

ANNULAR BACKFILL

OWNER: REGIONAL MUNICIPALITY OF PEEL
INSTALLER: MCNALLY CONSTRUCTION, INC.

PROJECT SPOTLIGHT

HANLAN WATER PROJECT ONTARIO, CANADA

BACKGROUND INFORMATION

With a population of nearly 1.5 million, the Regional Municipality of Peel is the second-largest municipality in Ontario, and it is rapidly expanding. In 2011, it was clear that the Peel Region was in dire need of a major expansion to its water infrastructure. Its population had increased at a rate that was making it difficult for the municipality to supply water efficiently to all of its residents. Thus began the Hanlan Water Project, the most extensive water main construction project the Region of Peel has ever implemented.

PROJECT DETAILS

The two primary construction components of this project are an 8-foot-diameter (2.4 meters) Hanlan feeder main and a 5-foot-diameter (1.5 meters) Mississauga City Centre subtransmission water main. The construction of the Hanlan feeder main consisted of twinning the existing feeder main, using the tunneling method, in an area that largely consisted of heavy, Georgian Bay shale. The shale presented a unique challenge, as construction included installing 187 feet (57 meters) of inside dimension rib and lagging tunnel 65-100 feet below (19-30 meters) the surface.

This meant that the feeder main, which would run a length of nine miles, needed a compressible annular fill to prevent the surrounding shale from degrading its structural integrity. McNally Construction, Inc. decided to install Aerix Industries AERLITE-iX cellular lightweight concrete. After the tunnel components were in place, the installation crew pumped 19,300 cubic yards (14,756 cubic meters) of cellular concrete a length of 1,200 yards (917 meters) into the backfill area using a three-inch (7.6 cm) hose. With this efficient construction process, the Hanlan feeder main was completed within the construction schedule.

AERIX ADDED VALUE

Aerix's AERLITE-iX cellular concrete was ideal for this project as it provided the compressive strength needed to maintain the structural integrity and function of the Hanlan feeder main, while also reducing construction time. Completion of the Hanlan feeder main enabled the entire project to move forward quickly, and it is anticipated that by early 2017, the Region of Peel will have a completely revamped water infrastructure that will provide water efficiently to its ever-expanding population.



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