

PROJECT PROFILE



Project: Truro, Nova Scotia
Equalization Tanks, Installation 2011

Investigation: ADI

Designer: Owner

Contractor: Eastern Infrastructure

Gemite products: **Fibre-Prime, Spray-Con WS ST, Cem-Kote Flex CR**

Objective: repair, waterproofing and chemical protection of equalization tank of an industrial facility. The tank is a part of biodegrading facility and is exposed to high levels of hydrogen sulfide. (The information on concrete specification is available on request). The tank was constructed in 1995 with tanks originally not covered. The town expansion resulted in complaints about the smell. For this reason the tank was covered in 2003. There was no deterioration of the tank until then, but since 2003 till 2010, the time of the inspection, there was a serious concrete and the reinforcing steel deterioration as shown in Figure 1 and 2.

The repair procedure consisted of the following steps: the hydro-demolition removal of deteriorated concrete, (see Figure 3), replacement of deteriorated reinforcement, application of **Fibre-Prime** rust-proofing over all exposed reinforcing steel, wet shotcrete application of **Spray-Con WS ST**, 10-15 cm to repair the concrete surface (see Figure 4 and 5) and application of two coats of **Cem-Kote Flex CR** – waterproofing coating resistant to H₂S. **Spray-Con WS ST** was supplied in concentrate to the ready mix plant and mixed with specified amounts of cement, and aggregate; and supplied in 3 cubic meter quantities to the site for wet process shotcrete application.



Figure 1: concrete deterioration taking place between 2003 and 2010, after the placement of roof in 2003.



Figure 3 - left: hydro-demolition was used to remove deteriorated concrete, missing reinforcing steel was replaced and all steel treated with Fibre-Prime rust-proofing.

Figure 2 - right: the “top” reinforcing steel in some places was completely corroded





Figure 4. Application of Spray-Con WS ST, wet shotcrete, to repair concrete sections. Spray-Con WS ST was supplied as concentrate, and mixed with cement water and aggregates, according to mix design supplied by Gemite, in the near batch plant. The first batch was 2 cubic meters, the following batches were supplied in mixing truck by 3 cubic meter sizes.



Figure 5: Spray-Con WS ST repair. The entire surface of the tank was coated with Cem-Kote Flex CR within 2-3 days after application of Spray-Con WS ST

For further information, please contact Gemite Products Inc.
1787 Drew Road, Mississauga, Ontario, Canada, L5S 1J5,
Phone (905) 672-2020, Fax (905) 672-6780 or
160-3840 East Robinson Road,
Amherst, New York, 14228, USA,
Toll Free (888) 443-6483, Fax (888) 443-6329
www.gemite.com
techinfo@gemite.com