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## 5 INSTALLATION OF PROTECTIVE MEMBRANES

### 5.1 GENERAL

#### 5.1.1 Scope

- 1 This Part specifies geotextile fabric systems used for temporary or long term stabilisation of earthworks during construction.
- 2 Related Sections and Parts are as follows:

Section 5      Concrete  
Section 6      Roadworks

#### 5.1.2 References

- 1 The following standards are referred to in this part:  
BS 6906 .....Methods of test for Geotextiles  
ISO 12956 .....Geotextiles and geotextile-related products — Determination of the characteristic opening size

#### 5.1.3 General Requirements

- 1 In areas where the Engineer deems the use of geotextile fabric necessary, the Contractor is to furnish and place geotextile fabric as specified and as directed by the Engineer.

The geotextile fabric furnished by the Contractor is to be of an approved grade suitable for placement over fine sand. The geotextile fabric shall be a woven or non-woven fabric consisting only of long chain polymeric filaments or yarns formed into a stable network such that the filaments or yarns retain their relative position to each other. The fabric is to be stabilised against ultra violet light, inert to commonly uncounted chemicals and chemical properties of the in-situ soil and water, and it should conform to the following minimum requirements:

Weight	135 g/m <sup>2</sup>
Thickness under load (2 kN/m <sup>2</sup> )	0.7 mm
Tensile Strength (200 mm width) ASTM D1682	1.6 kN
Puncture Resilience (DIN 54307)	1.5 kN
Permeability	50 litres/m <sup>2</sup> /s

- 2 The surface to receive the geotextile fabric is to be prepared to a relatively smooth condition free of obtrusions, depressions, and debris. The geotextile fabric should not be laid in a stretched condition. In the event that the width of the proposed area for fabric requires more than one panel width of fabric, the panels are to be overlapped a minimum 15 percent of the panel width. Longitudinal joints in the fabric are to have an overlap of 500 mm. To prevent slippage of the overlapping fabric, the areas of overlap are to be stabilised as approved by the Engineer with pins, anchor blocks, or aggregate piles. In the event that construction machinery is used to place the fabric, the working platform for the machinery should be the soil and not the previously laid fabric.

- 3 Prior to placement of the granular material (stabilising crushed material) the Contractor is to spread a layer of sand over the geotextile fabric as directed by the Engineer. The aggregate material should not be dumped directly on the fabric. Haulage trucks are not to be driven on the fabric. The aggregate is to be spread by a wheeled front-end loader. The blade or bucket is to be kept sufficiently high so that the aggregate is not being pulled over the fabric, but being dropped at a minimum height to the satisfaction of the Engineer.
- 4 Fabric damaged or displaced before or during installation or during placement of overlaying aggregate material is to be replaced or repaired to the satisfaction of the Engineer at the Contractor's expense.
- 5 Where pipes or other elements pass through the geotextile fabric, the openings around such are to be made watertight by methods as approved by the Engineer.

**END OF PART**

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