

Post-Tensioning Protection Of The Samuel De Champlain Bridge



Dubai, United Arab Emirates Mar 10, 2022 ([IssueWire.com](https://www.issuewire.com)) - PROBLEM

The Samuel De Champlain Bridge is a cable-stay bridge designed by architect Poul Ove Jensen to replace the original Champlain Bridge. Hosting eight lanes for vehicles, with a central portion under construction to accommodate light rail traffic, the new Champlain Bridge is the world's widest two-plane cable-stay bridge and one of the largest infrastructure projects in North America to date. It was built with durability in mind, incorporating stainless steel and high-performance concrete to withstand corrosive environmental conditions and achieve a 125-year service life. A critical part of ensuring bridge durability was finding a way to protect post-tensioning strands from corrosion damage during installation and inevitable winter grouting delays, which extend the window of opportunity for corrosion attack.

APPLICATION

MCI®-309 was selected for the protection of post-tensioning tendons. This was an optimal choice because MCI®-309 can easily be fogged dry into post tension ducts and does not need to be flushed prior to grouting. In order for MCI®-309 to be approved for use on the bridge project, a key requirement was to ensure that MCI®-309 would not adversely affect the grouting bond with the tendons.

Fortunately, this quality was confirmed well ahead of time through corrosion and bond testing at the grouting Laboratory of Pennsylvania State University.

CONCLUSION

The post-tensioning team was very happy with the MCI®-309 application and used it for the duration of the project. Once the main structure was complete, the team was able to boast the following post-tensioning achievements:

- 1274 tons of post-tension strands were installed for a total length of 1084 km (674 mi)
- 20 tendons installed with a length of 365 m (399 yds)
- More than 3200 tendons stressed The same project engineer is involved with post-tensioning for construction of the Réseau Express Métropolitain light rail system and continues to use [MCI®-309](#) to protect post-tensioning strands in this segment of the project.

CORTEC® REPRESENTATIVE

Metals Preservation Group

LOCATION

Quebec, Canada

PRODUCT

MCI®-309

ENGINEER

The Stantec and Ramboll Consortium

DESIGN-BUILD TEAM

SNC-Lavalin, Dragados Canada, Flatiron Constructors Canada, and EBC Inc.

CUSTOMER

Infrastructure Canada and Signature on the Saint Lawrence Group

DATE

2021

Media Contact

Cortec Middle East

cortecmeuae@gmail.com

97144340669

Sidra Tower, Office 1307 Sheikh Zayed Road P.O. Box 115133 Dubai, United Arab Emirates

Source : Cortec Middle East

[See on IssueWire](#)