








**Project Info**

-  **AUG 7** August 2018
-  **CC5™** Batched Rolls
-  **#** 320m<sup>2</sup>
-  Vertical layers
-  Jangsak, Brunei
-  Undisclosed
-  **i** CC5™ used to provide erosion protection on bund slopes surrounding an electrical pylon



Completed installation using CC5™ on bund slopes

In August 2018, a slope protection project was carried out in order to provide a quick and permanent erosion protection solution on a bund embankment surrounding an electrical pylon.

A traditional concreting method was initially specified for the scheme but would have been complicated to install, especially around such sensitive infrastructure. Concrete Canvas® was introduced to the asset owner (the client) as an alternative solution due to its speed and ease of installation. The reduced equipment and plant requirements as well as the cleaner installation method meant the product was specified in place of the traditional method.

The working space on the site was limited, and heavy machinery difficult to deploy. Concrete Canvas® (CC) is available in both bulk and batched rolls, the latter of which allows for easy on-site transportation and can be manually lifted and transported by a team of two.

Prior to installation, the slope was profiled and vegetation removed, before the substrate was levelled and smoothed to prevent voids forming below the material and ensure intimate contact between the CC and substrate. Anchor trenches were then dug by hand at the crest of the slope.

\*Geosynthetic Cementitious Composite Mat





*Compaction of slope following devegetation and grading*



*Creation of anchor trenches*



*Slopes following preparatory works*



*CC layers installed vertically*



*CC edges pinned within anchor trenches using ground pegs*



*CC termination at toe*





Sealant used to joint CC layers following hydration under overlap



Stainless steel screws used to joint overlaps



Hydrating CC



Additional drain at slope side

The CC material was laid vertically, with the leading edge captured within the crest anchor trench and secured using ground pegs before the material length was unrolled down the slope face. Subsequent layers were laid so as to overlap the last by 100mm and jointed using screws and sealant following the hydration of the overlapped section of the lower layer. At the toe of the slope is a concrete slab, on the other side of which is an existing concrete drain. A small anchor trench was created on the inside of the slab in which the CC was buried and sealed using grout to prevent water ingress. An additional, small drain was constructed along the side of the embankment where the CC terminated against an existing corrugated metal boundary fence. This additional drain was designed to lead surface and rain water to the toe drain. Following installation, the CC was hydrated using a portable water tank. Hydration was given twice, with a one-hour interval to ensure sufficient saturation in the high temperatures.

The project was completed in 8 days, 4 weeks earlier than originally scheduled for the traditional solution. The success of this project has led to the client considering the material for a larger project of this nature. The client was satisfied with the performance of the CC material, particularly in terms of time required to complete the project, delivery time, ease of installation and the material's strength.