

PROJECT PROFILE



**Project: Brantford (Holmedale) Water Treatment Facility
Installation 1998 - Inspection 2011**

Designer: Proctor Redfern

Contractor: Bennett Construction Millgrove Ltd., Algoma Contractors Ltd., waterproofing sub-contractor

Gemite product: Cem-Kote Flex ST

Objective: waterproofing of tanks in the water pre-treatment plant and other tanks of the facility. The project was carried out in 1998 with the **Cem-Kote Flex ST** waterproofing installed the same year.

In October 2011 water pre-treatment tanks were inspected by representatives of Dillon, Bennett, Algoma and Gemite. The water pre-treatment consists of three stages - three tanks. In tanks #1 and #2 the polymer coagulant and carbon, together with circulating sand are used to remove the solids contaminants (the river mud). The sand with deposited mud settles at the bottom of the tanks and is pumped out, cleaned and recycled. The sand pumping and cleaning equipment is shown in Figure #1. Figure # 2 shows the application of **Cem-Kote Flex ST** in the tank #2 in 1998. Note the exterior wall is completely coated, the tank partition wall is coated only several feet out. Figure #3 shows the same area after cleaning in October 2011. On the left hand side of Figure #3 is dark, un-cleaned area of carbonated sludge on the surface of concrete, to the right is a strip of clean concrete surface and further to the right is surface of **Cem-Kote**



Figure #1: top of tanks showing the sand cleaning and recycling equipment



Figure #2: Cem-Kote Flex ST waterproofing applied to exterior wall of the tank #2 and partly on partition wall separating tanks #1 and #2

Figure #3. The same as the area shown in Figure #2. The black area to the left is concrete covered with carbonated sludge, in the middle is clean concrete surface and to the right Cem-Flex ST marked by stream of high pressure water.



Flex ST marked by the stream of high pressure water. The surface of concrete and **Cem-Kote Flex ST** was cleaned with 5,000 psi water. The removal of **Cem-Kote Flex ST** requires water pressure exceeding 12,000 psi. In the Tank #3 of the series, the residual sludge is allowed to settle and is scraped from the bottom of the tank. The bottom of the tank as constructed in 1998 is shown in Figure #4. The inspection of **Cem-Kote Flex ST** in this tank is shown in Figure #5. In this case again, in spite of the scraping action at the bottom, **Cem-Kote Flex ST** was undamaged. The removal of **Cem-Kote Flex ST** required pressure in excess of 12,000 psi and the cleaning of **Cem-Kote Flex ST** pressure of 5,000 psi.



Figure #4. Tank #3



Figure #5: the bottom of the Tank #3. Cleaned Cem-Kote Flex ST to the right, the removal required water pressure in excess of 12,000 psi.

During construction in 2010, the chlorine tanks of the same facility were refurbished and the process changed to ozone treatment. Again, the removal of **Cem-Kote Flex ST** required pressure in excess of 12,000 psi. The refurbished ozone treatment tank are shown in Figures # 6 and 7



Figure 6. Refurbished chlorine treatment tanks to ozone treatment. Initial installation in 1998, modification in 2010



Figure 7. Refurbished chlorine treatment tanks to ozone treatment. Initial installation in 1998, modification in

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