



Crane holding up a airshaft coating with Denso's Protal 7200.



A steel air shaft is welded to a tunnel section prior to the Protal liquid epoxy coating application.

Project Data

Location	Ontario, Canada
Completed	2009
Project Type	Steel Air Shaft Corrosion Prevention
Products / Systems Used	Protal 7125 & Protal 7200 (Protal 7250 in Canada)

Project Details

After beginning one of North America's largest hydro-electric tunneling projects at Niagara Falls, the Ontario Power Generation company needed to supply vertical access to a 47.2 foot diameter tunnel being bored 459 feet below the surface.

When completed, the tunnel will measure over 33,000 feet in length. The project called for 5' x 36" diameter fresh air shafts to be bored vertically from the surface into the tunnel. These vertical shafts will also provide equipment access and pump access for emergency water evacuation. Denso Canada was chosen to supply Protal 7250 and Protal 7125 to all the exterior surfaces of the vertical steel pipes, each shaft covering a distance of nearly 500' vertically, linking to the horizontal tunnel beneath. Each of the 5 shafts was spaced approximately 13 feet apart along a specific section of the tunnel. Each pipe section was coated in plant with Protal 7250 and shipped to site where it was hoisted by crane and lowered into the shaft.

Using a collar arrangement to prevent the pipe length from slipping down the shaft, each hoisted pipe section was welded in place and lowered into the ground. The girth weld area was then coated with Protal 7125 and the entire process was repeated until all the sections were finished. The vertical shaft work was completed in the winter months at sub-zero temperatures, hence the use of Protal 7125 on the field applied girth welds.

Benefits

- Cold temperature application down to -4°F (-20°C)
- Will not freeze when applied to substrates below 32°F (0°C)
- Fast cure, fast initial set
- Will cure when submersed in water after application
- High build (up to 50 mils / 1270 microns in one coat)
- Excellent adhesion (compliments FBE coated pipe)