

Concrete Canvas - "Just add water"

Concrete Canvas Ltd, an SME based in South Wales, have developed a revolutionary concrete product that is fast becoming the ditch-lining material of choice for engineers and contractors around the world.

Concrete Canvas (CC) is a flexible, cement-impregnated fabric that hardens when hydrated; forming a thin, durable and water proof concrete layer. Essentially, it is concrete on a roll and allows construction without the need for plant or mixing equipment. Simply position the Canvas and just add water.

CC was originally developed to allow the construction of Concrete Canvas Shelters ; rapidly deployable hardened structures that require only air and water to deploy. The shelters are primarily used in military and humanitarian sectors, but it quickly became apparent that the base material CC could be used as a product in its own right for a wide range of civil infrastructure applications.



Concrete Canvas - simply position and add water

CC consists of a 3D matrix of synthetic fibres, impregnated with a specially formulated, high-early-strength-gain cement mix. The top surface acts as a hydrophilic aid to hydration, and a PVC-coated rear surface provides water impermeability, so the material is immediately water proof – even before the concrete has set.

Although primarily used for water management and erosion control, engineers are just scratching the surface of the potential applications for CC. Since becoming commercially available in 2009, it has quickly gained market acceptance as a cost-effective alternative to conventional mass concrete.

Example project

The drainage renovation works commissioned by Caerphilly County Borough Council in February 2011. The project involved lining 2km of drainage inverts to prevent scouring on a disused coal mine spoil tip. The area is popular with illegal motorcyclists who use the inverts as racing runs. Factoring damage to the inverts from the motorcyclists, the difficult site access and taking into consideration the temperamental Welsh weather, the contractors chose to use 13mm thick CC. Once wetted, the canvas has a working time of approximately two hours. Fundamentally, it was the speed at which the CC could be installed and the associated cost savings that convinced both the Council and the contractors to use CC. Using equipment typically associated with geotextiles, such as spreader beams, it can be installed up to ten

times faster than precast slabs or in-situ concrete, and with typical cost savings of around 60%.

Environmental concerns for the project were easily addressed: CC has a low alkaline reserve, a low washout rate and a low carbon footprint (CC typically replaces up to 150mm of poured concrete, resulting in material savings of 95%). The textured top surface of CC means that the material will naturally 'green' over time with moss growth and blend in with the surrounding environment. However, it will prevent growth of vegetation roots that would require regular clearing and maintenance.

Installation of the 2200 square metres of CC was completed in 6 days at a rate of approximately 400 square metres per day. In this project, the contractors were able to get heavy plant equipment on site and make use of bulk rolls of CC. Smaller man-portable batched rolls are available for sites without plant access.

Following the success of this project and the many others like it, CC is being trialled for a whole host of other applications including bund lining, building cladding, tunnel lining, gabion reinforcement, ground surfacing, retaining walls, flood defences, and as a general replacement for Shotcrete. Users of CC currently include Network Rail, the Environment Agency, UK Coal, National Grid, BAM Nuttall, Balfour Beatty, Morgan Sindall, Costain Group and the Ministry of Defence.

For further information contact **Concrete Canvas** on 0845 680 1908 or info@concretecanvas.co.uk. Alternatively, please visit www.concretecanvas.co.uk.

CONCRETE CANVAS™

Rapid Concrete Infrastructure

Concrete Canvas is a cement impregnated fabric that hardens when hydrated, to form a durable, fibre reinforced concrete layer. Concrete Canvas is used throughout the UK for ditch lining as an alternative to precast slabs, mass concrete or where plant access is limited.

CC is rapidly deployable and allows concrete construction without the need for plant or mixing equipment. Simply unroll the Canvas and...

JUST ADD WATER

Applications include ditch / canal lining, slope protection, erosion protection, bund lining and many more...




For further information, telephone 0845 680 1908 or visit www.concretecanvas.co.uk





MADE IN UK

Rapid

Value engineered

Environmentally friendly

Heavy plant not required

Easy to use

Safe

Low maintenance

Durable

Can be installed in wet conditions

