

Project Info

 27 / 10 / 14

 CC5™ Bulk Rolls

 5,200m²

 Transverse layers

 Mount Vernon
Washington, USA

 Western Refinery
Service (WRS)

 CC5™ was used as a
hard armour capping
for a secondary
containment berm



Completed section of bund

In October 2014, Concrete Canvas® GCCM* (CC) was used to protect and provide erosion prevention at a refinery site in Washington, USA.

Industry safety protocols state that berms must maintain a minimum height in order to provide effective secondary containment. Previously, asphalt had been used to protect the berm, however this incurred high maintenance costs due to re-coating every 5-7 years to repair cracking, as well as patch repair work throughout the year. CC has a 50 year life-span and requires little to no maintenance, promising significant cost savings. Additionally, CC offers hydrocarbon resistance to BS:14414, as well as UV resistance and weed suppression characteristics which suppress growth, reduce maintenance costs, and prevent the fire hazards that vegetation can pose.

The works were carried out by Western Refinery Services.

Bulk rolls of CC5™ were placed at the crest of the berm and unrolled down one side, and then the other. This process was repeated along the berm, with a 100mm overlap created between layers, which was sealed with Sika 1-A sealant, and screwed using 20mm self tapping screws at 300mm intervals. On the inside of the bund, the CC edges were placed into an anchor trench and captured with concrete paving. On the outer edges, masonry bolts were used to fix the CC to the existing concrete infrastructure.

*Geosynthetic Cementitious Composite Mat



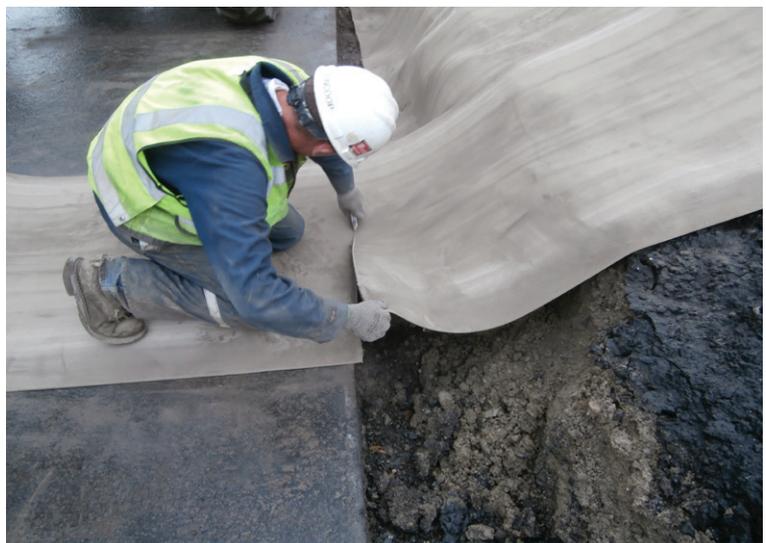
Cracked asphalt



Spooling the CC down the bund



Using sandbags to increase the height of the berm



Cutting the CC to length with a utility knife



Sealing the overlap with Sika 1-A sealant



Hydration from the water mains



Sealing around piping



Piping detail



Piping detail



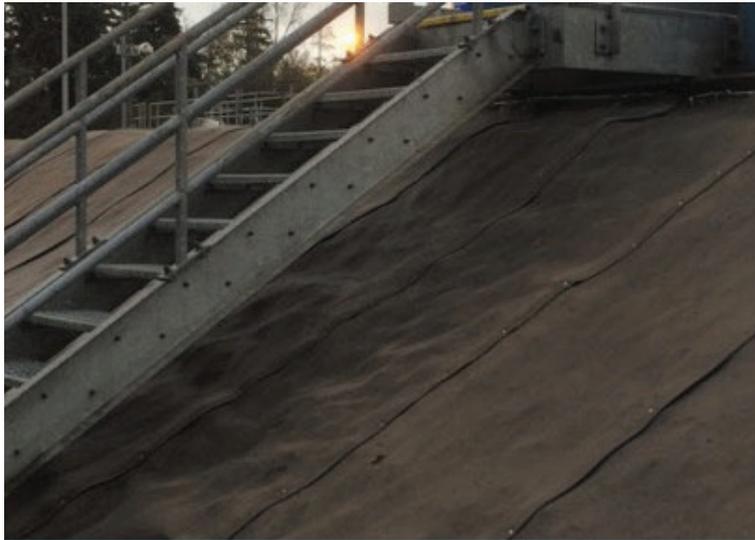
CC accomodating infrastructure



The finished installation



The finished installation



Stair detail



Corner detail

In areas where the bund had eroded to the extent it no longer met the height requirements, sandbags were used to fill any voids before the CC was deployed. Infrastructure such as pipework was easily accommodated due to the flexibility of CC; holes were cut for the pipes, and where needed, an extra layer of CC was fitted around them and sealed. The CC was hydrated using a high volume mounted hose attached to a water hydrant.

5,200m² of CC5™ were installed by a team of 8 in just 7 days. The completion of this project has resulted in drastically reduced maintenance costs, improved impermeability and improved fire resistance of the berm. Infrastructure, corner details and pipe protrusions were simple to accommodate resulting in an easy and rapid install. The client has said they are “very happy” with the outcome of the project and they are looking to install CC on other bunds in their vast oil and gas network.