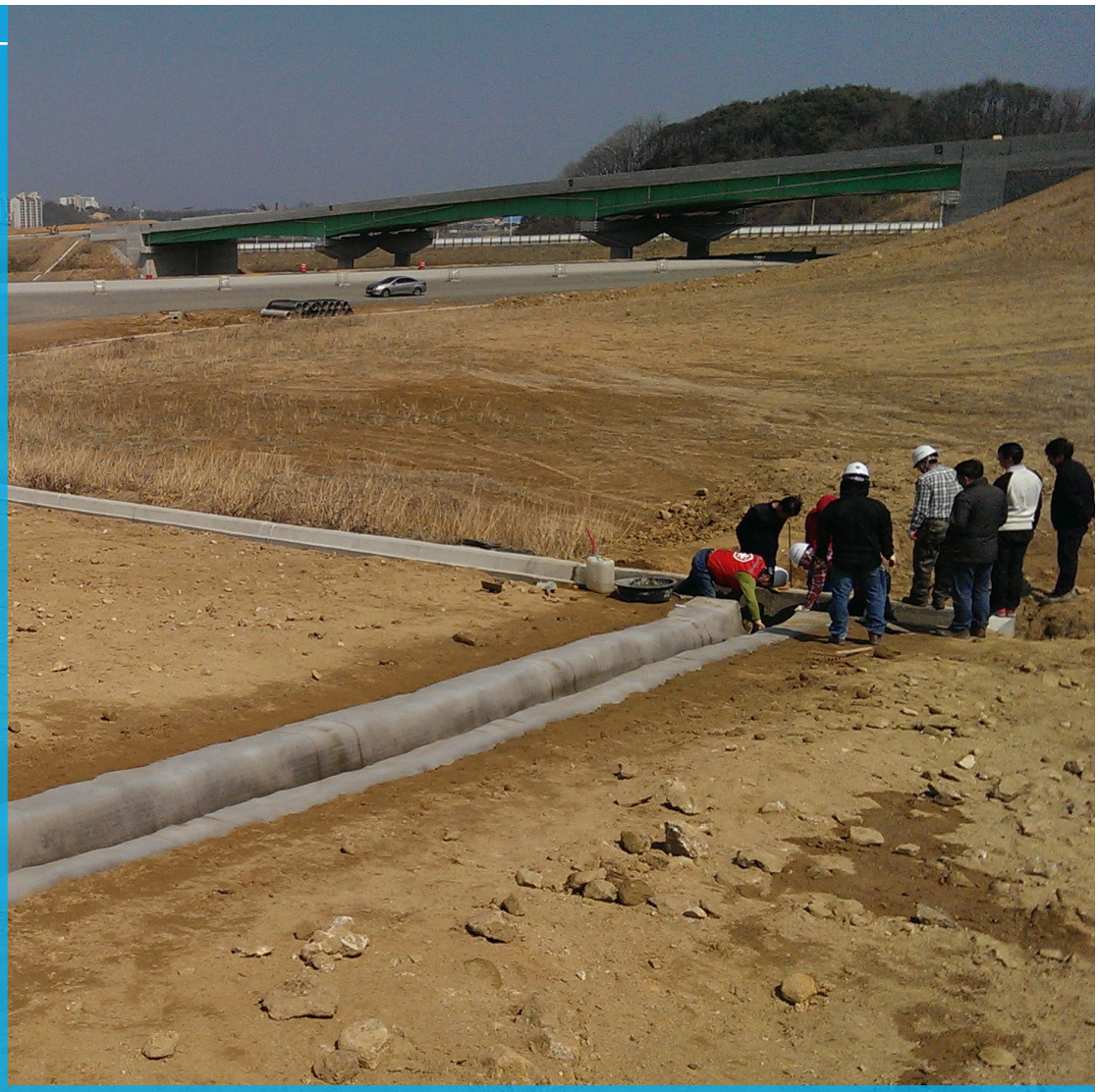
CONCRETE CANVAS®

CHANNEL LINING

Project Info

- 15 / 04 / 15
- CC5™ Bulk Rolls
- 36m²
- Longitudinal layers
- Yangyang Gun, South Korea
- Shin Seung E&C
- CC5™ trialled as a channel lining method for Korea Expressway Coporation



Completion of installation at corner detail

In April 2015, Concrete Canvas® GCCM* (CC) was trialled as a channel lining method next to a highway in Yangyang Gun, South Korea. The trial was conducted to ascertain whether CC would be faster to install compared to the traditional poured concrete solution. The works were carried out by Shin Seung E&C for Korea Expressway Corporation.

The channel has a rectangular profile and measures 18m long, 500mm wide at the base and 350mm deep. A shovel was used to re-grade the profile and any loose or protruding rocks were removed to ensure intimate contact between CC and with the substrate. Two 18m long bulk rolls of CC5™ were delivered to site and a spreader bar was used to unroll the material on either side of the channel. The installation team then positioned the CC into the channel, creating a 100mm overlap between layers. To create an impermeable joint, a double bead of sealant was used in conjunction with screws inserted at 200mm centres. Anchor trenches were cut into either shoulder, with the CC fixed into the anchor trench with ground pegs every 2m. The material was hydrated using a water truck and hose combination before the anchor trenches were backfilled. Burying the edges of the CC5™ in an anchor trench prevents any lateral water ingress under the material while providing a neat termination.

The end of the channel feeds into a pre-existing poured concrete channel. To join the two, the CC was folded back under itself in a knuckle joint and screwed. A concrete mortar was then applied to create a seamless transition between the two channels.

*Geosynthetic Cementitious Composite Mat

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Excavation to profile

Unrolling next to channel

Positioning CC in channel with 100mm overlap

Double bead of sealant

Screwing joints at 200mm intervals

Cutting anchor trench into shoulder

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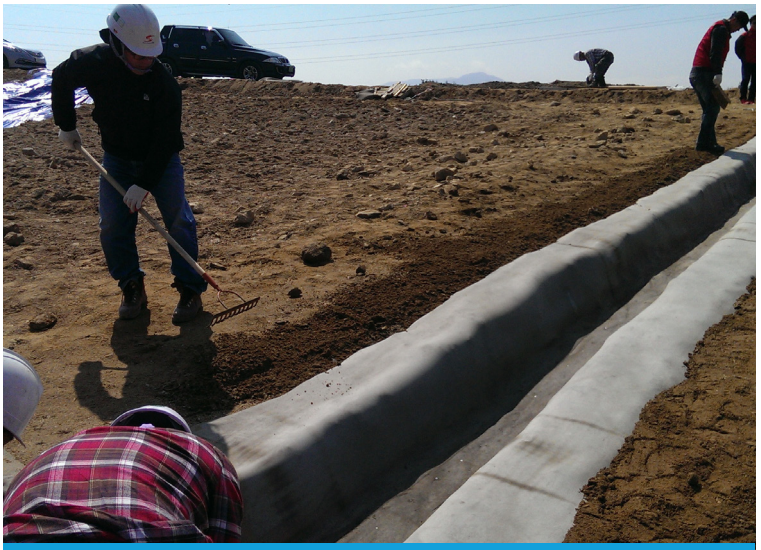
Fixing to substrate with ground pegs

Hydration

Concrete grout used to join CC to existing poured concrete channel



Backfilling the anchor trench

In total, 36m^2 of CC5^{TM} were installed in just 40 minutes by a team of 4, compared to the 5 days it would have taken to complete the same installation with a poured concrete solution. The client was very satisfied with the speed and ease of installation, and is likely to use CC on projects throughout their vast road network.

"We were delighted with the results that CC gave and the project ran very smoothly with no delays or issues. We found the CC easy to install even without prior experience of the material and everything was completed with just hand-held tools. The cost savings achieved due to the reduced manpower and lack of plant and equipment overhead have been substantial for this project, hence we would definitely recommend this product and most certainly be using it again."

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Shin Seung E&C

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