

REPRINT | CONCRETE TECHNOLOGY

Combination of antimicrobial and crystalline waterproofing for enhanced concrete corrosion protection



Antimicrobial Crystalline Technology

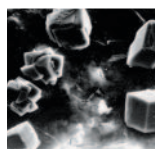
for maximum protection of concrete in severe sewage conditions

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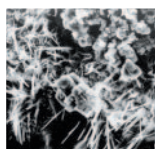
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Concrete
(Untreated)



Xypex Crystallization
(Initiated)



Xypex Crystallization
(Mature)

Xypex Bio-San C500 is a uniquely designed admixture for integral, long-term protection of concrete in harsh sewage conditions with high levels of H_2S that cause microbial induced corrosion. Bio-San C500 combines potent antimicrobial protection along with the unique crystalline technology of the Xypex Admix C-Series. Bio-San C500 prevents microbial induced corrosion, stops infiltration/exfiltration of water, and provides acid and sulphate resistance, significantly extending the service life of concrete sewage collection systems and waste water infrastructure.

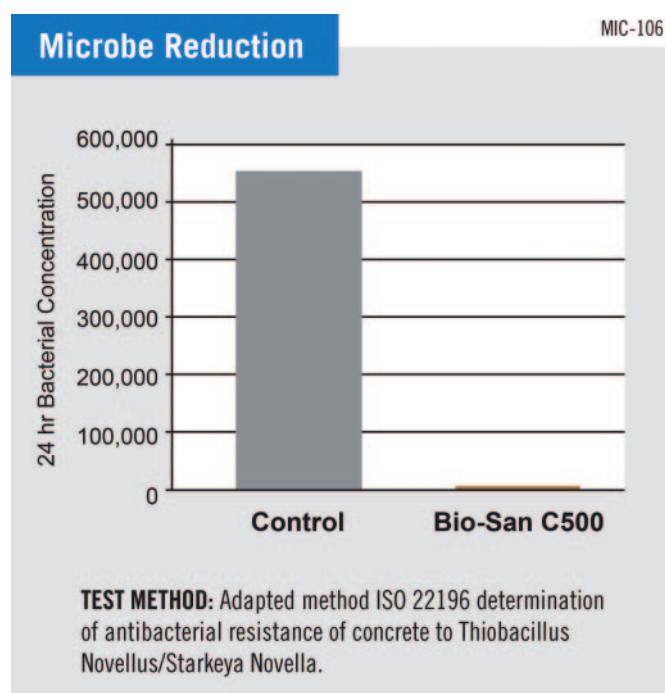


Xypex Chemical Corporation, V6V 2G9, Richmond BC, Canada

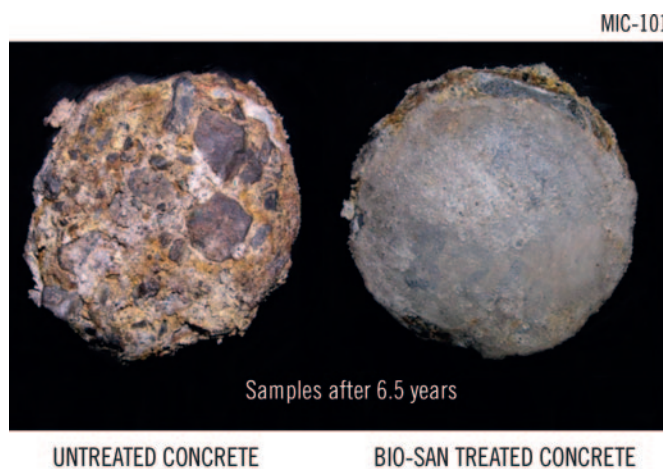
Combination of antimicrobial and crystalline waterproofing for enhanced concrete corrosion protection

Xypex Chemical Corp., a global provider of concrete waterproofing and protection solutions, recently announced Bio-San C500, a new admixture to protect concrete against multiple forms of corrosion attack by combining a potent antimicrobial with Xypex Crystalline Technology waterproofing. Xypex Bio-San C500 is a unique new way to protect concrete wastewater systems from microbial induced corrosion (MIC) and against infiltration/exfiltration of liquids even under extreme hydrostatic pressure.

Xypex Bio-San C500 admix provides a convenient and effective solution for concrete precasters and ready-mix plants to meet the growing need for corrosion resistant concrete pipe, manholes, and cast-in-place wastewater system components. Concrete products and structures produced using Bio-San C500 admixture can be used in place of epoxy coated or plastic lined pipe in many applications or in addition to coatings and liners in the most severe environments.



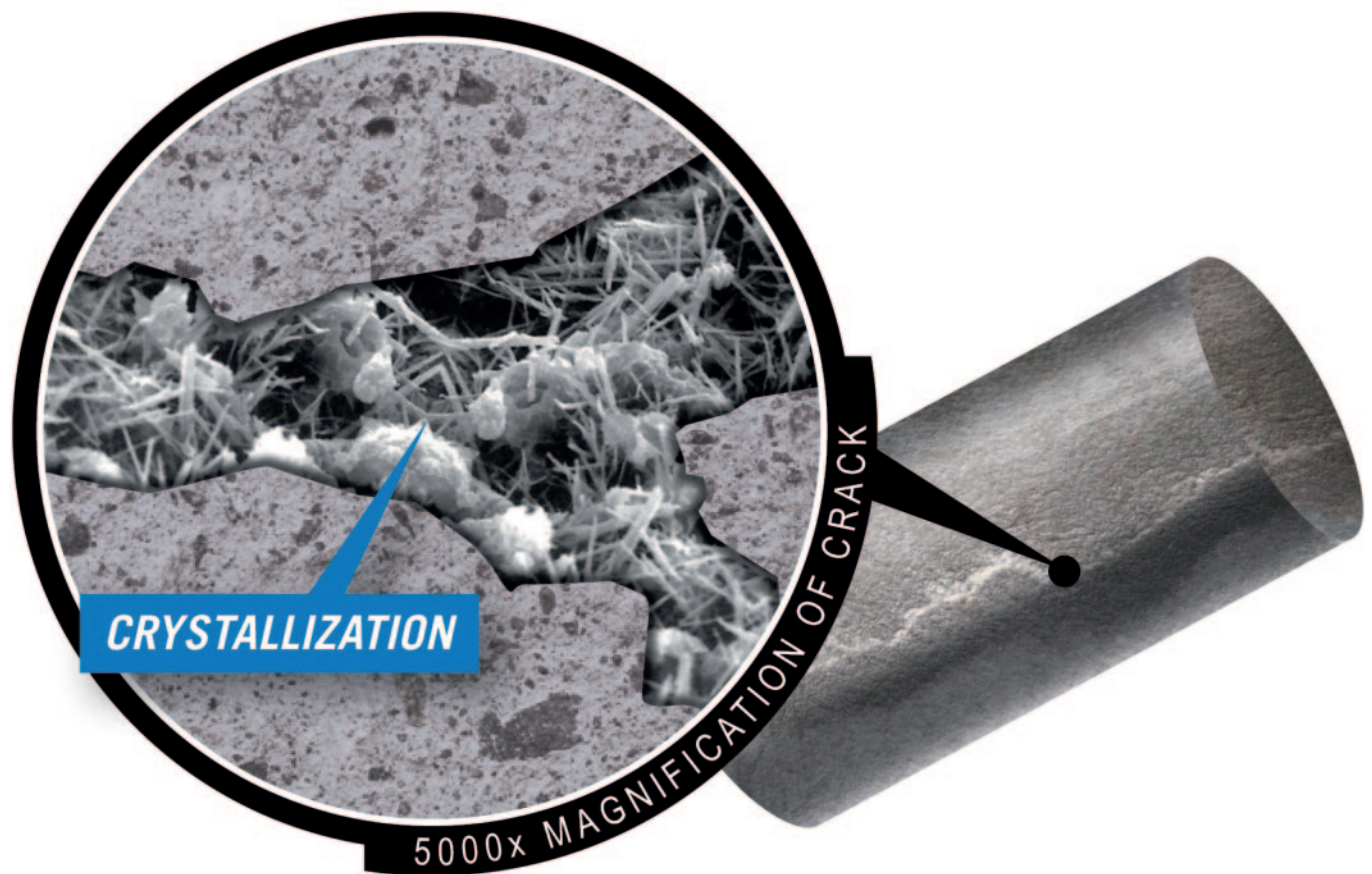
Xypex Bio-San C500 kills the acid-generating microbes in sewage environments.



Specimens of concrete treated with Xypex Bio-San active ingredient as well as untreated concrete were hung in the enclosed sedimentation tanks at a wastewater facility with H_2S concentrations of over 50 ppm. The sample on the left in the photo above shows the untreated concrete and the extent of the microbial induced corrosion after 6.5 years. After 10 years the treated concrete (at right in photo) had 9 times less corrosion than the untreated concrete.

"Bio-San C500 gives concrete product producers and design engineers an innovative new way to provide their customers with the highest level of corrosion resistance and waterproofing," says Dave Ross, Xypex Technical Services Director. "By blending our Xypex Crystalline Technology with antimicrobial mineral solids, Bio-San C500 simplifies the production process and ensures product quality."

According to Ross, the bio-active minerals in Xypex Bio-San C500 kill acid-generating microbes such as *Thiobacillus* that thrive in the presence of the hydrogen sulfide gas (H_2S) produced within sewer systems. "Bio-San C500 is incorporated into the concrete at the time of batching so it becomes an integral part of the concrete product and its benefits last the life of the product. The antimicrobial bio-active minerals emit ions that rupture the cell membrane of bacteria and then destroy the cell from the inside out."



After four days the 0.38 mm crack on the Xypex treated sample had stopped leaking completely.

Key benefits of Xypex Bio-San C500 include the following:

- Kills the microbes that cause microbial induced corrosion in concrete sewers
- Resists extreme hydrostatic pressure
- Protects against aggressive chemicals, including acids and sulphates
- Seals hairline cracks
- Becomes a permanent, integral part of the concrete – cannot be punctured, damaged or lose adhesion
- Provides visual mix quality indicator via its unique beige color signature.

Xypex Bio-San is also now available in Xypex Megamix II, a resurfacing mortar specifically designed for the restoration of deteriorated concrete surfaces caused by microbial induced corrosion, abrasion/erosion and chemical attack. Xypex Megamix II with Bio-San is a one component mortar that can be spray or trowel applied. ■

FURTHER INFORMATION



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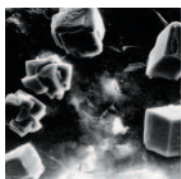
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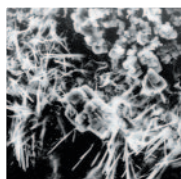
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