

Project Info



18 / 08 / 14



CC8™ Bulk Rolls



550m²



Vertical layers



Crindau, Newport,
Wales, UK



Cyfoeth Naturiol Cymru
(Natural Resources
Wales)



CC8™ used to prevent deep slip and tidal and weathering erosion of a clay core, grassed flood berm on the banks of a tidal estuary on the River Neath in Newport, Wales.



Completed first section of lined berm

In August 2014, Concrete Canvas® GCCM* (CC) was specified by Cyfoeth Naturiol Cymru (Natural Resources Wales, NRW) as a protective liner to a clay and top soil flood defence berm on an estuary bank in Crindau, Newport, in South Wales.

Two sections of embankment were deemed to be at risk of slip and tidal erosion; a 10 linear metre section on the south facing bank and a 20 linear metre section on the western bank of the estuary bend. Any undermining of the flood bank could potentially compromise a nearby industrial estate. In previous years, vegetation mats had been installed as a means of reinforcing the berm, but these had quickly degraded. Prior to installation of the CC, ground preparation was minimal with only light grading of the existing profile and the removal of any prominent vegetation growth. CC8™ was specified to provide erosion protection from weathering, to resist tidal scouring and undermining at high tides, and also to take the load of low level pedestrian trafficking. The CC material was delivered in bulk rolls and dispensed via a spreader beam before being batched on site to specific length to avoid wastage. Layers of CC were laid vertically to the berm face, with adjacent layers overlapped by 100mm and screwed together at 150mm centres. To secure the CC to the slope, 380mm steel pegs were fixed through the overlaps at approximately 3m centres. The ends of the CC layers were anchor trenched at both the toe and the crest of the trapezoidal berm, using backfill from the profile grading. Cuts were made into the unset CC to accommodate a number of service pipes and drain covers. Once laid up and fixed, the entire section was hydrated via a water filled IBC container and petrol pump.

*Geosynthetic Cementitious Composite Mat





Berm prior to vegetation removal and grading



Vegetation removal from bank



Batching lengths of CC from spreader beam suspended bulk roll



Fixing of the CC overlaps with stainless screws at 150mm centres



Backfilling anchor trench at toe of second section berm



Backfilled anchor trench post hydration



Completed first section, showing ground pegs at 3m intervals



Drain pipe cover access through CC



Completed first section showing toe anchor trenching, screw fixings and ground peg placement

In total, over 550m² of CC8™ were installed over a 2-day period by an NRW team of three men and a single plant operator. CC will provide erosion protection, prevent rainfall saturation of the berm and mitigate the chances of slip, greatly increasing the operational life of the flood defence.

“This product was the perfect solution for this problem as it allowed us stabilise the flood bank and give added protection against future high tides, with the added bonus of being quick and easy to install”

Phil Poole
Natural Resources Wales