KRYTON

At the Lab. In the Field. By Your Side.

AL-FALAK RESIDENTIAL BUILDING

(Below-Grade Slab, Walls & Water Tank)
DAMMAM, SAUDI ARABIA

February, 2004

QUESTIONS: 1-800-267-8280 or www.kryton.com

CONCRETE WATERPROOFING

PROJECT CASESTUDY

BACKGROUND

The Al-Falak building is a new residential/commercial building currently under construction in Dammam, Saudi Arabia. When investigating waterproofing options for the building's below-grade slab, walls and water tank, the project team knew they needed a system that was cost-effective and low-maintenance. However, their search was made more complicated by a number of factors.

First, the area's soil contains extremely high levels of sulphates and chlorides, which can decrease the integrity of concrete and corrode steel reinforcements. This has a large, negative effect on the useful lifespan of concrete buildings in the region.

Second, the region's hot, dry climate can dramatically shorten concrete's setting time, resulting in weaker concrete and enhancing the likelihood of shrinkage and cracking.

Finally, because the Al-Falak building's underground water tank is designed to hold drinking water for building occupants, the chosen waterproofing method needed to be non-toxic and protect against the migration of contaminants from the soil around the tank.

SOLUTION

All parties involved with the construction of the Al-Falak building agreed that Kryton's Krystol™ Internal Membrane (KIM™) represented the best solution for this project because it provides superior waterproofing and corrosion protection at a highly affordable price.

KIM™ is an innovative concrete admixture that incorporates Krystol™, Kryton's proprietary crystalline technology. When added to a concrete mixture, KIM™ cures to form crystals that fill the spaces between concrete particles, blocking water penetration from all directions. KIM™ reacts with incoming water to self-seal small concrete cracks, providing permanent leakage protection and eliminating maintenance and repair costs.

By blocking the penetration of water that can carry contaminants such as salt, chlorides and other chemicals, KIM™ safeguards steel reinforcements against corrosion. KIM™ is also certified non-toxic by NSF International, a widely respected third-party certification provider that develops standards for food, indoor air, the environment and water.

When used in hot climates, KIM™ helps to cool concrete and reduce premature moisture loss, creating a more durable structure and reducing shrinkage and cracking. Unlike external membrane systems that can become brittle and deteriorate in hot, dry conditions, KIM™ is unaffected by the desert climate and remains effective for the life of the structure.

Eight-hundred-and-thirty cubic metres of KIM™ concrete were used in the Al-Falak building, which is scheduled for completion in late 2004.

LOCATION
Dammam, Saudi Arabia

DISTRIBUTOR
Abdullah Al-Rashid Trading Est. (ARTE)

CONTRACTOR
Shade Corporation Ltd.

CONCRETE SUPPLIER
Saudi Ready Mix

CONSULTING ENGINEERS
Engineering Design & Supervision Firm

OWNER
Al-Falak Electronic Equipment and Suppliers

The Kryton Group of Companies.
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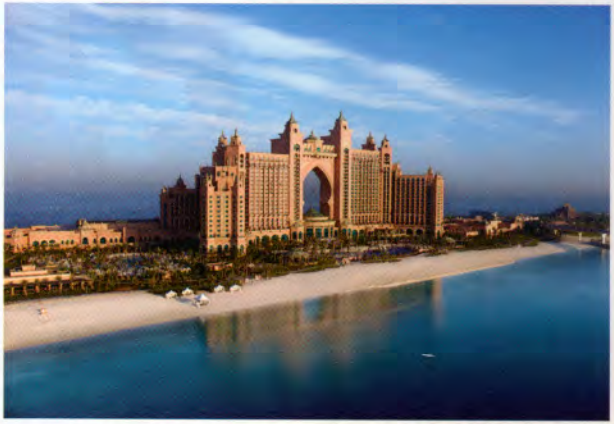
Concrete Knowledge

Kryton is recognized and acknowledged as the specialist in taking the risk out of concrete waterproofing globally. Attendees visiting The Big 5 will learn about Kryton's Krystol Internal Membrane–Extended Set (KIM-ES) which has been optimized for hot climate challenges and mass concreting. At the Canadian Pavilion, Kryton will display its KIM-ES, which is a modification of Kryton's KIM, the world's first integral crystalline waterproofing admixture for concrete that turns an entire concrete mass into a waterproof barrier. The company's KIM admixture eliminates the need for membranes and is well suited for use in water containment. The new technology provides excellent resistance to harmful caustic effects of contact with sewage, wastewater and waterborne chemicals such as sulphates, chlorides and acids. Kryton's products are safe for contact with potable water and certified by NSF to NSF/ANSI Standard 61 Drinking Water System Components – Health Effects. Being cognizant of unique regional needs has won Kryton major projects such as the water tanks at the Atlantis Hotel, the repair of water tanks at the Pearl-Qatar, the construction of watertight water tanks at the Al-Falak building in Saudi Arabia and the construction of the drinking water tank at the Emirates Airline call center in Dubai. Uniquely, Kryton provides a complete system that is proven to take the risk out of concrete waterproofing. Kryton offers admixture solutions, surface-applied treatments, repair and maintenance products, joint waterproofing protection and water repellent sealer. ■



Kryton products waterproofed below grade water storage tanks at the Atlantis Hotel, Dubai