

## Project Info



06 / 03 / 19



CC8™ Bulk Rolls



3,625m²



Vertical Layers



A38 Stover Country Parks Wetlands, Devon



Highways England, Kier Highways, South West Highways



For two new attenuation ponds to provide containment for highway surface water run-off.



CC8™ fully hydrated

In March 2019, Concrete Canvas® CC8™ GCCM\* was used to reduce the permeability of two new attenuation ponds to store highway surface water run-off. The works were undertaken at the Stover Country Park Wetlands located in the heart of Devon adjacent to the A48 road. Due to the country park being a Site of Significant Scientific Interest (SSSI) Highways England, Kier and South West Highways Ltd (SWH) collaborated to install two new attenuation ponds to treat highway surface water run-off from the A38 that could potentially pollute the wetlands if left unmanaged.

CC8™ has excellent chemical resistance properties which were especially important when considering the presence of petrol, diesel and chemicals being discharged from the A38. The material was chosen to line the two new ponds as part of the award winning new sustainable drainage system (SuDS).

CC8™ is a **Type II** GCCM as defined in **ASTM D8364**, it is suitable for use on soil subgrades and was chosen for this project to suit the abrasion, wear and loading requirements. CC8™ is also **BBA** certified with durability in excess of 120 years when used in erosion control applications.

\*Geosynthetic Cementitious Composite Mat







CC8™ lifted and rolled out by spreader beam



CC8™ cut with disc cutter



Overlaps secured with adhesive and 30mm screws



Edges of CC8™ secured with 250mm pegs



CC8™ Hydrated with a lay flat hose and submersible pump



Pond fully lined with CC8™ and clean stone layer





*Pond installation 3 years later*

Prior to the installation of CC8™, the two ponds were excavated. All large rocks were removed from the bed to prevent damaging the PVC backing and any voids were filled to create a smooth regulated surface. The CC8™ was rapidly installed by suspending the rolls from a spreader beam. Using a 13 tonne long-reach excavator the material was laid directly onto the cut earth and pulled across the pond. Adjacent layers of the CC8™ material were overlapped with an 8mm thick continuous bead of approved sealant applied to every overlap. 30mm long stainless-steel screws were then driven through the bead of sealant along the joint at 200mm spacings. Screwed and sealed joints dramatically reduce the permeability of the joint to minimise the escape of water into the ground.

To prevent any movement or undermining of CC8™ the edges of the material was fixed to the ground by inserting 250mm long galvanised steel pegs securing the material at the top of the ponds' banks.

The CC8™ was hydrated by pumping in water from adjacent ponds using a submersible pump and lay-flat hose. Water was also pumped onto the slopes of the pond. CC8™ is a very versatile product and has the ability to set under-water, which is essential when lining a pond. After the CC8™ had set (24 hours later) the water was drained from the ponds and a drainage layer of clean stone and top soil were placed over the material. This allowed rooted vegetation such as water lilies and bull-rush to establish in the ponds.

SWH Ltd used their own team of 4 groundworkers to line the two ponds and it took one week to install 3,625m<sup>2</sup> of CC8™.

Over the 3 years since the installation the ponds have been colonised by vegetation and invertebrates, The A38 Stover Country Park Wetland scheme went on to win the [Judge's Special Award](#) at the 2020 Institute of Civil Engineering (South West) awards.