CONCRETE CANVAS®

CHANNEL LINING

Project Info

- 18 / 10 / 21
- CC8™ Bulk Rolls
- 1,500m²
- Transverse layers
- Charfield, Gloucestershire, UK
- NWR / Onsite
- CC8™ used to provide low maintenance armouring to an old, overgrown drainage channel

Finshed CC installation

In October 2021, Concrete Canvas® GCCM* (CC) was used to line a drainage channel located near Charfield, Gloucestershire. The drainage channel was identified to be in need of improvement via the adverse weather programme within Network Rail.

The original channel was unlined, overgrown and in general poor state and action was required to improve drainage of surface water from nearby arable fields.

An armoured solution was required to prevent vegetation growth and reduce future maintenance costs. A GCCM solution was chosen over conventional concrete methods due to the ease of adaption on site to accommodate changes in profile.

Concrete Canvas® is the original GCCM and the first product to declare conformance to ASTM D8364-Standard Specification for GCCMs. This is the only internationally recognised GCCM specification standard and lists erosion control applications by three classifications, Type I, Type II and Type III. It defines the minimum performance values required for each type based on the use of test methods that are specific to GCCM materials. ASTM D8364 is an important resource for clients, consultants and contractors wishing to ensure the GCCM used on their project is fit for purpose.

CC8™ is a Type II GCCM as defined in ASTM D8364, it is suitable for lining channels with 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

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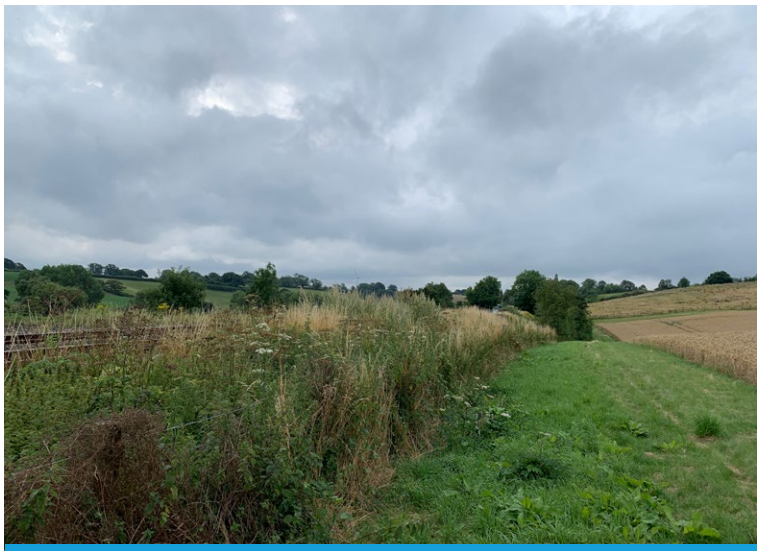
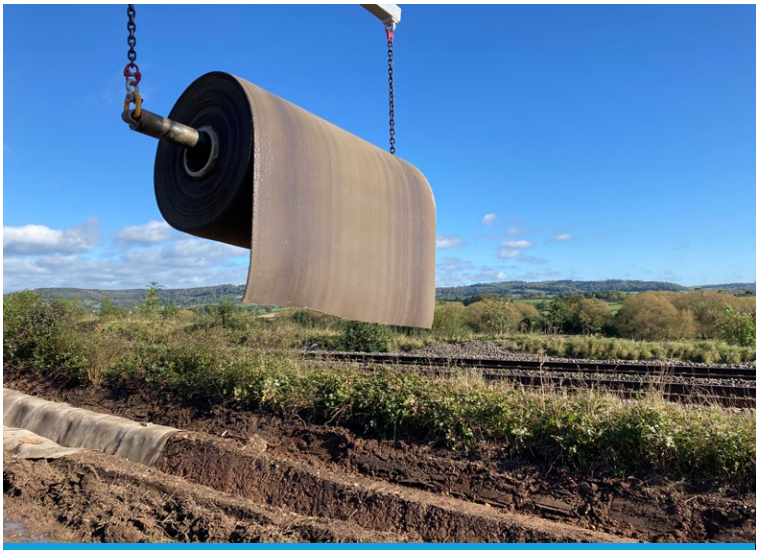


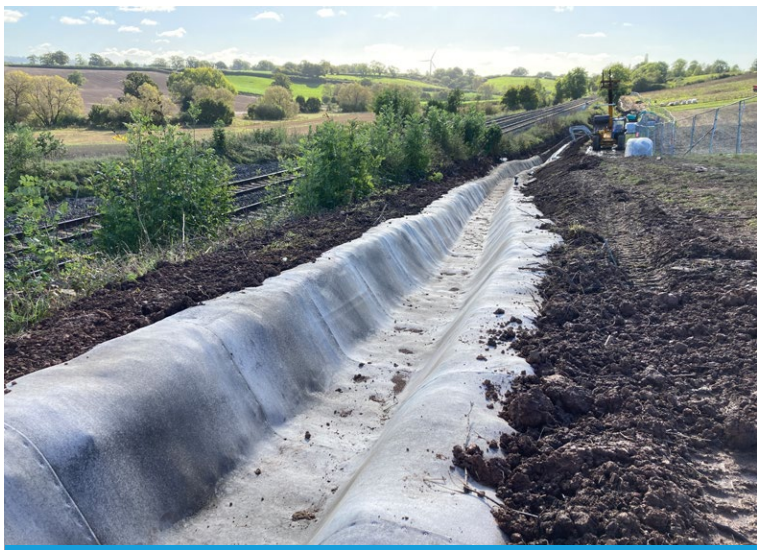
Condition of the site before ground preparation

Ground preparation process begins

Excavation for CC material to be laid



Bulk Rolls dispensed from a spreader beam



Installed and hydrated CC

Purpose built GRP Sump Unit

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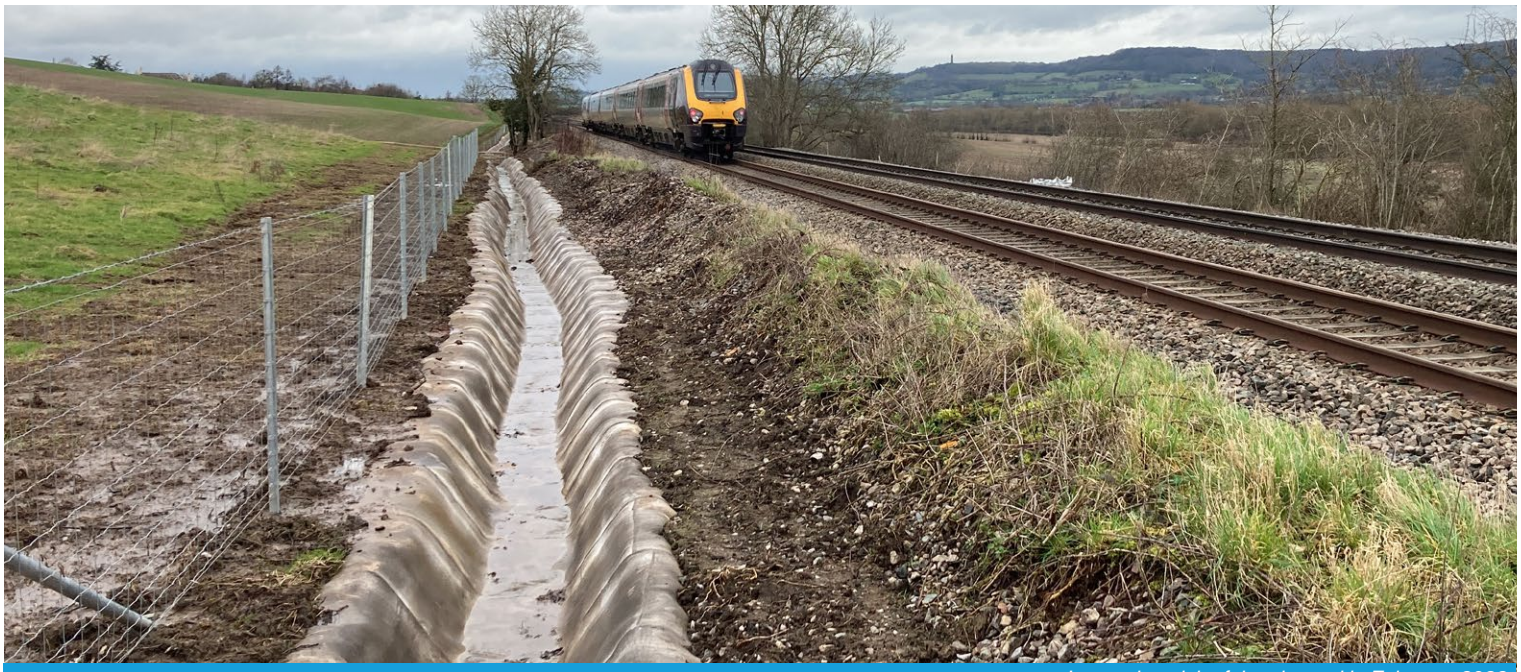
Concrete Canvas CC8™ Bulk Rolls were chosen for this scheme as they are able to be cut on site with minimal wastage. The scheme was delivered by the NWR Works Delivery Off Track team in collaboration with Onsite Rail Services Ltd.

The original ditch was filled in and a new 490 metre long channel was cut using a ditching bucket to create to the correct dimensions prior to the installation of the material. Following the ground preparation, Bulk Rolls of CC8™ material were suspended from plant onsite via a spreader beam and installed in a transverse layout. The perimeter edges secured in anchor trenches that were later backfilled with compacted soil. Each new layer overlapped the previous layer by 100mm, shingled in the direction of water flow. Overlaps were secured together using screws at 200mm centres. The CC was then hydrated using water from the surrounding area.

In total, 1,500m^2 of CC8™ was installed in 12 days while the team of six also worked on additional projects. The installation was deemed a complete success, the contractors were happy with the solution that CC8™ provided for lining the drainage channel.



Inspection visit of the channel in February 2022

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