CONCRETE CANVAS®

CHANNEL LINING

Project Info

- 18 / 09 / 17
- CC8™ Bulk Rolls
- 750m²
- Transverse layers
- Parc Slip opencast mine, Margam, Port Talbot, UK
- PT Civils
- CC8™ was used to line a channel as part of restoration works at a former mine to prevent flooding of nearby communities

Completed section of the channel at the Parc Slip mine in Margam

In September 2017, Concrete Canvas® GCCM* (CC) was used to line an overspill channel on the site of the former Parc Slip opencast mine in Margam, near Port Talbot in Wales.

The installation was part of the Margam Restoration works on the site, and was required to control water levels in the void and to prevent flooding of the nearby communities in Kenfig Hill and Cornelly.

Alternatived considered for the project include concrete slabs, placed stonework and precast concrete channel sections. The advantages of CC over these solutions include reduced labour, reduced preparation work both off and on-site, reduced time on site and installation times, a significant reduction in material usage, which not only reduces costs, but also logistical requirements and is more beneficial to the environment as a result of lower CO2 emissions.

The works were carried out by PT Civils for Celtic Energy, with consultation from Bridgend County Borough Council.

Prior to the installation, the ground was excavated to channel profile. The channel's completed slopes measured 1750mm, with 500mm inverts and a channel profile of 3900mm.

*Geosynthetic Cementitious Composite Mat

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An aerial view of the mine site

The channel site prior to ground works

The channel was constructed to help control water levels in the void

Channel excavation

CC was laid transversely

Overlapped sections were jointed using screws

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CC edges were secured with ground pegs in the anchor trenches

Following installation, the CC was hydrated

The anchor trenches were backfilled following pegging of the material

The completed channel leading towards the void

Bulk rolls of CC8 were then delivered to the site, mounted onto a spreader beam and hung from the excavator. The material was unrolled transversely across the channel's width. The material edges were then fixed in the pre-dug anchor trenches using ground pegs, and overlaps of additional layers were jointed using screws and an auto-fed screw gun. Once the installation was completed along the channel's full length, the CC was hydrated.

A total of 750m² of CC8™ were installed in 17 days by four people in wet, inclement weather. The CC was installed at rates of 70m in 4 hours in bad weather conditions. This project was the first installation using CC for PT Civils, and they were very impressed with the result, speed of install and low logistical footprint of the material compared to the concrete slab alternative.

CC was recognised as an environmentally friendly solution, allowing for safe overtopping of the lake void in the event of storm event, protecting local communities.

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