

## Project Info



09 / 06 / 15



CC5™ Bulk Rolls



660m<sup>2</sup>



Transverse and Longitudinal layers



Minas de Aljustrel, Alentejo, Portugal



Tomás de Oliveira, Empreiteiros, SA



CC5™ was used to line a lagoon constructed to collect contaminated water from the nearby mining activity.



tomás de oliveira  
empreiteiros, s.a.



Empresa de Desenvolvimento Mineiro, SA



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Right justified picture caption

In June 2015, Concrete Canvas® GCCM\* (CC) was used to line a lagoon that was constructed to collect contaminated water from a nearby mine. The installation was carried out as a trial to assess the suitability of CC for use on future projects at this site. The mine is located at Minas de Aljustrel, Alentejo, Portugal, and extracts pyrites, sulphides and other ores. Shotcrete was considered for the project, however CC was chosen to provide a faster and easier installation. The works were carried out by Tomás de Oliveira for Empresa de Desenvolvimento Mineiro (EDM).

To prepare the lagoon, any large rocks were removed and the surface was levelled with clay. CC5™ bulk rolls were delivered to site and batched to specific profile length. The corner details were completed first, followed by lining the two longest sides of the lagoon with transverse layers, each layer overlapping the previous by 100mm. The leading edges of these layers were pegged into an anchor trench which had been dug around the perimeter of the lagoon. Two beads of Everbuild Clearfix adhesive sealant were then applied to the overlap before it was screwed at 200mm centres, with the sealant providing improved impermeability of the joint. The bulk rolls of CC were then spooled longitudinally down the length of the lagoon, cut to length, pegged into the anchor trench and jointed. Existing pipework was easily accommodated by cutting pieces of CC to shape. Hydration was achieved with a 5000L water truck and hose combination, after which the anchor trenches were backfilled.

In total, 660m<sup>2</sup> of CC5™ were installed in under 2 days by a team of 5, in high temperatures of up to 30° Celsius, despite the contractor having no prior experience of installing CC.

\*Geosynthetic Cementitious Composite Mat





Site preparation



Batching the CC



Corner detail



Pegging the CC into the anchor trench



Applying Everbuild Clearfix sealant



Completed sections on the longest sides



Longitudinal application



Pipe protrusion detail



Hydration



Completed project

*"The advantages of CC are its great chemical resistance, the execution easiness, the reduced cost and time on site and its great resistance to cracking. I think it is a good alternative to conventional techniques like shotcrete. It will have great advantages for slope protection, ditches, or for water treatment lagoons."*

**Eng.º José Martins**  
Tomás de Oliveira

*"Using CC for the construction of the acid water retention basin was the perfect solution due to its flexibility and fast application, resistance to low pH's, and allowing the removal of the basin's muds without the risks of damaging it."*

**Edgar Carvalho**  
EDM

*"An advantage of CC is the simplicity of the application...there's no need for any special machinery and the finish is very good. It is, for me no doubts, a higher quality product than shotcrete!"*

**Sr. Patrick De Vos**  
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