

## Project Info



May 2019



CC8™ and CC13™  
Bulk Rolls



8,240m<sup>2</sup>



Transverse layers



Eagle Gold Mine, Yukon,  
Canada



JDS Energy



CC8™ and CC13™ were  
used to provide erosion  
control and channel lining  
to two spillways

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CASE STUDY  
VIDEO**



Concrete Canvas® installation at Eagle Gold Mine in Canada

In May 2019, Concrete Canvas® (CC) GCCM\* was installed as an erosion control liner for two spillways. The first connects the heap leach pad to an events pond and the second, an emergency spillway for the events pond.

The spillways formed part of the Eagle Gold Mine operated by Victoria Gold, located in northern Yukon, approximately 200km from the Alaskan Border. The local area is subjected to seasonal variance of 20° to -30°C.

Alternatives to Concrete Canvas that were considered included poured concrete with an applied coating. This was discounted due to concerns about the logistical requirements and installation rates.

The spillways were designed to convey any overtopped heap leachate in the case of extreme weather events. The spillway would only likely experience any flow in the case of a 200-year storm event. The site is heavily monitored by the Canadian mining regulator and Ministry of Mining.

The main spillway is approximately 500m in length with profile sections of 5-8m at 7-15%. CC8™ was used for fall sections of 7.5% and CC13™ was used where the fall of the section increased to 15%.

\*Geosynthetic Cementitious Composite Mat







*Eagle Gold Mine site*



*Main spillway*



*Main spillway channel to be lined with CC*

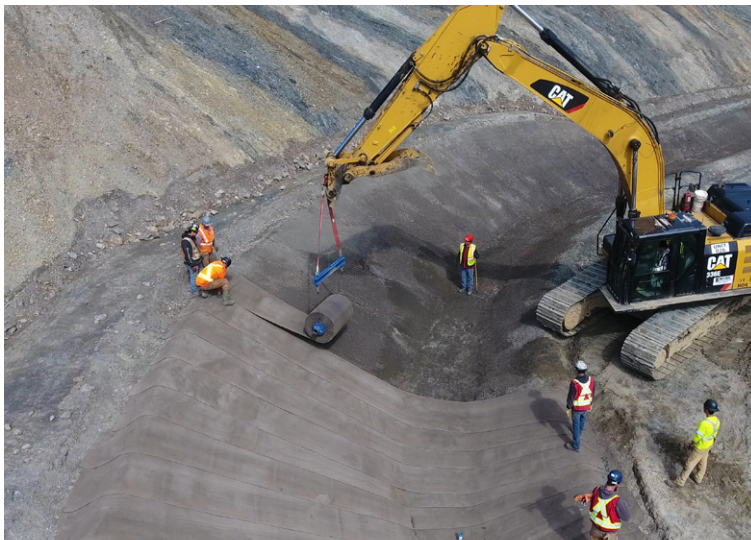


*Emergency spillway channel to be lined with CC*





Bulk rolls of CC13 and CC8 deployed via spreader beam



Installation starting downstream of main spillway.



Hydration of the lined channel



Joints were sealed and screwed for increased impermeability



Upstream section of completed channel



Installation of percussion anchors on emergency spillway section





*Both completed CC spillway channels on the Eagle Gold Mine site*

The emergency spillway is approximately 140m in length of varying width at 50% gradient and lined exclusively with CC13™ as per the specification of the engineering consultant, BGC Engineering.

The main spillway was installed using a standard CC screwed and sealed overlap joint; by hydrating the underlaps and applying an 8mm bead of Soudal 250XF adhesive sealant, then folding the overlap back into position and securing the material together using stainless steel screws at 200mm centres. The CC was secured in an anchor trench at the crest with ground pins before backfilling to prevent perimeter water ingress.

BCG asked Concrete Canvas Ltd to review the hydraulic design of the spillways to advise on whether the CC material required intermediate fixings in order to resist the anticipated hydraulic shear forces. Concrete Canvas input site parameters into their hydraulic calculator. It was determined that the main spillway did not require intermediate fixings, but they were necessary for the emergency spillway due to the shear forces generated along the 50% channel gradient. Rock anchors were installed at 1.8m centres along each overlap joint for the main spillway section. At a 90° corner, anchor centres were no more than 0.5m apart.

The onsite contractor, JDS Energy and Mining Inc installed the material at a rate of 750 – 850m<sup>2</sup> per day in temperatures of 15°C. BCG valued the hydraulic design advice provided by Concrete Canvas Ltd and the client is satisfied that the spillways were installed to meet the program.