

Project Info



06 / 04 / 17



CC8™ Bulk Rolls



90m²



Transverse layers



Adloun, Sidon, Lebanon



Rousse Contracting
Co. & Litani River
Authority



CC8™ was used to
remediate a concrete
irrigation channel in
Adloun, South Lebanon.



Completed channel section in use

In April 2017, Concrete Canvas® GCCM* (CC) was used to remediate a 45-year-old concrete irrigation channel in Adloun, South Lebanon. The project was carried out as a trial for the client, Litani River Authority, to establish whether CC was a suitable solution for remediation of the full length of the channel.

The channel extends from the general distributor to the Sineeq course to the south of the Sidon with a length of 25km, and was severely damaged. Its condition had deteriorated throughout the years, causing longitudinal cracks which impacted the hydraulic performance of the channel. Due to seasonal water needs, there are only a few months each year when construction work can take place; as a result, speed was of the essence. The use of CC also minimised interruption to the water supply for the residents along the canal, who depend on it for irrigation during the dry season (May to November).

The works were carried out by Rousse Contracting Co. and Litani River Authority (LRA).

To prepare the canal for installation, any vegetation or damaged, crumbling concrete was removed, and cracks and voids were filled. Anchor trenches were then excavated and along the shoulders of the canal and CC was cut to size and brought in portable rolls to the remote access site.

*Geosynthetic Cementitious Composite Mat





Graded canal section following removal of vegetation



Fixing CC into construction joints



Close up of thru bolts at construction joints



Adjacent lengths of CC overlapped by 100mm by sealing and thermal bonding



Compressing using sandbags



Hydrating the material



Completed section of channel post installation and close up of grout mortar termination

As LRA were considering using CC for further remediation works on the channel, they thought of the installation as a training exercise for this, and any future installations. Due to the varying profile of between 6m–8m, a transverse layup was used.

The CC was unrolled across the channel, with the edges placed into the anchor trenches. A lip of 50mm of CC was inserted into the construction joints at both ends of the installation where the material was fixed using thru bolts and epoxy grout at 100mm intervals. Adjacent layers were then thermally bonded at the inner 50mm of the overlap using a hot air gun, and the outer 50mm was sealed using a hybrid sealant. The CC was compressed using sandbags and then hydrated. Due to the high temperatures, a second hydration was undertaken 20 minutes later. The following day, construction joints were filled with grout mortar and painted with PU waterproofing membrane.

90m² of CC8™ were installed in around 4 hours by 3 people, in temperatures of up to 35°C on a site with very limited access. The Litani River Authority were very pleased with the installation and are considering it for further use on similar projects.