

Toronto Transit Commission (TTC) Union Station subway platforms – Toronto, ON, Canada

Project overview

MAPEI products for substrate preparation, tile setting and grouting were used to renovate the existing subway platform at TTC Union Station, and to provide the finished surfaces at a new additional platform. This project required some of MAPEI's fast-setting options that met TTC's stringent product specification requirements.



Project information

Project category:	Public Building – Subway station
Period of construction:	2014-2015
Years of MAPEI involvement:	2014-2015
MAPEI coordinator:	Gaspare Clemenzi
Project owner:	Toronto Transit Commission
MAPEI distributor:	Prosol Distribution Inc. (Durox)
Architect:	IBI Group Inc./Stevens Group Architects Inc.
General contractor:	EllisDon Corporation
Surface-preparation contractor:	MAPLE Group
Tile and stone installer:	MAPLE Group
Project manager:	Shawn Finn – MAPLE Group
Photographer:	Gaspare Clemenzi
Project size:	70,000 square feet (6 503 m ²)

MAPEI products used

- Mapecem® Quickpatch
- Mapecem 202
- Planibond® EBA
- 4 to 1™ Mud Bed Mix
- Mapeguard™ 2
- MAPEI SM Primer™
- Mapelastic® 315
- Planicrete® AC
- Planitop® Basecoat
- Ultraflex™ 2
- Kerabond/Keralastic™ System
- Granirapid® System
- Keracolor® S
- Keracolor U
- Ultracolor® Plus
- Kerapoxy®



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MAPEI systems used to renovate tile at TTC Union Station

An important part of Toronto's transportation system is the Toronto Transportation Commission (TTC) subway terminal at Union Station. Approximately 20 million TTC passengers a year move through Union Station.

According to Wikipedia: "In 2003, planning began on a station expansion to address overcrowding in the station. Despite being one of the busiest stations in the system, the station had only one narrow island platform serving both the University and Yonge lines, and a small concourse area. The resulting plan was to build a new subway platform on the south side of the tracks to serve the Yonge line, leaving the existing island platform to serve only the University line. This new platform would feature a level connection to the streetcar platform. The project also included significantly expanding the concourse level and replacing all finishes."

IBI Group Inc. led the \$230 million (CAD) modernization and upgrading of the TTC Union Station subway. A critical challenge during construction was to stage the construction in such a way to minimize disruption to the day-to-day subway operations.

MAPEI products on the jobsite

MAPLE Group used MAPEI products extensively in the renovation of the existing platform. Before MAPLE's work began, general contractor EllisDon Corporation had a demolition contractor demolish and remove existing terrazzo on the north side platform. This work left an uneven floor surface.

The MAPLE crews applied MAPEI's **4 to 1 Mud Bed Mix** screed mixed with **Planicrete AC** admixture to level up the substrate before installing the new floor tiles. **Ultraflex 2** mortar was used as a bonding agent for the screed. The installers troweled out 1/4" (6 mm) of **Ultraflex 2** on the existing screed and then rolled **4 to 1 Mud Bed Mix** with **Planicrete AC** into it. The same surface preparation was completed on the new platform on the south side of the tracks – there was no terrazzo to be removed, though.

Near the platform gates, **Mapecem 202** mortar was employed in critical areas where there was trench work around conduits. The work needed to be done quickly and required a screed with a higher compressive strength than **4 to 1 Mud Bed Mix**. **Planibond EBA** bonding agent was used in the trenches with **Mapecem 202** to cover pipes to ensure that everything was solid. In the areas where the trench work was done, the MAPLE crew applied **Mapelastix 315** membrane as a protective coating to make sure that there were no issues.

Mapecem Quickpatch was used as a utility patch for minor patching and skimcoating the screed so that TTC could allow foot traffic right away. **Mapeguard 2** crack-isolation membrane was applied in certain areas over the screed. The areas were first primed with **MAPEI SM Primer**, and then **Mapeguard 2** was applied over the primer.

After the surface preparation was complete, MAPLE used the **Kerabond/Keralastic** mortar system for setting the new 24" x 24" (61 x 61 cm) large-format Urbanite concrete tiles from Florida Tile on the floors of the renovated and new platforms. **Kerabond/Keralastic** was also used to set the 12" x 24" (30 x 61 cm) Taxos Extra wall tiles from Fiandre. **Planitop Basecoat** mortar was used for rendering walls before setting tile. For time-critical floor areas where there was a need for speed to reopen to traffic quickly, MAPLE installers used the **Granirapid** mortar system.

The joints of the wall tiles were grouted with **Keracolor U** unsanded grout, while the floor tile joints were grouted with efflorescence-free **Ultracolor Plus**. In certain small areas, **Keracolor S** sanded grout was used on floor tiles; in the janitorial area, **Kerapoxy** grout was used.

The TTC Union Station project was entered in the 2016 Hard Surfaces awards competition that was sponsored by the Terrazzo Tile & Marble Association of Canada (TTMAC). The project, submitted jointly by MAPLE Group and MAPEI, won first place in the Technical Product Application category.



Old Vitrolite tiles

