

Project Info



21 / 04 / 2014



CC8™ Bulk Roll



33sqm



Vertical layers



Riyadh, Saudi Arabia



Bulivant Arabia



CC8™ trialled as a temporary slope protection and stabilisation method



Completed installation

In April 2014, Concrete Canvas™ GCCM* (CC) was trialled for use in the temporary protection and stabilisation of a vertical wall that was being cut for the construction of a tunnel, to prevent slip. The trial was to see if 8mm CC (CC8™) could successfully replace shotcrete as a stabilisation method.

Installation was carried out by Taffys and Bulivant Arabia for King Faisal Specialist Hospital. The total depth of the dig is 12m, completed in 3m stages with stabilisation needed at the end of each stage. Shotcrete had been used for the previous stage, therefore the bottom of the shotcrete's structural mesh was pulled up to allow the CC to be placed underneath. A bulk roll of CC8™ was delivered to site and dispensed using plant and a spreader beam, before being cut to length using a utility knife then carried to site by hand. The CC8™ was held in place and then pinned using 600mm rebar pins at 300mm spacing along the top edge. The rebar was bent 90 degrees upwards before being fully inserted through the CC to enable it to be tied into the mesh above. The next piece of CC8™ was then positioned so as to create a 100mm overlap between the layers and the process was repeated until all strips of CC8™ were hung. 18m soil nails were installed every 2.5m horizontally before the overlapped joints were sealed with CT1 sealant and screwed at 200mm centres. Mesh was placed over the CC8™ and fixed using 600mm rebar pins every 2m horizontally and 1m vertically. The top of the mesh and the top row of rebar pins were tied into the shotcrete's supporting mesh before the CC8™ was hydrated using a hose with a spray nozzle attached. After setting, a 100mm layer of mortar was applied along the joint between the CC8™ and shotcrete meshes.

33sqm of CC8™ were installed by 4 people (including supervisors) over 2 hours in 35 degrees Celsius and 75% humidity. **According to an on-site engineer who timed the process this was 80% faster than the shotcrete installation.** The site was also difficult to access so batching the CC8™ and transporting it by hand was comparatively much easier.

*Geosynthetic Cementitious Composite Mat





Mesh being sized up pre-installation



CC8™ dispensed and cut to length



Fixed with soil nails



The joints being screwed



Hydration



The set CC8™