

FLOODWATER PROTECTION GEOSYNTHETIC CLAY LINER (GCL) TYP NABENTO® RL-N



Background

In the 'Rotbach' area near Dinslaken a problem arose, which was caused by the local coal-mining and the collapse of an abandoned tunnel. In such an incident the whole area sinks and the stream is able to extend itself into this depression. An embankment would provide a hindrance and in critical situations must provide a barrier; water must not penetrate.

At 'Rotbach' there came a further problem, in that the embankment was to be built from overburden and in addition must be protected from a long-term build-up of water.

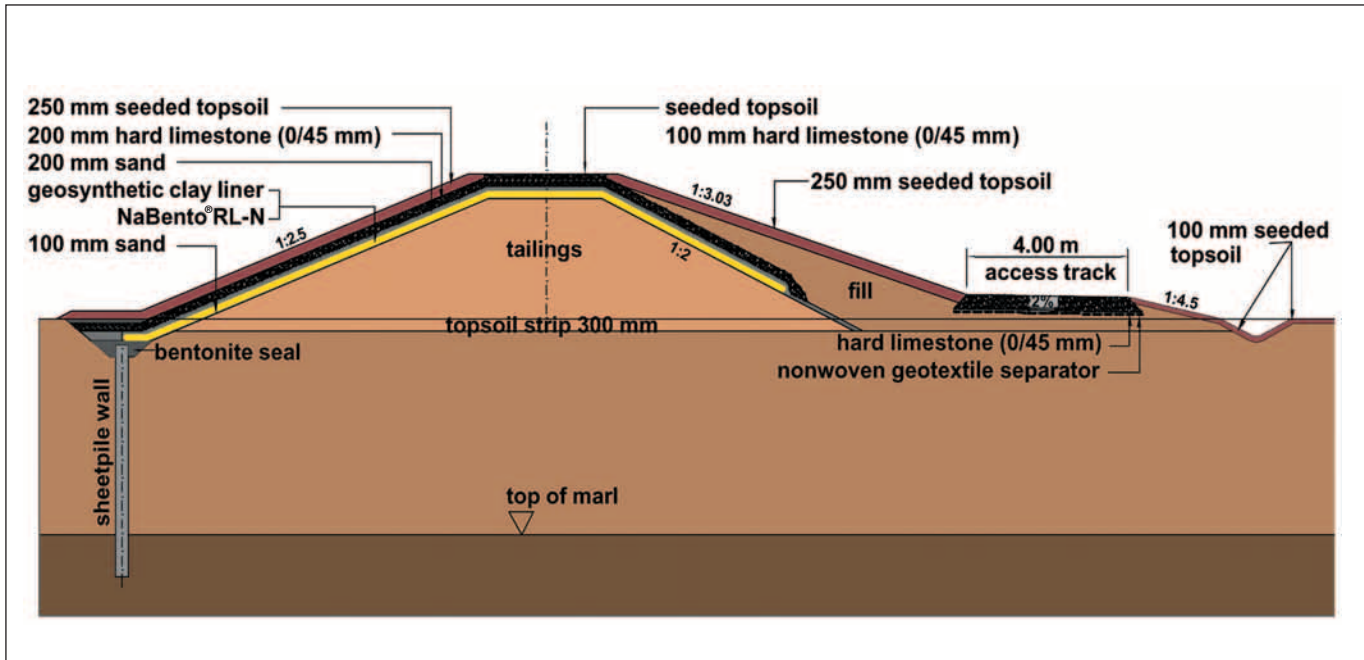
The prepared surface must be flat and remain so; as a result after the profiling work the contractor could no longer traffic the area with labour or machines. Any after-treatment of cracking using clay or bentonite powder in paste form was not possible.

Solution

As a suitable construction measure a geosynthetic clay liner **NaBento® RL-N** was used to encapsulate the tailings material (i.e. coal spoil) and avoid water penetration even during flooding.

The geosynthetic clay liner used covers a 300 mm thick bentonite layer at the edge, avoiding a crack after-treatment.

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The diagram shows the construction of the embankment area at Rotbach. The recognisable yellow GCL, NaBento® RL-N, protects the underlying coal spoil tailings material.



The GCL prevents moistening of the coal spoil even at flood water level and / or long-term water build up.

Crack after-treatment is avoided thanks to the 300 mm bentonite layer at the edge zone.



Location: Rotbach, Dinslaken, Germany

Client: Lippeverband

Period: January – December 2003

Product: **Geosynthetic clay liner (GCL),
NaBento® RL-N**

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