

## Project Info



01 / 02 / 17



CC5™ Batched Rolls



100m²



Transverse layers



Tonnoy, Meurthe-et-Moselle, France



CC5™ was used to remediate a failing section of a concrete canal to prevent leakage and water loss



*The completed canal remediation trial installation in Tonnoy, France*

In February 2017, Concrete Canvas® GCCM\* (CC) was used to remediate a concrete canal in Tonnoy, North-East France. The canal is owned by Voies Navigables de France (VNF), who own and manage 6700km on canals, rivers and waterways across France for leisure and transport activities.

The canal is trapezoidal in shape and was originally constructed using concrete. Several decades ago, the capacity of the canal needed to be raised and another section of concrete was poured at the top of the existing structure. This later addition was very badly installed and has caused a consistent and fairly severe leaking problem as a result. VNF had hundreds of kilometres of canal with the same problem and needed a solution to stop the water loss.

Concrete Canvas' French distributor, Point P TP, proposed the use of CC (known in France as Cimtex) to cover the failing, newer concrete sections of the canal and mechanically fix the CC to the sound, older part of the canal lower down the slope. This installation was treated as a trial for CC to gauge how well the material would perform in this application. CC was deemed the only solution for these works due to the limited site access and the complexity of the issue. The works were carried out by (S.E.E.S) for VNF.

\*Geosynthetic Cementitious Composite Mat







An anchor trench was dug above the failing concrete prior to installation



CC was laid transversely down the failing concrete bank



Clearfix was used to fix the CC material overlaps



Holes were drilled through the CC and concrete before bolts were inserted



Insertion of the expansion bolt through the CC and into the drilled concrete



The bottom edge of the CC was fixed using bolts and a steel clamping strip





*The completed trial installation*

In preparation for the installation, an anchor trench was dug at the crest of the slope and the failing concrete was brushed to clean it. The CC was then delivered to site in batched rolls of CC5™. The CC was unrolled and laid transversally down the bank of the canal, covering the failing concrete section. The leading edges were fixed using pegs into the anchor trench at the crest of the slope and the material was mechanically fixed into the concrete using Clearfix and expansion bolts every 40 to 60cm. The ends of the CC material were then fixed to the original concrete canal bank using a steel clamping strip and further expansion bolts. This method was repeated along the trial section of the canal bank. Once the installation was complete, the CC was hydrated using water from the canal.

A total of 100m<sup>2</sup> of CC5™ were installed in 2 days, following a 1-day site preparation period, by a team of 4 people in cold and inclement weather.

Due to the use of CC's man-portable batched rolls, the restricted site access was not an issue for the installation team, while it made other conventional solutions impossible to work with on this site. The trial installation went very well and VNF were happy about the results and the ease and speed of installation.

The CC is now being evaluated for a whole season and subsequently will be considered to remediate the other leaking sections on this canal as well as on other sections of their national network.