

Stelco Hilton Works - PORRI Plant

Hamilton, Ontario

Tank Lining

Problem

Waste oil generated from Stelco's steelmaking process is sent to their PORRI Plant for separation, filtration and recycling. The oil is collected in large FRP (fiberglass reinforced plastic) tanks where steam and compressed air are injected through a sparger system to heat and agitate the material. Sulfuric acid is then added to separate the waste materials from the oil, which is skimmed off, filtered, and sent for recycling.

This combination of acid, heat, and agitation has an extremely corrosive effect on the internal surfaces of the tanks. Limited access within the plant also makes it very difficult to replace tanks as they deteriorate.



Sanding prior to application of waxcoat

Solution

Since 1990, Stelco's Utilities Department has contracted Inscan to perform annual inspections of the tanks in the PORRI Plant. As required, Inscan applies new fiberglass reinforced corrosion barriers in the tanks. Based on a rotating maintenance schedule, one or two tanks are typically relined per year.



Application of waxcoat - top view

Before the installation process can begin, atmospheric testing must be performed in the tank and all confined space entry requirements must be met in order to ensure the safety of the installers. Fresh air is supplied to the tank on a continual basis.

The existing corrosion barrier is sandblasted to remove any contaminants or loose material, and to create a surface profile for superior adhesion of the new system. Three layers of fiberglass mat and a single layer of fiberglass veil are then laid up and saturated with vinyl ester resin. Any entrapped air bubbles are carefully rolled and removed to ensure

uninterrupted bonding to the substrate. After cure, all surfaces are lightly sanded and inspected for minor defects. A final wax coat is applied to achieve a full cure of the resin system. When completed, the tank is protected by a monolithic, chemical and abrasion resistant liner capable of standing up to the extremely harsh conditions required in the process.

Careful preparation, applicator expertise, and attention to detail are all essential components in the successful application of a fiberglass reinforced liner. For many years, companies like Stelco have relied on the experts at Inscan to do the job right the first time, every time.

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