

Case Study



City of Markham Operations Center Yard Renewal - 2021

**Project:**

City of Markham Operations Centre Yard Renewal

Location:

Markham, Ontario, Canada

Duration:

May 2021 (Four-day production)

Contractor:

D. Crupi & Sons

Client/Owner:

City of Markham

Surface Tech Product:

ACE XP

What We Did

Surface Tech provided comprehensive support for the project, which involved:

Pavement Design and Material Selection:

The renewal plan called for full-depth asphalt removal and replacement using SP19 64-28 Cat D base and a 50mm surface course mix of SP12.5 reinforced with ACE XP Polymer Fibers™. This design was chosen to enhance the pavement's resistance to thermal cracking, load-associated cracking, and rutting, thereby extending the lifespan of the surface.

Production and Installation:

The project involved the production and installation of 2,500 tons of asphalt, including the ACE XP-reinforced surface course. Surface Tech provided dosing services, ensuring precise incorporation of the polymer fibers into the asphalt mix. *The asphalt was produced at the nearby D. Crupi & Sons plant, where the crew had been trained and certified in using the dosing equipment. The crew reported that the ACE XP mix was easy to handle and applied the same as or better non-reinforced mixes.*

Project Scope & Objectives

The City of Markham's Operations Centre Yard, a key facility housing fleet vehicles for Roads, Parks, Fleet, and Fire services, was due for renewal as part of the city's lifecycle replacement plan. The yard's pavement, spanning 20,000 square meters, showed significant surface distress, localized failures, and drainage issues, exacerbated by the heavy and slow-moving vehicles that regularly use the facility.

The city sought a solution that would not only address these issues but also extend the lifespan of the pavement, reducing future maintenance needs and costs. *Given the City of Markham's positive experience with ACE XP Polymer Fibers™ since 2019, the decision to use this advanced asphalt reinforcement technology was straightforward.*

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Challenges Overcome

The project required careful planning to ensure the durability of the pavement while adhering to a tight timeline. The integration of ACE XP Polymer Fibers™ addressed the challenges of thermal and load-induced cracking, common in high-traffic areas like the Operations Centre Yard. The use of this advanced reinforcement technology allowed the project to be completed efficiently within four days, minimizing disruption to the city's operations.



Economic & Environmental Advantages

Economic Advantages:

By enhancing the durability of the pavement, ACE XP reduced the need for frequent maintenance, providing significant cost savings over the lifecycle of the pavement. The technology's ease of integration into existing processes also contributed to cost efficiency, with no need for special handling or equipment.

Environmental Advantages:

The extended lifespan of the ACE XP-reinforced pavement reduces the environmental impact by lowering the frequency of repairs and replacements. This aligns with the City of Markham's commitment to sustainable infrastructure development.

Client Feedback & Results

"The City of Markham is proud to be leveraging materials and technologies that improve the condition of our roadway assets. The integration of ACE XP Polymer Fiber additives has helped strengthen our asphalt pavements and has reduced premature cracking — all with the aim of further prolonging the life of our roadways."

Zoyeb Vahora, B.Eng., PMP,
Supervisor of Road Operations for the City of Markham.

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