Polyfelt[°]

Enviromat[®] GCL's – Pond Lining at Tanarimba Jandabaik, Bentong, Pahang

Project Data

Project	:	Pond lining for a resort home at Tanarimba Jandabaik, Bentong, Pahang
Year of Construction	:	2013
Material	:	Enviromat [®] 5000

Introduction:

Geosynthetic clay liners (GCL's) are becoming well known and widely used in environmental engineering applications such as landfill liners for solid waste management facilities and pond liners.

Project Description :

A pond was proposed to be built for landscaping purpose of a corporate resort house in Tanarimba Jandabaik. The existing reinforced concrete wall was constructed to create a water retention system. However, due to the permeable soil condition of this hilly area, water can hardly be retained.

Water barrier materials were considered to be used and Enviromat[®] GCL's was selected as the best option for pond lining as it is easy to install. With cost considerations in mind, GCL's are more economical and environmental friendly.

In addition, GCL's can prevent seepage of water into the soil which can weaken the whole geotechnical surroundings.



Enviromat[®] GCL's



Original site condition



After site clearing and trimming to form the required slope gradient

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PROJECT REFERENCE

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Installation:

The problem is that the pond was to be built on an irregular shape site. Enviromat[®] GCL's is a flexible material which makes it possible to lay on non-uniform shaped areas.

The soil foundation and the surface were cleared of any protruding edges and construction debris. Then, the existing soil was trimmed to form a gentle slope gradient for the laying of GCL's. The GCL's were then installed in the running direction of the slope.

The end overlap between the GCL's was 500mm while the edge overlap was 300mm. The overlapped gap was sealed with bentonite paste to fill the open pore space area. Moreover, the overlapped area was checked to be free from folds and any soil particles should be swept away carefully.

A minimum of 300mm single sized aggregates was laid on the GCL's to provide a confining stress so that its hydraulic conductivity function can be attained.

Subsoil drainage blankets with pipes was installed around the pond perimeter to prevent direct flush of surface water into the pond to maintain the cleanliness of the water as well as to maintain the aggregates in place.



Recommended laying direction of GCL's on slopes



Laying of GCL's on slopes of the pond

Conclusion:

GCL's has proven to be an effective water barrier product. It is also cost and time saving compared to the conventional construction method of fully concreting to build the pond.



Before installation of Enviromat® GCL's

After completion

Polyfelt® is a registered trademark of TenCate.

Further details of this application and products can be obtained by contacting your nearest TenCate Technical Support Office.

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