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PRECAST

THE VOICE OF THE PRECAST CONCRETE INDUSTRY

- Robotics growing the industry
- Recycled concrete deserves recognition
- Extraordinary precast products

CONCRETE MANUFACTURERS ASSOCIATION
Quality cast in concrete

NEW ADMIXTURE PROVIDES **LASTING SEWER PROTECTION**

Concrete additive supplier, Xypex Chemical Corporation, has introduced an infrastructure-sparing admixture that provides antimicrobial and waterproofing properties for concrete products in sewer environments.

In certain situations, acid-producing micro-organisms – including the Thiobacillus group of bacteria – are able to eat away sewers through microbial-induced corrosion (MIC), which produces biogenic sulphuric acid that reduces the surface pH of the concrete and leads to rapid decay of the infrastructure. The breakdown of wastewater infrastructure allows leaks to develop, which can ultimately affect the integrity of the pipelines and cause the complete collapse of the system.

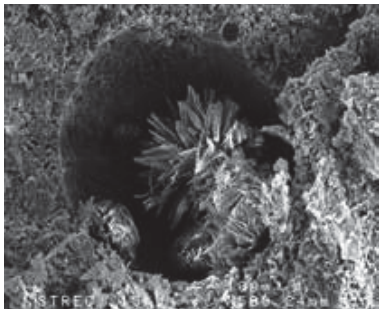
While alternatives do exist, including PVC pipes, crystalline waterproofing and chemical-resistant coatings, these have limitations and are not always ideal for every type of application, especially large-scale and larger-diameter pipe applications. In these circumstances, the simple addition of the powder form Xypex Bio-San C500 admixture provides permanent protection for precast and in-situ concrete structures.

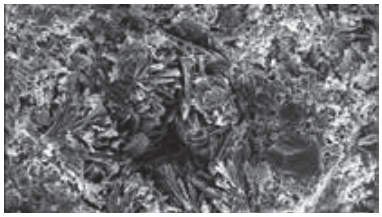
Concrete advantages

According to Xypex (UK) LLP export sales manager Stephen Minney, the new admixture is an exciting innovation for precasters who can easily extend their product range and compete in new markets. Xypex Bio-San C500 concrete products will have built-in, long-term protection for harsh sewage conditions where MIC attacks are likely. The additive combines potent antimicrobial protection along with the unique crystalline technology of the Xypex Admix C-Series.

"It prevents MIC, stops infiltration/exfiltration of water and provides acid- and sulphate-resistance, significantly extending the service life of concrete sewage collection systems and wastewater infrastructure. This, in turn, provides design engineers with the option of using these to extend the life of the infrastructure projects and enjoy the benefits of strong, durable and cost-effective concrete, rather than costly and potentially troublesome alternative materials such as composites, plastics or steel.

"Concrete containing Xypex Bio-San C500 maintains all of its original properties, including workability, while providing an impermeable surface that remains MIC-resistant for the duration of the lifespan of the concrete," says Minney.





(Above, from top): Crystalline growth begins in concrete; crystalline growth completely fills openings.

Simple procedure

He explains that the dual-protection product is manufactured in the form of a dry powder that can be added to concrete manually or through computer-controlled batching systems. It can also be added directly to the central mixer in a plant and provides precasters and ready-mix producers with a product that can be added to their product line-up or for special projects, wherever it is required.

Upon final curing, the antimicrobial components are fixed in a mineral matrix within the concrete and will remain active, working indefinitely to kill harmful microbes at a cellular level. It does this through the constant release of metallic ions which open holes in the bacteria's cell membranes, thus destroying them from the inside.

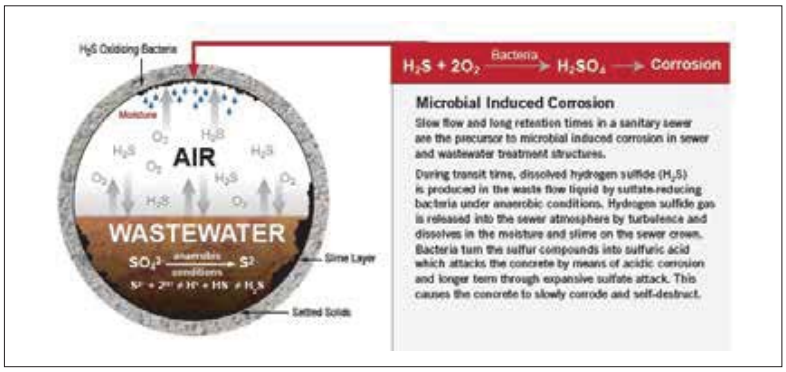
Due to its structure, it is an integral part of the concrete and therefore can never be washed off or wear out. It will continue working indefinitely for as long as the concrete is in place. This is in line with new mandates of infrastructure owners who are seeking longer-lasting alternatives to current methods.

World leader

"Our product is being used widely in markets throughout the world, wherever longevity of infrastructure is required. It's a comparatively cost-effective means of protecting infrastructure and provides engineers with real-world solutions to extend the lifespan of wastewater infrastructure," says Minney.

"In the past, engineers may have designed special mixes to try to stave off damage for as long as possible, or may have turned to alternative materials that aren't as effective as concrete and, in most instances, are far costlier.

"With the addition of our Xypex Bio-San C500 in precast products, infrastructure can simply be lifted into place and even added to grouting to provide true install-and-forget projects for our wastewater utilities. It also provides exciting new prospects for our precast community, who will be better able to compete against alternative products in future." P



Antimicrobial Crystalline Technology

for maximum protection of concrete in severe sewage conditions.

NO EQUAL

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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 is 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 infrastructure.

XYPEX®

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