

## Project Info



30 / 10 / 17



CC13™ Bulk Rolls



400m<sup>2</sup>



Transverse layers



Threlkeld, Lake District



JBA-Bentley



CC13™ was used to provide a robust layer to a channel linking a dam outfall to a lagoon to prevent water loss.



Completed installation

In October 2017, Concrete Canvas® GCCM\* (CC) was used to provide a robust layer to a channel linking the outfall of a dam to a lagoon in Threlkeld, Lake District.

The aim of the project was to ensure there would be no water loss into the substrate within the channel prior to it reaching the lagoon, particularly in low flow events. There were two sections of the channel which required lining. The upstream section, from the existing dam to a newly constructed r.c. capture structure, and the downstream section from the new capture structure to an existing stilling basin.

The works were carried out by the joint venture partnership of JBA-Bentley on behalf of The Environment Agency. The JBA-B partnership brought together the specialist skills and expertise of the two firms: JN Bentley as a civil engineering contractor, and JBA as a water and environmental consultant and designer.

CC was chosen for the scheme as it provided the robustness and durability required by the design and construct contractor for the project, in consultation with the Environment Agency in their role as End User. CC would also be able to cope with higher flows, particularly in winter conditions, and provided an easier-to-use solution than alternative methods.

\*Geosynthetic Cementitious Composite Mat







*Channel following regrading, profiling and creation of anchor*



*CC was deployed from a spreader beam and digger and laid transversely*



*Ground pegs were used to secure CC edges in anchor trenches*



*Backfilled anchor trench*



*Stainless steel screws were used to joint CC overlaps*



*CC edges sealed using poured concrete instead of anchor trenches*





*Panorama of installation site, with section two installation underway*



*Hydration was given at the end of each day using water from the dam*



*Completed section of installation*





*Section of the completed installation on re-visit*

In preparation for the installation, the flows from the watercourse from the outfall pipe were diverted around the installation site by means of fluming and overpumping, involving significant enabling works prior to installation and regrading of the channel to provide a level and consistent profile. This proved a challenge within a Lakeland watercourse during the winter months, however these challenges were successfully met in providing the works.

CC was delivered to site and deployed from a spreader beam suspended by the excavation plant. The material was then laid transversely across the channel, with subsequent layers overlapped and secured using stainless steel screws and sealant. The edges of the CC material were fixed to the substrate with ground pegs within pre-dug anchor trenches which were then backfilled to prevent ingress. Following each day's work, the CC was hydrated using water deployed from a spray bar.

In total, 400m<sup>2</sup> of CC13™ were installed during the works which met the satisfaction of JBA-Bentley and The Environment Agency alike.