Newburyport Wastewater Treatment Facility

Newburyport, MA, USA

PRODUCT USED:

Krystol Internal Membrane™ (KIM®)

OWNER:	ENGINEER:	CONTRACTOR:	READY-MIX SUPPLIER:
City of Newburyport	AECOM Wakefield	Kinsmen Group	J.G. MacLellan Concrete Co. Inc.

BACKGROUND

Since its inception in 1984, the Newburyport Wastewater Treatment Facility in Newburyport, Massachusetts, has provided nearby communities with a biological treatment for wastewater. Over the years, it has treated sludge before discharging the sanitized contents into the Merrimack River, and it has done so for up to 3.4 million gallons per day of wastewater.

However, by 2012, the owner of the facility wanted to modernize and improve its ability to handle current and future water flows. Part of this upgrade included the construction of a new building for an operations, control, and laboratory section. This new area would be on a lot adjacent to the existing facility, and the architects aimed to make its design permanently waterproof while also incorporating principles from the LEED Program. All of which would require a unique and reliable waterproofing system.

SOLUTION

Due to its permanent waterproofing, self-sealing capabilities, and LEED eligibility, Kryton's KIM quickly became the desired waterproofing system for the Newburyport Wastewater Treatment Facility upgrade. As a result, the construction team added it to the concrete mix. That gave the concrete protection from any water ingress as the Krystol® technology within KIM will react with water to form interlocking needle-shaped crystals, filling any capillary pores and blocking any pathways for water. Even if water is introduced through a rise in hydrostatic pressure, the crystals will continue to grow, initiating crystallization and ensuring permanent waterproofing.

KRYTON®

SMART CONCRETE®

Newburyport Wastewater Treatment Facility

Newburyport, MA, USA

PRODUCT USED:

Krystol Internal Membrane™ (KIM®)

To check how well this process worked, the construction team tested the tank for leaks after pouring the concrete. After a week, a significant amount of leakage had stopped. Despite this positive progress, the contractor was concerned about the potential overrun of the final completion date. As a result, the contractor was immediately poised and ready to inject the cracks to stop the leaks. However, consultants at the site advised him to wait. They assured him that if by two more weeks the injections were still necessary, the completion date would be extended accordingly.

Luckily, thanks to the crystalline self-sealing properties of KIM's proprietary Krystol technology, the walls were completely sealed before the end of the two-week period and no injection was necessary. The contractor who was initially skeptical about the added cost to concrete because of the KIM admixture requirement was delighted with being able to save time near the end and avoid the additional expense of the epoxy injections.

KRYTON®

SMART CONCRETE®

Kryton International Inc.

1645 East Kent Avenue, Vancouver, BC, Canada, V5P 2S8 | T 1.604.324.8280 | F 1.604.324.8899 | W kryton.com | E info@kryton.com