

Project Info



04 / 05 / 18



CC5™ and CC8™ Bulk Rolls



1175m²



Transverse layers



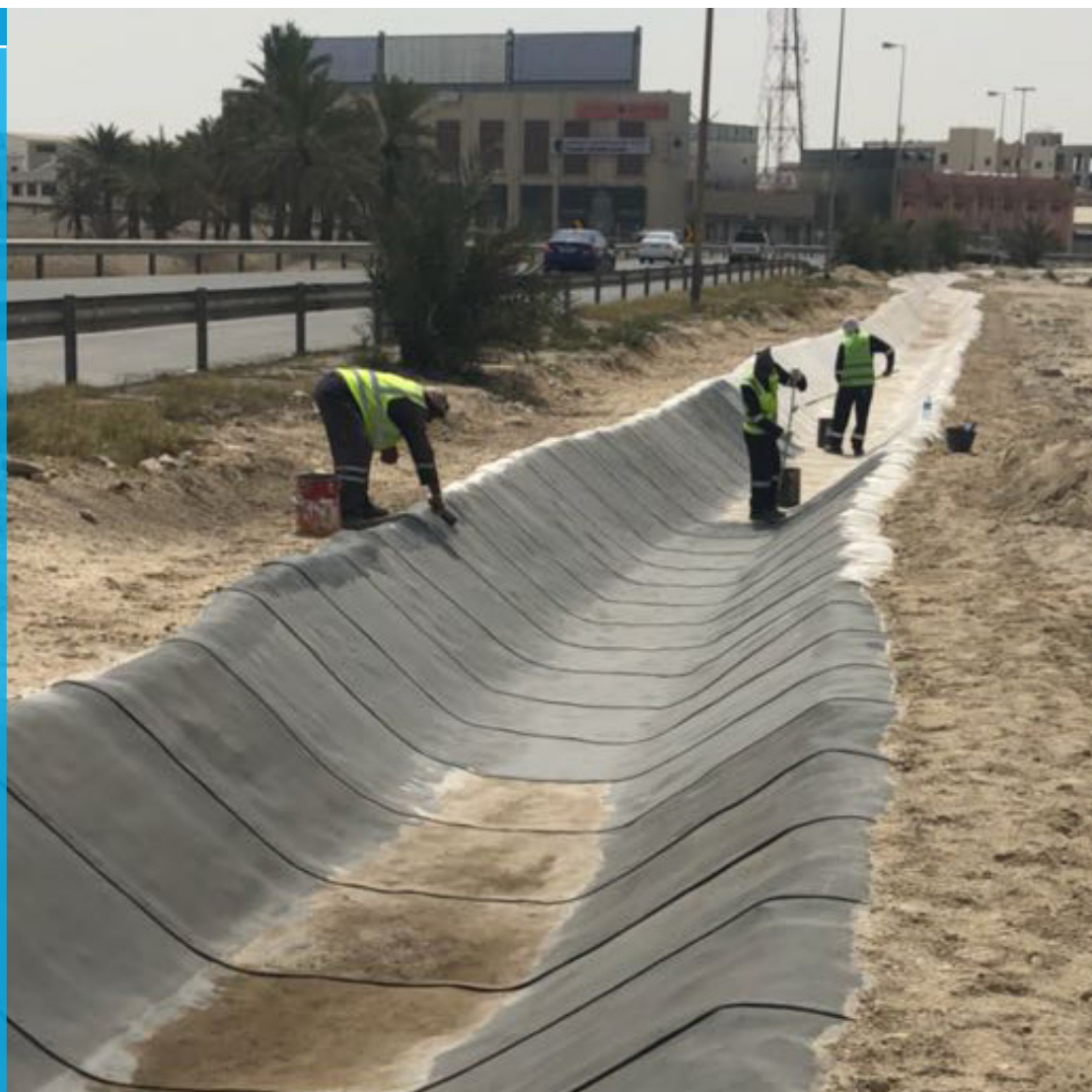
Salmabad, Bahrain



FOQSCO



CC5™ and CC8™ used to line a channel to prevent erosion and undermining of an adjacent road



Completed installation being painted

Concrete Canvas (CC) GCCM* was specified to line a drainage channel which runs adjacent to a road in Salmabad, Bahrain. The purpose of the installation was to provide erosion protection to the channel and prevent undermining of the road.

Conventional methods were considered for the project, however poured concrete was disregarded due to the cost and time that would be required to construct the channel. CC was chosen instead due to its speed and ease of install, subsequent cost savings and durability. CC is also a more environmentally friendly option than conventional methods; the material has a low alkaline reserve and low washout rate, allowing runoff to enter the watercourse without prior treatment.

A combination of CC5™ and CC8™ was specified for the installation. Installation began in early May 2018, and was carried out by FOQSCO for Ministry of Works Bahrain.

Prior to the installation, some minor ground works were required to prepare the channel. All loose rocks and vegetation were removed, and the substrate levelled manually using hand tools. Anchor trenches were then cut into the shoulders of the channel using a JCB Backhoe, before bulk rolls of the CC material were delivered to site. These were suspended from a spreader beam using a boom truck and deployed for batching on site to minimise wastage.

*Geosynthetic Cementitious Composite Mat





Ground preparation - anchor trenches being created on channel shoulders



Excavated and compacted channel profile



CC material laid transversely



Overlaps jointed using stainless steel screws



Channel following hydration



Painting of channel following material setting



Completed installation prior to painting

The material was laid transversely across the channel with 100mm overlaps created between each subsequent layer. The overlaps were jointed using stainless steel screws at 200mm intervals, while CC edges were captured within the anchor trenches using ground pegs. Once laying and fixing of the material was completed, the anchor trenches were backfilled with soil to prevent ingress and provide a neat termination detail. Following installation, the CC was hydrated using a hose connected to a pump and water tank. Hydration was repeated three times at intervals of two hours to ensure sufficient saturation in the hot weather. Once the CC was set, paint was applied.

The installation was carried out over three days, and completed by a team of 7, working 10 hours per day in temperatures in excess of 37°C. The project was deemed a success and the client was happy with the outcome. As a result, they are considering using the product again in future for similar applications across Bahrain, and have said they would recommend CC to anyone who has similar requirements.

If the same project had been carried out using conventional concrete, it would have taken 20+ days to complete. As a result, CC provided a solution which ensured substantial time and cost savings.

"I was very pleased with the product and especially happy with the speed at which it was installed. The installers, FOQSCO, have done an excellent job and were a pleasure to work with. I strongly believe we can use CC in all future ditch lining applications across Bahrain."

Hussain Ali Abdulla AlMeshkhas
Senior Civil Engineer
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