

Project Info



11 / 08 / 14



CC5™ Bulk Rolls



900m²



Transverse layers



PCK Refinery, Schwedt,
Germany



Undisclosed



CC5™ used to improve
the impermeability of an
extinguishing lake at the
PCK Refinery



Completed installation

In August 2014, Concrete Canvas® GCCM* (CC) was used to line an extinguishing lake to improve impermeability at the PCK Refinery in Schwedt, Germany.

The original poured concrete structure had cracked and spalled, resulting in excessive water loss. Removing the incumbent basin and re-building it using poured concrete and form work was considered, however this would have been more time consuming and taken the basin out of operation for an extended period of time during construction. The works were carried out by an approved contractor, who had no prior experience of installing CC, for PCK. PCK is a joint venture between BP, Rosneft, Shell, Eni and Total.

Prior to installation, the failing concrete was cleaned and mortar applied to any larger cracks to eliminate voids under the CC. An anchor trench was created on the shoulder of the basin into which the CC edges would be secured and later backfilled. This would prevent water ingress beneath the CC and provide a neat termination. Bulk rolls of CC5™ were delivered to site before being mounted onto a spreader beam hung from a Zoom Boom for deployment.

The installation was completed in sections with the two shorter sides completed first. For these sections, the CC was unrolled on the flat, batched to specific profile length and positioned in the basin by hand with alternating perpendicular overlaps created at the corners. This allowed for the CC to be unrolled across the width of the basin for the remaining two sections, starting at each end and progressing towards the middle where a drainage sump is located.

*Geosynthetic Cementitious Composite Mat





State of lake prior to works



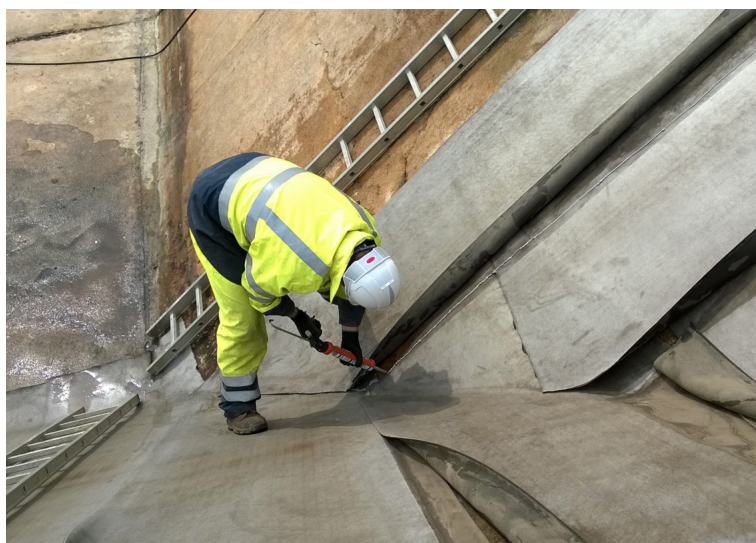
Severe cracking around existing concrete lake



Transporting CC to lake by hand for deployment



Installation of CC around corner



Overlaps folded back for sealing



Overlaps sealed using approved adhesive sealant



Installation of CC across width of extinguishing lake



Hydration



Completed lake installation



CC installed around pipework and steps

Each section of CC was jointed and hydrated using the same procedure: the leading edge of the CC was fixed to the concrete substrate using 40mm wedge anchors at 2m intervals, the subsequent layer was then positioned, overlapping the previous by 100mm. The construction team then hydrated under the overlap and applied an adhesive sealant. Hydration was achieved via an extinguishing hose connected to the main ring system on site.

A total of 900m² of CC5™ were installed by 5 people in 4 days with some inclement weather. A poured concrete solution would have taken at least one month to complete, meaning a time saving of over 75%. Additionally, CC needed far less labour and was more cost effective than a poured concrete solution. The client was very impressed with the result and subsequently specified CC for use in a bund lining trial project as well as planning to line a second extinguishing basin requiring approximately 6000m² of CC material.