

**DATA SHEET**

# Hycrete Endure CP

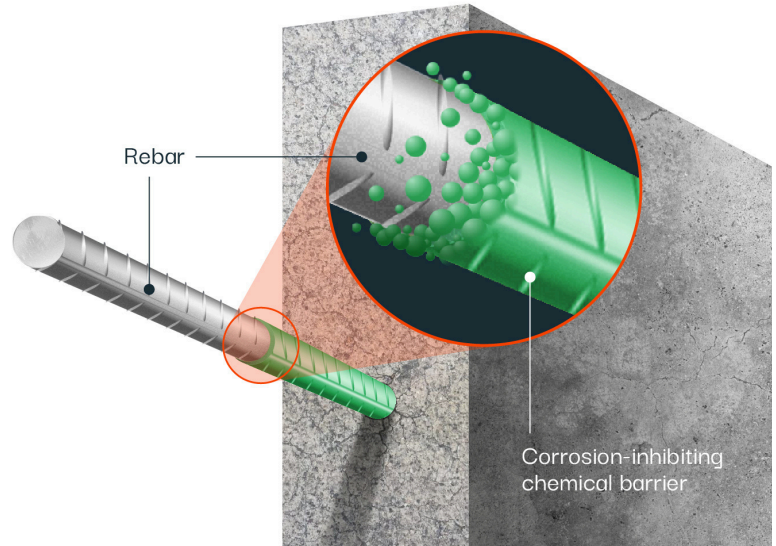
## Dual-Action Corrosion Inhibitor in Concrete Mixes

### PRODUCT DESCRIPTION

**Hycrete Endure CP** (formerly X1000) is a patented dual action corrosion-inhibiting and waterproofing concrete admixture that delivers industry leading performance. Hycrete Endure CP 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 Endure CP 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 Endure CP outperforms High Performance Concrete (HPC) mixes that include silica fume, fly ash, slag and calcium nitrite corrosion inhibitors.

### USES AND APPLICATIONS

- Bridges and Highway Infrastructure
- Dams, Reservoirs, and Water and Wastewater Systems
- Ports and Marine Structures
- Pilings
- Tunnels
- Airport Runways
- Rail and Metro Systems
- Power and Telecom Infrastructure
- Parking Structures

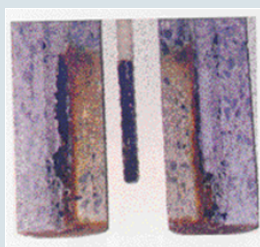


### KEY BENEFITS

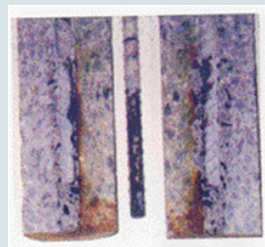
- Hycrete Endure CP (formerly X1000) improves the durability of concrete.
- Forms protective coating around steel reinforcement.
- Liquid form means more consistent performance and verifiable dosage.
- Industry leading performance level of up to 7 times reduction in water absorption.
- Enhanced healing of cracks up to 0.4mm.
- Increases electrical resistivity of concrete.
- Neutral concrete set time performance, even in high fly ash and GGBS (slag) mixes.
- Easy to use, no workability issues.

### PRODUCT FEATURES

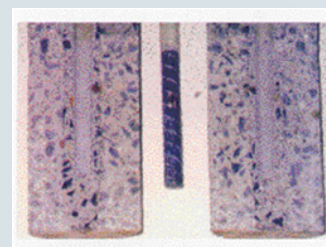
- NSF/ANSI 61 - approved for use in potable water tanks.
- Hycrete Endure CP meets/exceeds the requirements for ASTM C494 Type S admixtures.
- Compatible with standard admixture metering equipment.
- Cradle to Cradle™ certified by MBDC
- Non-toxic, no VOCs



Control



Calcium Nitrate



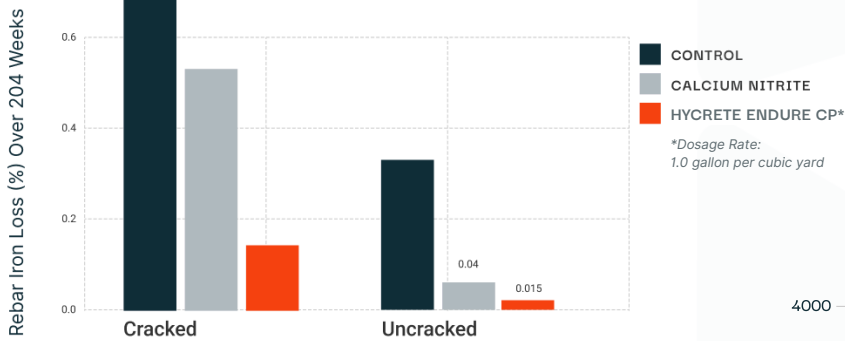
Hycrete

**PRODUCT PERFORMANCE\***

|                                   |                                    |   |
|-----------------------------------|------------------------------------|---|
| Corrosion protection              | ASTM G109<br>ASTM C1556            | Demonstrated protection against reinforcement bar corrosion and chloride penetration.   |
| Capillary absorption              | ASTM C1585                         | Up to 60% reduction at 7 days.  |
| Water absorption                  | BSI 1881-122                       | Less than 1% absorption, up to seven times reduction compared to control.   |
| Permeability/hydrostatic pressure | DIN 1048<br>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   |
| Type S Admixtures                 | ASTM C494                          | Meets/Exceeds   |
| 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                     | NSF/ANSI 61                        | Approved for use in potable water tanks 50,000 gallons or greater and pipes 84" in diameter and greater.  |
| 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 Endure CP (formerly X1000) dosage, or other factors.

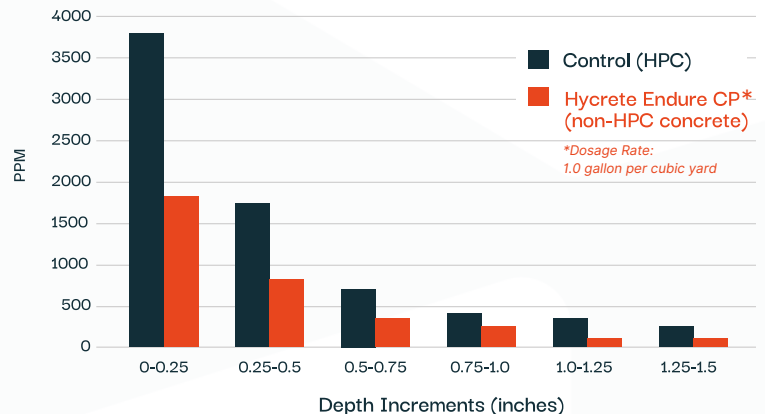
**CORROSION PERFORMANCE**



Hycrete effectively reduces rust even in cracked concrete.

UNIVERSITY OF MASSACHUSETTS

**CHLORIDE DIFFUSION IN DOT TEST BRIDGE**



## GENERAL PROPERTIES AND CHARACTERISTICS

|  |  |
|--|--|
| <b>Physical characteristics:</b><br>Form: Liquid<br>Specific gravity: 1.05<br>Chloride content: Nil<br>pH: 8.5   | <b>Compatibility:</b> <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> |
| <b>Recommended dosage:</b><br>0.5 to 1.0 U.S. gallon per cubic yard of concrete (5.0 liters per cubic meter) depending on environmental/exposure conditions.   |  |
| <b>Packaging:</b><br>1 gallon bottles; 5 gallon pails; 55 gallon drums; 275 gallon totes; bulk tanker delivery   |  |
| <b>Storage and handling:</b><br>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 |  |

### Notes

- For air-entrained concrete mixes speak to your local Hycrete Rep for proper mix design.
- User should perform trial mixes prior to placement and make necessary adjustments to the mix design as needed.
- If considering dosages other than recommended dosage contact Technical Services before use.
- Please remove an equal amount of mix water as dosage of Hycrete admixture to maintain the mix design water to cement ratio.  
Example: Hycrete dosage 1 gallon per cubic yard - mix water removed 1 gallon.

### Safety

- Hycrete Endure CP (formerly X1000) 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 Endure CP
- For air-entrained concrete mixes speak to your local Hycrete Rep for proper mix design.
- Hycrete Testing Summary



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