

Burlington Skyway Wastewater Treatment Plant

Burlington, Ontario

Crack Injection

Problem

The Regional Municipality of Halton recently began a project to expand, upgrade, and restore the Burlington Skyway Wastewater Treatment Plant to accommodate population growth and to improve the quality of effluent to Hamilton Harbour. One portion of the project included extensive repairs and restoration of the existing concrete floors, walls, and ceilings of the service tunnels running through the plant. Over the years, many settling cracks had developed and some were leaking process water into the tunnels, creating an unpleasant and unsafe environment for plant operators.



Leaking crack in wall

MacViro Consultants Inc., an engineering firm specializing in water and wastewater treatment facilities, was hired to create a scope of work and select the right contractor to complete the installation.

Solution

The contract was awarded to Inscan Specialty Contracting Services Division based on their competitive pricing, exemplary safety record, and past history of high-quality work for both MacViro Consultants and the Regional Municipality of Halton. The scope of work included polyurethane injection to stop water leaks in more than five thousand lineal feet of cracked concrete, rebuilding of deteriorated expansion joints, and miscellaneous repairs to areas of spalled concrete. Crack injection is a complex process which includes the following steps:



Walls dry after crack injection

- Holes are drilled at 45° to intercept the crack at a depth of one half the thickness of the wall or floor slab.
- Plastic injection packers are installed in the holes.
- Cracks are flushed out with a mild acidic solution and then re-flushed with clean water to remove any residue.
- A water-reactive polyurethane resin is then injected under pressure until it appears at the surface of the crack or at an adjacent port, thus indicating acceptable travel.
- Injection packers are removed and the holes patched.

The success of polyurethane crack injection for leak control depends heavily on proper preparation, product knowledge, and an experienced operator who knows when the crack has received the proper amount of resin. Inscan employs some of the most experienced crack injection experts in the industry and has earned the reputation of being a leader in the field.

The project was completed safely, on schedule, and on budget. The client can now be assured that water leakage will not be a concern in this area for years to come.

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