hycrete warrants that its products are free from manufacturing defects and, when applied in accordance with the current specification and application instructions, will perform as so stated in its product literature. Water-proofing performance of the Hycrete X1002 is warranted for 25 years. Hycrete will provide sufficient material to waterproof areas shown to be defective due to Hycrete admixture material deficiencies.

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