Product in Focus
MasterLife® 300 Series Crystalline Capillary Waterproofing Admixtures
For producing watertight concrete structures
MasterLife® 300 Series Crystalline Capillary Waterproofing Admixtures

Achieving Watertight Concrete
Strategies to help achieve watertight concrete include proper construction practices, and the use of a water-reducing admixture, supplementary cementitious materials, and a permeability-reducing admixture (PRA), each working in concert to lower concrete permeability, thereby improving its watertightness. MasterLife 300 Series, integral, crystalline-based, permeability-reducing admixtures are a key component for producing durable, watertight concrete. The MasterLife Series of admixtures consist of MasterLife 300D, MasterLife 300C and MasterLife 300L admixtures.

The Role of MasterLife 300 Series Admixtures in Watertight Concrete
MasterLife 300 Series admixtures are uniquely formulated to react in concrete, in the presence of moisture, to form additional calcium silicate hydrate gel and insoluble crystalline products that fill fine pores and seal hairline cracks in concrete.

Concrete structures containing MasterLife 300 Series admixtures will have reduced penetration of water and other liquids, enhanced resistance to hydrostatic pressure, and protection against sewage and industrial wastes*.

Concrete at 40,000x magnification
The following images captured with a scanning electron microscope (SEM) compare concrete microstructure with and without the use of MasterLife 300D admixture.

Quantifying Performance
The penetration of water into concrete can be measured by the commonly specified DIN 1048 water penetration test method [DIN 1048, Part 5 – Testing Concrete: Testing of Hardened Concrete (specimens prepared in mould)].

Concrete Permeability
Concrete is a porous and absorptive material susceptible to cracking. It contains pores and microcracks that when interconnected become pathways for movement of water (referred to as its permeability) as illustrated in Figure 1.

Applications
MasterLife 300 Series admixtures have been used or specified for use in hundreds of structures requiring waterproofing, including precast elements, water treatment plants, wastewater treatment facilities, recreation ponds, swimming pools and other above- and below-grade concrete structures.

Sustainability
Today’s demands for high-quality, long lasting structures include the need for more sustainable concrete solutions to reduce environmental impacts. We support our customers by quantifying the environmental impacts of concrete mixtures containing MasterLife 300 Series admixtures using science-based, third-party verified Eco-Efficiency Analyses and Environmental Product Declarations.

Sarasota Memorial Hospital, Sarasota, FL

As shown in Figure 2, water penetration into the concrete sample treated with MasterLife 300D admixture could not be measured.
Partnering for Success
We’re here to help you with your construction challenges by providing a wide range of concrete technology solutions.

• Extensive concrete admixture portfolio
• Advanced concrete mixture optimization expertise
• Certified provider of Environmental Product Declarations
• Vast North American network of field experts and project support
• Global concrete technology research and testing centers
• Innovative concrete technology pipeline for over 100 years
Master Builders Solutions

The Master Builders Solutions brand brings expertise to create chemical solutions for new construction, maintenance, repair and renovation of structures. Master Builders Solutions is built on the experience gained from more than a century in the construction industry.

The know-how and experience of a global community of construction experts form the core of Master Builders Solutions. We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction.

The comprehensive portfolio under the Master Builders Solutions brand encompasses concrete admixtures, cement additives, chemical solutions for underground construction, fiber reinforcement solutions, waterproofing solutions, sealants, concrete repair & protection solutions, performance grouts, and performance flooring solutions.