

Project Info



01 / 06 / 15



CC8™ Bulk Rolls



250m²



Longitudinal layers



Spence Mine Site,
Antofagasta, 2nd Region,
Chile



Arkad



CC8™ used to collect
water contaminated with
sulphuric acid and direct
it towards holding pits for
treatment



pacifictek.cl



Completed installation

In June 2015, Concrete Canvas® GCCM* (CC) was used as an acid barrier to direct water contaminated with sulphuric acid to holding pits in Antofagasta, II Region, Chile.

Train carriages that have been used to transport sulphuric acid are required to be washed down after every use. The runoff from this process is contaminated with sulphuric acid and is therefore a risk to the environment. As a result, a solution was required to create an acid barrier on the site to protect the substrate and local ecology. Concrete slabs were considered for the project, however these would likely crack due to the vibrations from the trains travelling over them, which in turn would crack the polyurea liner that was specified as the primary barrier measure. Additionally only 3 weeks had been allocated for construction and it would not have been possible to complete a conventional concrete installation within this time.

The site is located at the Spence Copper Cathode Mine site in Antofagasta, which is owned and run by BHP Billiton. The mine is situated 1,700m above sea level in Atacama desert, the driest in the world. Due to the remote location, getting raw materials to site can be expensive. However, a single CC bulk roll is the equivalent to two ready mix trucks.

*Geosynthetic Cementitious Composite Mat

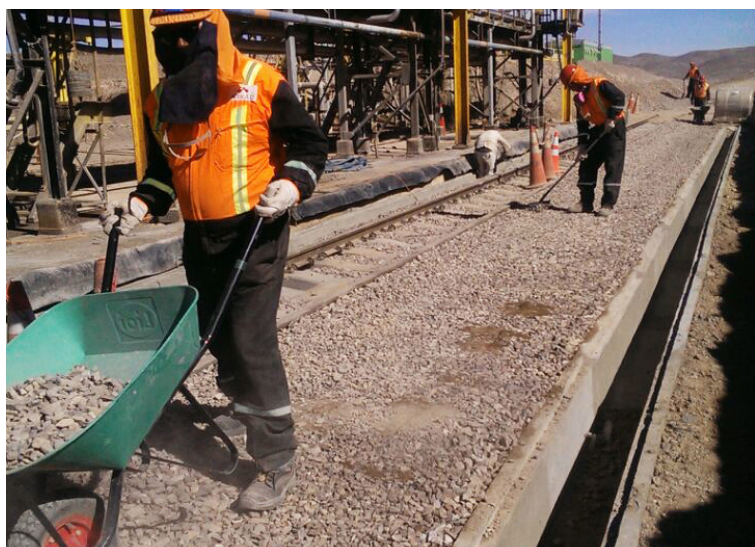




Site as works began



First pre-cast concrete channel installed



Re-grading ballast



Laying CC

To prepare the site, two pre-cast concrete channels were installed either side of the track, and the track ballast was re-graded to direct the contaminated runoff into these channels. A blinding layer was then applied to prevent any sharp or protruding rocks from piercing the material or the polyurea layer.

Bulk rolls of CC8™ were delivered to site, mounted onto a spreader beam and unrolled along the track. Where any joints occurred the material was overlapped by 100mm. The CC under the overlap was then hydrated and a bead of adhesive sealant applied at regular intervals to joint the material. Masonry screws were used to fix the CC to the pre-cast concrete channel and the material was fully hydrated using a hose with spray nozzle attached. Once the CC was set, a layer of polyurea was applied by spraying it onto the material surface.

In total, 250m² of CC were installed in less than 20 hours, with only 3 days needed for the entire installation including applying the polyurea lining, compared to the allocated 3 weeks. The client was extremely pleased with the speed of install and has already specified CC for use on another project.



CC screwed to pre-cast concrete channel



Sealing overlaps



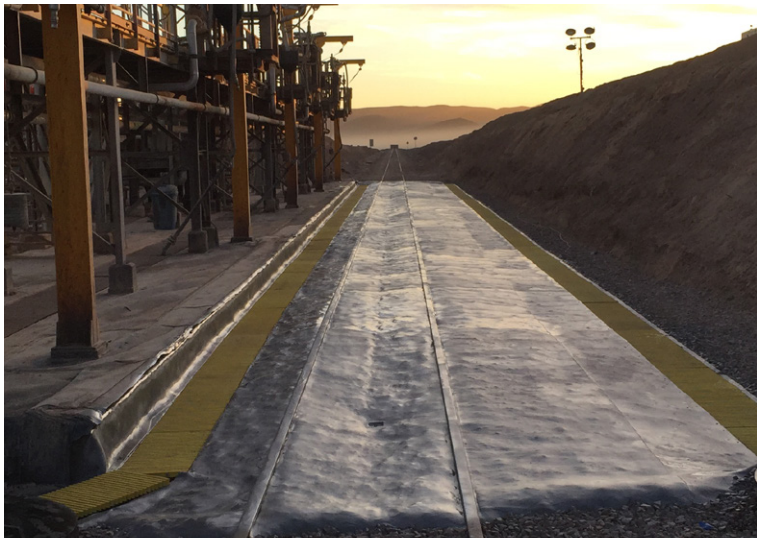
Hydrating CC



Applying polyuria layer



Trackway in use



Finished project