

## **TENDER SPECIFICATIONS**

### **SPECIFICATION FOR SUPPLY OF WOVEN MULTIFILAMENT POLYESTER GEOTEXTILE**

#### **( FOR REINFORCEMENT, SEPARATION, FILTRATION AND DRAINAGE APPLICATION )**

#### **1.0 GENERAL**

This work comprises supply of Woven multifilament Polyester Geotextile conforming to the material specifications stated herein, as per the bill of quantity and schedule of supplies enclosed.

#### **2.0 MATERIALS**

##### **2.1 General Requirements**

Woven multifilament Polyester Geotextile shall be made of high tenacity polyester yarns in the warp and weft direction. These engineered Geotextiles shall be stabilized to resist degradation due to ultraviolet exposure and shall be resistant to commonly encountered soil chemicals, mildew and insects, and shall be non-biodegradable.

Indigenously manufactured Woven multifilament Polyester Geotextile shall be preferred, considering advantages of shorter delivery period, no inventory pipe-up and not much impact on cost due to fluctuation of exchange rate of foreign currency. Minimum 3.2 to 5.15 meter width of Woven multifilament Polyester Geotextile shall be requiring minimizing the wastage.

A plant visit by the Engineer's representative to verify the manufacturer's quality control procedures and witness testing of products is also required prior to the dispatch of material.

##### **2.2 Transportation & Storage**

All rolls shall have a protective cover with a label or tag specifying name of the product, name of the manufacturer, roll number and roll dimension.

Material shall be protected from sunlight, mud, dirt, debris, any other harmful substances or mechanical damage during transportation.

Rolls shall be stored in a secured area sufficiently elevated above the ground and adequately covered to protect them from the following: site construction damage, precipitation, prolonged exposure to ultraviolet radiation including sunlight, chemicals that are strong acids or strong

bases, flames including welding sparks, high temperatures, and any other environmental conditions that may damage the physical property values of the material.

Any material, which is damaged during transportation, handling or storage and do not meet the minimum requirements of the specifications is liable for rejection by the Engineer.

### **2.3 Quality Control & testing**

The quality management system of the manufacturer shall conform to the requirements of ISO 9001:2015.

Manufacturer Laboratory shall accredited by the National Accreditation Board for Testing Laboratories (NABL) as per ISO/ IEC 17025: 2005 standards and GAI LAP Accreditation by Geosynthetic Institute USA.

Manufacturer shall issue a test report stating minimum average roll values of material properties, at the time of shipment is made.

CE-certification as per 2016 standards (BTTG certification) & NTPEP (REGO)-certification (AASHTO) should be required for supply of material. should be required for supply of material.

Manufacturer shall submit the proof of supply and satisfactory performance for the quantity of 10000 Sqmt at least, for projects in India.

Contractor shall furnish proof of all above and it is mandatory.

### **2.4 Properties of Woven multifilament Polyester Geotextile**

The properties of Woven multifilament Polyester Geotextile shall conform to Table-1 below:

Table-1

Sr. No.	Property	Test Method	Type A (Marv)	Type B (Marv)
<b>Mechanical Properties</b>				
1	Ultimate tensile strength (MD)	ASTM D 4595	100 kN/m	200 kN/m
2	Ultimate tensile strength (CD)	ASTM D 4595	50 kN/m	50 kN/m
3	Elongation at Ultimate tensile strength (MD)	ASTM D 4595	12 %	12 %
4	Elongation at Ultimate tensile strength (CD)	ASTM D 4595	12 %	12 %
5	Partial Factor Creep Rapture at 120 years design life	ASTM D6992 & 5262	1.41	1.41
6	Post construction creep strain (100 years design life) corresponding to serviceability limit state	-	< 1 %	< 1 %
<b>Hydraulic properties</b>				
7	Apparent opening size	ASTM D4751	0.300 mm	0.250 mm
8	Pore size	ASTM D 6767	0.300mm	0.200 mm
9	Water permeability (flow rate)	ASTM D4491	12 l/m <sup>2</sup> /s	10 l/m <sup>2</sup> /s

Minimum Average Roll value

MD-Machine Direction,

CD-Cross Direction

### 3 INSTALLATION

#### 3.1 Site Preparation

The site shall be prepared by clearing, grubbing, and excavation or filling the area to the design grade. This includes removal of topsoil and vegetation.

#### 3.2 Laying of Reinforced Nonwoven Composite

The Woven multifilament Polyester Geotextile shall be laid smooth without wrinkles or folds on the prepared subgrade.

Adjacent rolls shall be overlapped as shown on the drawings. Unless otherwise shown on the drawings or directed by the Engineer, the minimum overlap shall be 300 to 500 mm for subgrade of CBR greater than or equal to 3 and 600 to 1000 mm for CBR between 1 and 3. All roll ends shall be overlapped by 1000 mm.

On curves, Woven multifilament Polyester Geotextile may be folded or cut to conform to the curves. The fold or overlap shall be in the direction of construction and held in place by pins, etc.

Prior to placing subgrade course material the installed Woven multifilament Polyester Geotextile shall be inspected and approved by the Engineer. Any damages shall be repaired by covering the damaged location with a patch, which extends an amount equal to the required overlap beyond the damaged area, as directed by the Engineer.

Movement of construction equipment directly over laid Woven multifilament Polyester Geotextile shall not be permitted.

Sudden breaking and sharp turning of construction equipment shall be avoided over the laid Woven multifilament Polyester Geotextile.

Any ruts occurring during construction shall be filled with additional subgrade material, and compacted to the specified density

#### **4 APPROVED MANUFACTURERS**

##### **4.1 Approved Manufacturers**

- (1) Techfab (India) Industries Ltd.  
712 Embassy Centre,  
Nariman Point, Mumbai – 400021  
Phone: 022 – 2287 6224/6225  
Fax: 022 – 2287 6218

#### **5.0 DELIVERY**

Delivery of Woven multifilament Polyester Geotextile shall be done according to the delivery schedule.

#### **6.0 PAYMENT**

##### **6.1 Method of Measurement**

Woven multifilament Polyester Geotextile will be measured by the Square Meter of material received at the owner's / contractor's store.

##### **6.2 Basis of Payment**

Payment for the supply of Woven multifilament Polyester Geotextile shall be made at the contract unit price per Square Meter, which shall be full compensation for the cost of materials, transportation, duties and taxes.

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