

Autoroute Dufferin-Montmorency

PROJECT OVERVIEW

MAPEI's Technical Services worked with engineers and contractors to produce a colored *Mapelastic Silver* waterproofing membrane that would exactly meet the requirements for refurbishment of the Autoroute Dufferin-Montmorency in Quebec City, Quebec.



PROJECT INFORMATION

Project Category:	Transportation – Highway
MAPEI Sales Rep:	Marc Desbiens
Project Owner:	Le ministère des Transports du Québec (MTQ)
MAPEI Distributor:	Geroquip
General Contractor:	Pomerleau
Concrete Contractor:	Prismacoat
Photographer:	Olivier Gariépy
Project Size:	245,000 sq. ft. (22 761 m ²)



MAPEI PRODUCTS USED

- *Mapelastic™* Silver



Autoroute Dufferin-Montmorency – Quebec City, Quebec

Mapelastic makes a perfect color match for waterproofing a Quebec autoroute

The Autoroute Dufferin-Montmorency is 5 mi (8 km) long. It begins at Route 175 (corner of Avenue Dufferin and Côte d'Abraham) and ends at the junction with A-40 in Beauport. The portion from Route 175 to Boulevard Henri-Bourassa (Exit 23) was built in 1976, and the rest of the segment (Exits 23 to 29) was built in 1982.

The autoroute was designated Dufferin-Montmorency because it extends former Avenue Dufferin (now Avenue Honoré-Mercier) in Quebec City and ends near the Montmorency Falls in Beauport. Lord Dufferin was a Governor General of Canada and had significant ties to Quebec City.

It became necessary to revamp the concrete on the Dufferin-Montmorency highway because it was aging and needed general maintenance. This project was part of the general plan to refurbish the highway system in Quebec.

MAPEI products at work on the jobsite

In Quebec, Le ministère des Transports du Québec (MTQ) recently added some pre-qualified products to its list of acceptable repair products that could be specified for infrastructure repair work. (The specification was based on the U.S. Federal Standard 595C.) **Mapelastic** was added in the generic type division. In 2013, MTQ separated this generic division into Type I and Type II because there were two products that were outstanding due to their specifications.

The MTQ decided to use the Type II product on highway repairs that were very large. **Mapelastic** was one of the products placed in the Type II category. **Mapelastic** will be one of MTQ's regular maintenance products for the future. When working on highways where there is a lot of calcium and carbonate, MTQ feels that this type of membrane (**Mapelastic**) will protect better than what was used in the past.

Several challenges accompanied this project:

- How to find the right color to match the existing concrete
- How to find the proper developer and manufacturer of innovative products for the concrete color specification
- How to apply the product

A final decision was made to use **Mapelastic Silver**, which was customized to a green color on the jobsite. With the help of the Technical Services teams from Italy, Deerfield Beach (United States) and Laval (Canada), and with strong support from Interstar Materials Inc., the contractor was able to use ready-mixed colors. Sample tiles 3" x 3" (7,6 x 7,6 cm) in size were made from real concrete to show the wide array of colors that could be obtained using Interstar ready-mix pigments. The support team from MAPEI Group in Italy insisted on testing and doing many trials to get the exact color needed for the repair.

A small bag of Interstar pigment was mixed with each bag of **Mapelastic Silver** at the jobsite to get the exact green color that was desired. This color was developed in a controlled environment and with innovative technology to produce free-flowing pigments that disperse easily in concrete. The pigments quickly developed full tinting strength, providing a cost-effective solution for the project's concrete coloring needs.

The customized **Mapelastic Green** was sprayed instead of using a roller. The spray system increased efficiency, reduced waste and improved safety.

The entire project was completed perfectly, and everyone was satisfied with the achieved result – 245,000 sq. ft. (22 761 m²) of waterproofing on the Dufferin-Montmorency highway in Quebec.

