

Project Info



16 / 02 / 17



CC8™ Batched Rolls



20m²



Transverse layers



Tattenhoe, Milton Keynes



Barhale



Provide scour and erosion control beneath an outfall

love every drop
anglianwater

IOS INTEGRATED
OPERATIONAL
SOLUTIONS

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The installation took just 1hr and 15 minutes from delivery to completion

In February 2017, Concrete Canvas® GCCM* (CC) was used to provide scour and erosion control beneath an outfall near a housing development at Tattenhoe, Milton Keynes. An existing headwall had collapsed into the river, due to scour erosion caused by storm flows from an outfall pipe. Heavy rainwater flows eroded the vegetated bank further which caused the final section of pipe to collapse into the ditch. The solution was to regrade the existing slope and install a robust erosion control solution to prevent scour of the reinstated pipe. CC was specified as the ideal choice due to the speed and ease of install on a steep slope. The works were carried out by Barhale as part of Anglian Water's IOS Alliance.

The CC would control the flow of water down the slope, whilst preventing further saturation and potential instability. Given the slope angle and soil conditions, access for heavy lifting equipment was limited and the use of conventional concrete linings would have been very slow or costly to install.

Because of these limitations, Concrete Canvas® was chosen to line the outfall. CC is a cement impregnated geotextile that hardens on hydration to form a durable, fibre reinforced, impermeable concrete layer. CC can be cut to the exact section of any given surface, eliminating waste and accommodating variations in profile.

The installation took place in dry weather, but the ground was very damp and muddy, making working conditions more difficult. Vegetation was removed from the 60° slope with an excavator, then re-graded, with anchor trenches being dug by hand during the installation. The CC was installed in a transverse layup, anchored with 250mm steel pegs at 1m intervals, jointed with stainless screws at 200mm centres and grouted around the existing pipe. The anchor trenches were backfilled by hand with hydration taking place via a pump utilising water from the adjacent stream.

*Geosynthetic Cementitious Composite Mat





Delivery was at 1pm



CC was cut to length and installed in a transverse layup working upstream



All work was carried out by hand



Weather conditions were dry, but the ground was saturated



The CC was jointed with stainless screws at 200mm centres



The CC was grouted around the existing pipe



Hydration took place via a pump linked to a nearby stream



From delivery to completion, the install took just 1 hour and 15 minutes

20m² of CC8™ were installed in 1 hour and 15 minutes by 3 people, from delivery of the batch rolls at 1pm, the installation was complete by 2.15pm including off-load time and other work such as digging anchor trenches, grouting around the existing infrastructure and hydration. The speed and ease of installation made this project a success.

This installation is now being used as part of Anglian Waters' business case for the use of CC, they hope to be able to use Concrete Canvas® for similar applications in future.