

Project Info



07 / 10 / 17



CC8™ Bulk Rolls



2,165m²



Transverse layers



A21, Tonbridge to
Pembury Dualling



Balfour Beatty



CC8™ was used to line a drainage channel which collects runoff water from the highway and transports it to a storage pond



The completed installation beside the A21

In October 2017, Concrete Canvas® GCCM* (CC) was used to line a drainage channel on the A21, along the Tonbridge to Pembury Dualling stretch. The aim of the project was to find a lining solution for the channel, which would collect runoff water from the highway and transport it to a storage pond. The channel was 360m long, with a 0.5m wide invert, and 1.5m long side slopes.

A channel lining system made from sections of corrugated HDPE had originally been specified for the project; however, the requirements for the installation meant this solution was not suitable due to the tolerances required in channel preparation needing a lot of additional work. Instead, CC was specified, providing greater flexibility during installation, as well as accommodating varying profile widths in the channel more successfully. The works were carried out by Balfour Beatty for Highways England.

Bulk rolls of CC8™ were delivered to site and mounted onto a spreader beam while ground works were carried out; the existing channel was filled with clay and a ditching bucket was then used to dig the required channel profile. Once the channel had been prepared for installation, the CC was laid transversely across the channel and cut to profile length. Layers of CC were overlapped by 100mm and the material fixed to the substrate in pre-dug anchor trenches using 250mm pegs. Screws were then used to joint the overlaps, and the edges of the CC were grouted to the sandbag headwalls where required to prevent ingress. Once installation was complete, the structure was hydrated.

*Geosynthetic Cementitious Composite Mat





The original channel, prior to ground works



CC was specified as its flexibility could accomodate existing infrastructure



The channel was heavily vegetated, causing blockages and risking flooding



Vegetation and debris removed and the channel excavated for install



The CC was laid transversely across the channel



Screws were used to joint the CC overlaps



Pegs were used to fix the CC to the substrate



The CC was easily cut to accomodate protruding pipes



Following hydration, the CC edges were buried in anchor trenches



CC installed around headwalls



CC ends were sealed with grout around the headwall at the top of the channel



The 360m long channel required 2,165m² of CC8™



The completed installation

2,165m² of CC8™ were installed in 3 days, while the whole works took a total of 7 days due to the added time for preparing and excavating the channel prior to installation. The contractor was pleased with the outcome of the installation, and particularly impressed with the speed of install.

“The Concrete Canvas material can accommodate variations in channel size and could be manipulated to fit around the existing sandbag headwalls, saving additional preparation work and associated costs. I met with the Concrete Canvas Rep to discuss the practicalities of installation, then compiled technical information and prepared a draft method statement to present to Highways England. Concrete Canvas has been used on previous HE projects and they approved the change of specification.”

Sammi Chalaile
Drainage Engineer
Balfour Beatty's Major Projects team