

GE Booth Wastewater Treatment Plant

Abrasive sludge meets its match with Ceram Core

Background

GE Booth Wastewater Treatment Plant, formerly Lakeview Wastewater Treatment Plant, in Mississauga, Ontario uses thermal oxidation to incinerate dewatered sludge to ash.

With harsh operating conditions, GE Booth needed a piping system that could handle the abrasive sludge conditions. The existing metallic piping system was severely corroded, creating operating inefficiencies and maintenance problems for the plant. The ash slurry piping ranges in diameter from 8 to 14 in. Several thousand feet of pipe and hundreds of fittings are installed throughout the facility.

Solution

Our Ceram Core™ product was installed in 1994 to replace corroded metallic pipe, with subsequent installations having been done over the last 25 years. Ceram Core includes a special abrasion resistant liner composed of small spherical beads of high alumina ceramic held in an epoxy matrix, making it an ideal solution for long-term performance against highly abrasive applications.

With the success of our fiberglass piping in sludge applications, air pollution control systems using our 4 to 8 in. Silver Streak™ product were later added to reduce mercury and other emissions.

Continued Success

A similar project was completed at the Duffin Creek Water Pollution Control Plant (WPCP) in 2008, with additional projects in 2010 and 2011. The size range of the Ceram Core was 6 to 12 in. and Silver Streak diameters ranged from 2 to 12 in. The Duffin Creek WPCP has operating parameters of 630,000 m³/day (166,428,393 gal/day) capacity.

In addition to the piping we also provided design assistance, installation training and site inspections.

Plant Operating Conditions Overview

- 518,000 m³/day (136,841,123 gal/day) overall capacity
- 48,000 m³/day (11,834,907 gal/day) ash slurry capacity
- Corrosive slurry with a typical pH of 3.68
- Design operating temperature - 60° C (140° F)
- Fluid S.G. – 0.984
- The approximate flowrate in each of the 200 mm diameter lines is 95 l/s (1,500 gpm)



Ash Disposal Header



Ash Pump Piping



Corroded chrome-iron alloy piping removed from service