TENCATE Polyfelt®

CASE STUDY

# DRAINAGE BEHIND A CONCRETE WALL

Project : Chebel bridge
Client : Mauritius Road Authority
Consultant : KEC
Contractor : TGVB, Mauritius
Location : Mauritius Island
Date : 2020
Product : TenCate Polyfelt® DC401E

**The new A1-M1 Link Road involve the construction of civil engineering works. At the junction Chebel bridge (Pont Fer) and A1-M1 Link Road, the embankment supporting the road is retained by a L shape concrete wall. To limit the earth pressure coming from the fill onto the concrete wall, an adequate drainage system was installed.**

In order to provide an effective and efficient road network to support the socio-economic development of Mauritius, the Government, through the Road Development Authority, has initiated the construction of A1-M1 Link Road".

The main objectives of the project are to improve fluidity of traffic in order to reduce congestion time and associated costs, to decrease accidents by providing state-of-the-art road safety equipment; and to enhance the level of service to road users through the provision of high quality infrastructure.

The A1-M1 Link Road will be an approximately 1 km long dual carriageway linking Port Louis-St Jean Road (A1) at Chebel.

On a section at the junction Chebel bridge and A1-M1 Link Road, the embankment supporting the road is retained on one side by a L shape concrete wall. In order to evacuate ground and pore water, a drainage systems was required and constructed. The drainage medium transports water along the wall to the drainage pipe, thus preventing direct contact between the wall and water, and permanently protecting the wall against damage.

Generally, two basic systems may be used: conventional gravel drains, and geosynthetic drainage mats (such as TenCate Polyfelt® DC401E).

*Concrete wall - close view*

TENCATE GEOSYNTHETICS

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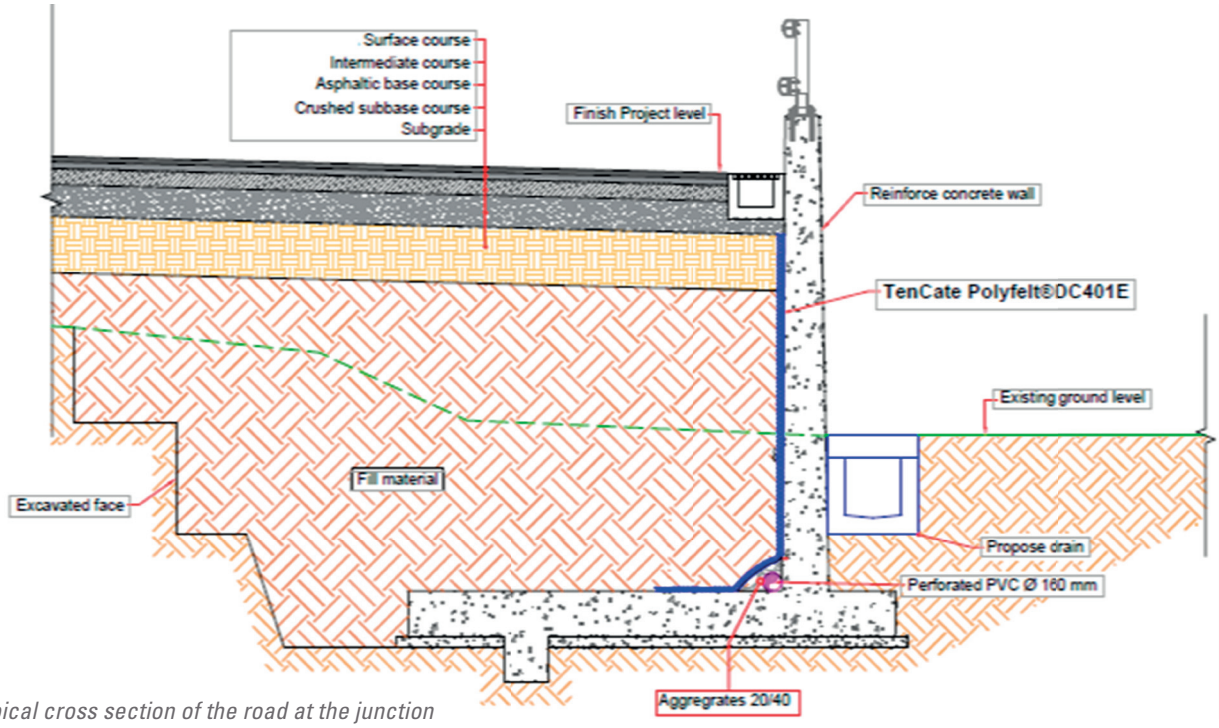
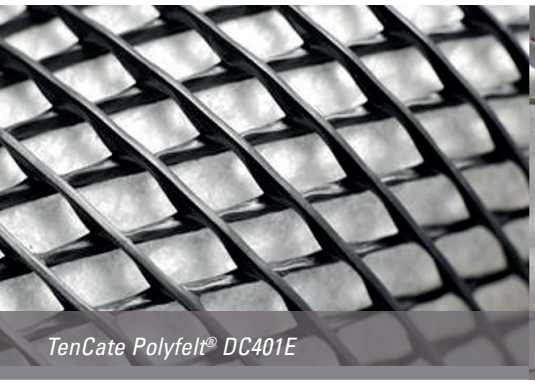



*Typical cross section of the road at the junction Pont Fer and A1-M1 Link Road*

Gravel drains are still widely used, but they have a considerable disadvantage: gravel is costly, as it originates from natural resources, and very often must be transported over a long distance. In this respect, drainage mats offer an effective alternative: offering the same high drainage capacity, they are quicker and easier to install, resulting in economic benefits for both owner and contractor.

TenCate Polyfelt® DC401E is a geocomposite comprising a geonet and a filter geotextile on one side. The geonet is made from high density polyethylene (HDPE) and the filter geotextile from polypropylene (PP). They have a very low compressibility, resulting in high discharge capacity even under high surcharge load. They are used in all kind of surface drainage applications.

Both geonet and filter geotextile offer excellent chemical and biological resistance. Therefore they can be used harmlessly in contact with soil and construction materials such as concrete.



*TenCate Polyfelt® DC401E*

*TenCate Polyfelt® DC401E on the concrete wall*

*Compacted fill, TenCate Polyfelt® DC401E and concrete wall*