

## **TENDER SPECIFICATIONS**

### **SPECIFICATION FOR SUPPLY OF GLASS FIBRE GRID (ASPHALT INTERLAYER)**

### **( ASPHALT OVERLAY REINFORCEMENT FOR FLEXIBLE PAVEMENT & ASPHALT OVERLAY REINFORCEMENT OVER DISTRESSED RIGID PCC PAVEMENT )**

#### **1.0 GENERAL**

This work comprises supply of “TechGlass” Glass Fibre Grid conforming to the material specifications stated herein, as per the bill of quantity and schedule of supplies enclosed.

This work shall consist of furnishing and placing “TechGlass” Glass Fibre Grid as a full width or strip interlayer over existing pavement prior to placement of an asphalt concrete overlay, in accordance with these specifications.

#### **2.0 MATERIALS**

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

The “TechGlass” Glass Fibre Grid shall be processed in to a grid structure through sophisticated machineries like “weft insertion warp knitted” type (woven glassfibre geogrid or any other type of manufacturing the product will not be acceptable) to maintain virgin fibre quality and the designed mesh size and coated online with a specially formulated polymer modified bitumen emulsion for good compatibility with asphalt overlay.

“TechGlass” Glass Fibre Grid shall meet all the relevant requirements as per the test procedure given in ASTM. The physical parameters shall confirm to the values given in Table 1.

Indigenously manufactured “TechGlass” Glass Fibre Grid 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 2.5/5.0 meter width of “TechGlass” Glass Fibre Grid 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, date of manufacture 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 9001:2008 and In-house Laboratory should have certificate of NABL Accreditation ISO/IEC 17025:2005.

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

CE-certification (BTTG certification) 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 “TechGlass” Glass Fibre Grid**

The properties of “TechGlass” Glass Fibre Grid shall conform to Table-1 below:

Table-1

PROPERTIES		TEST METHOD	UNIT	TECHGLASS		
<b>MECHANICAL PROPERTIES</b>				TYPE-50	TYPE-100	TYPE-100/200
Ultimate Tensile Strength <sup>1</sup>	MD	ASTM D 6637	kN/m	50	100	100
Ultimate Tensile Strength <sup>1</sup>	CD			50	100	200
Elongation at Break	MD		%	Max. 5	Max. 5	Max. 5
Elongation at Break	CD			Max. 5	Max. 5	Max. 5
Glass Filament Pitch		-	mm	25 x 25	12.5 x 12.5	12.5 x 12.5
Melting Point		ASTM D 276	°C	>218	>218	>218
Mass Per Unit Area		ASTM D 5261	gsm	Min. 185	Min. 370	Min. 550
<b>FORM OF SUPPLY</b>						
Roll Width		-	Mtr.	2.5/5	2.5/5	2.5/5
Roll Length		-	Mtr.	50/100	50/100	50/100

Minimum Average Roll value, Minimum Refers to 95 % confidence limit, MD-Machine Direction, CD-Cross Direction

### 3 INSTALLATION

#### 3.1 Site Preparation

Prior to the placing of the “TechGlass” Glass Fibre Grid; Pot-holes shall be repaired properly and all cracks wider than 3 mm shall be filled with suitable crack filler; the pavement surface shall be reasonably clean and dry.

All repair work shall be carried out as per current regulating standards to ensure a uniform level surface.

Existing Rigid pavement shall be leveled by using a fine road miller and or a leveling course shall be applied on it.

Tackcoat shall be applied at the recommended rate stated as per MORTH minimum 0.9-1.1 Kg/Sqmt, which should be sufficient to saturate the fabric and ensure proper bond between existing pavement, “TechGlass” Glass Fibre Grid and the overlay.

#### 3.2 Laying of TechGlass Grid

The “TechGlass” Glass Fibre Grid shall be installed smoothly by manual or mechanical means without wrinkles or folds before the tackcoat has cooled and lost its tackiness on the prepared leveled surface.

Application of a small pressure through a pneumatic roller to ensure proper adhesion between the “TechGlass” Glass Fibre Grid and the leveling course and to keep the “TechGlass” Glass Fibre Grid under tension and free of ripples.

Proper contact and bond should be ensured between “TechGlass” Glass Fibre Grid and the pavement surface.

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 300mm on longitudinal and transverse directions. All laps must be fixed by manual tackcoat.

On curves, the “TechGlass” Glass Fibre Grid 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.

Placement of overlay should closely follow immediately after “TechGlass” Glass Fibre Grid laydown.

Prior to placing overlay the installed “TechGlass” Glass Fibre Grid shall be inspected and approved by the Engineer in Charge. Any damages shall be repaired by covering the damaged location with a TechGlass AIC Geo-Composite patch with additional tackcoat, which extends an amount equal to the required overlap beyond the damaged area, as directed by the Engineer in Charge.

Movement of construction equipment directly over the “TechGlass” Glass Fibre Grid shall not be permitted.

Sudden breaking and sharp turning of construction equipment shall be avoided over the “TechGlass” Glass Fibre Grid.

## **4 APPROVED MANUFACTURERS**

### **4.1 Approved Manufacturers**

- (1) Techfab (India) Industries Ltd.  
712 Embassy Centre,  
Nariman Point, Mumbai – 400 021  
Phone: 022 – 2287 6224/6225  
Fax: 022 – 2287 6218

## **5.0 DELIVERY**

Delivery of “TechGlass” Glass Fibre Grid shall be done according to the delivery schedule.

## **6.0 PAYMENT**

### **6.1 Method of Measurement**

“TechGlass” Glass Fibre Grid 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 “TechGlass” Glass Fibre Grid 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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