

Project Info



September 2018



CC8™ Bulk Rolls



1650m²



Transverse layers



Cold Blow,
Pembrokeshire, Wales



Alun Griffiths



CC8™ used to line a series of formalised lateral and crest drainage channels to prevent earthwork failure within the slope



Completed channel

In September 2018, Concrete Canvas® (CC) GCCM* was specified by Network Rail to line a series of crest and lateral drainage channels at Cold Blow near Narbeth in Pembrokeshire, southwest Wales.

The cutting was subjected to water ingress from surface runoff from the adjacent saturated agricultural field. The aim of the project was to formalise the existing drainage channels in order to address the potential for rotational earthwork failure within the slope.

550 linear meters of trapezoidal channel were excavated along the crest of the northern embankment, measuring 500mm deep, with 500mm invert and 45° slopes. The works were carried out by Alun Griffiths for Network Rail.

CC8™ was specified for the project, and delivered to site in bulk rolls. The bulk rolls were deployed using a spreader beam mounted on tracked plant machinery from the other side a fence, on an adjacent field.

The CC8™ was laid transversely across the width of the channel and cut to length to minimise wastage and accommodate any variations in profile. The CC layers were overlapped in the direction of water flow, jointed at the overlaps using stainless steel screws, and fixed within the pre-dug anchor trenches using ground pegs.

*Geosynthetic Cementitious Composite Mat





Proximity of slopes to rail line



Outfall channel leading to headwall following excavation



CC delivered in bulk rolls



Channel following excavation



CC edges fixed within anchor trenches using ground pegs



Hydration



Backfilling the anchor trenches



Corner detailing from main channel to outfall



Completed channel



Completed channel - upstream view



Completed outfall channel section leading to headwall



Rocks placed at channel end to protect slope



Completed crest drainage channel running adjacent to rail line

Following deployment, the CC was hydrated via a tracked bowser, and achieved 80% strength after 24 hours, at which point the edges of the CC material were buried by backfilling the anchor trenches in order to prevent water ingress and provide a neat termination.

CC is typically installed 10x faster than traditional concreting methods, greatly reducing time on site and associated costs. The ability to deploy the material from the adjacent field also meant there was no need for costly line possession, allowing for installation without any disruption to rail services.

A total of 1650m² of CC8™ was installed by the Alun Griffiths team. CC provided a rapidly applied, environmentally friendly solution to providing erosion control and formalisation to the cutting channels.