

FIRE VEHICLE REPAIR FACILITY

Edmonton, Alberta, CA (2001)

BACKGROUND

The repair and maintenance of our emergency response vehicles, such as those needed to be at peak performance to fight fires, is extremely important to the communities they serve. Thus, fire vehicle repair and maintenance facilities the world over must be built with durability top-of-mind so they can remain operational to perform its duty for communities. This was certainly the case behind the construction of the Fire Vehicle Repair Facility in Edmonton, Alberta.

A conventional external waterproofing membrane was originally specified for the Edmonton job; however, during construction, concern grew for the potential of leakage. Many details in the below grade concrete, such as mechanics' trenches, hoist pits and sump pits proved to be difficult for conventional membrane installation. Also, poor soil conditions in high water table areas have a high silt content that retains moisture, which can swell and shrink, causing stress on below grade structural components. A concrete waterproofing method that defended against these concerns was needed to ensure the structure would remain functional during all-seasons.

SOLUTION

To satisfy the need for a watertight concrete seal that would be finished ahead of schedule and require less maintenance, Kryton's Krystol Internal Membrane™ (KIM®) was applied to the concrete mix at the batching plant. Saving the arduous task of setting an external membrane was not needed, as the KIM admixture turns the concrete into the waterproof barrier. KIM also provided relief for concern over contamination of the re-circulation tank and for potential leakage in consideration of the challenging site and soil conditions.

Important to the success of the project is that contaminated water is kept from leaking in and/or out of the sump pits. To date, the structure is performing excellent. Subsequent construction commenced next door, where engineers have required piles be driven into the poor soil conditions and basements are being avoided altogether. The Fire Vehicle repair Facility is continuing to work as specified, keeping the city of Edmonton's fire fleet in tip-top shape. "KIM saved days off the critical path as it expedited the construction schedule," says Dwayne Chmiliar, Pentagon Structures Ltd. "KIM certainly did the trick!"



One of the below grade pits needed to repair the fire vehicles.



Exterior of the Fire Vehicle Repair Facility in chilly Edmonton, Alberta.

OWNER:

City of Edmonton

DEVELOPER:

KPK Quantity Surveyor Sdn Bhd

ARCHITECT/ENGINEER:

BPTec Engineering Group/
Larrie Taylor Architect Ltd.

CONTRACTOR:

Pentagon Structures Ltd.

DISTRIBUTOR:

Kryton International Inc.

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PRODUCTS:

Learn more at kryton.com
Krystol Internal Membrane™
(KIM®)