



CASE STUDY

Drainage Channel Lining

LOCATION: Penetanguishene, Ontario

PROJECT TYPE: Product Supply & Installation

PRODUCT USED: Concrete Canvas® CCT2™ & CCT3™



PROJECT:

A 330 m (1,082 ft) stormwater drainage channel in a remote area of Penetanguishene, Ontario, required erosion protection to prevent deterioration from hydrological damage. Considering the location and varying water flow conditions, a high-performance solution involving simple logistics and installation was needed.

CHALLENGES:

Remote Location & Accessibility: The site was in a remote, hard-to-reach area, and transporting traditional materials such as concrete or heavy equipment posed difficulties. The challenging terrain added complexity to the installation, increasing time and labor demands.

Variable Water Flow Velocities: The channel experiences varying water flow velocities throughout its length. Standard concrete reinforcement wasn't appropriate for the entire channel since the sections that see higher water flow velocities would be at risk of material uplift, compromising the stability of the channel and resulting in failure.

Project Timeframe & Budget: In addition to technical challenges, the project had to be completed within a tight timeframe, as prolonged work would increase costs and potentially disrupt the environment.



Channel before project completion.



CC installation in progress.



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▼ SOLUTION:

Concrete Canvas® (CC) was chosen for this project for its ease of installation and adaptability, particularly in remote, hard-to-access locations. A total of 1,700 m² (18,298 ft²) of CCT2™ was installed in the lower velocity sections, with 200 m² (2,152 ft²) of CCT3™ was installed in the higher velocity sections of the channel.

- **CCT2™:** In the lower velocity areas, CCT2™ provided effective erosion control without requiring additional reinforcement. Its lightweight design allowed for easy transport and manual installation in tight spaces, simplifying logistics and reducing labor demands.
- **CCT3™:** For the higher velocity sections, CCT3™ was chosen for its increased thickness and durability, essential for preventing uplift from fast-moving water. Its strength ensured stability and long-term protection, even in the most demanding flow conditions.

The rolls were installed in a transverse layout for optimal effectiveness.

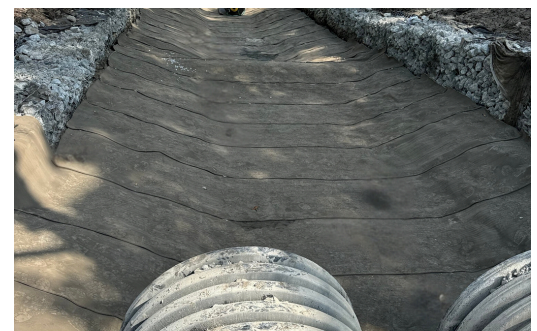
▼ ACHIEVEMENT

Titan supplied and installed Concrete Canvas® (CC). The portable batch rolls were easily transported to the remote site and installed manually. This reduced the need for heavy equipment, cut labor costs, and resulted in speedy project completion. The cost-effectiveness of CC was a key advantage, as it avoided the high costs of traditional concrete delivery. Furthermore, this solution minimized the project's environmental footprint by reducing carbon emissions from transportation and heavy construction machinery while minimizing disruption of the surrounding landscape.

Using CCT2™ in lower velocity areas and CCT3™ in higher velocity sections also responded well to site technical needs, while offering a low-maintenance solution to protect the channel from future hydrological damage.



CC being hydrated.



Channel after project completion.