

Project Info

 25 / 07 / 18


 CC13™ Bulk Rolls

 560m²

 Transverse layers

 Halfway Bridge, West Sussex

 Suttle Projects

 CC13™ used to provide scour protection to a culvert under the A272



Completed CC culvert lining installation

In July 2018, three corrugated culverts were lined with Concrete Canvas (CC) GCCM* in West Sussex.

The culverts direct the river Rother under the A272 at Halfway Bridge, and were degrading due to sediment flow. One of the three was becoming increasingly affected, with a large amount of silt build up reducing its capacity.

CC was proven to provide the required protection following the success of the culvert lining works at Cooks Bridge, installed by Suttles for Balfour Beatty Living Places (BBLP) and West Sussex County Council (WSCC) in September 2017. The clients returned to Suttles to request they carry out the works as contractor for this project also.

Each culvert measured around 32m long, with a diameter of 3.23m. In order to carry out the installation, the first culvert was dammed and the river water directed through the other two culverts to allow works to take place.

As the works were carried out during the summer months, the river level was fairly low throughout, so the contractor didn't have to worry about the river flowing over the dams and disrupting works.

*Geosynthetic Cementitious Composite Mat





Thick silt build up in culvert 1



Culvert 2 prior to works



Culvert 3 prior to works



Site access



Devegetation of works area



Silt and substrate removed from beside culvert 3



Grout applied to inverts following damming to prevent waterflow



Existing concrete outside culvert removed to create anchor trench



Installing first layers of CC



Hilti shot-fired nails used to fix CC to culvert



Sealing joints



Hydration



Edge of CC secured to archway and buried with poured concrete



Completed culvert installation

Following damming, silt build up was removed from the culvert inverts by hand, and the corrugations filled with grout. The specified CC13™ material was delivered to the site in bulk rolls, allowing the team to cut the material to required length on site. The CC was installed transversely and fixed to the culvert using Hilti shot-fired nails, while material overlaps were jointed using adhesive sealant for increased impermeability.

Once installation was completed throughout the culvert, the dams were removed and water allowed to flow through it to hydrate the material on the culvert floor. Water was then brushed up the sides of the culvert to hydrate the remaining material. In some cases, the water was hydrated using a hose and the river water.

Installation for each culvert took around 8 days, with 5 days required to grout the inverts, and 3 days for installation, including capturing the edge layers in an anchor trench, backfilling and hydration.

The project was a success, with a total of 560m² of CC13™ installed by a team of four, and completed one week ahead of schedule. The clients and contractor were once again very pleased with the outcome of the project, having used CC on the Cooks Bridge installation the previous year. The use of CC will once again prolong the life of the culvert, without requirement for asset replacement, saving the clients both time and money, due to the difficulties of accessing the site.