

TENDER SPECIFICATION
FOR SUPPLY OF TECHCELL GEOCELL (SUB GRADE STABILIZATION & SLOPE PROTECTION)

1. GENERAL

This work comprises the supply of Three Dimensional Cellular confinement system, Tech Cell Geocell or Equivalent, made of High Density Polyethylene Strips which acts as confinement and reinforcement for improving Subgrade / sub base for the Road Pavement or similar applications.

2. MATERIALS

2.1 GENERAL REQUIREMENTS

The TechCell Geocell should be manufactured from High Density Polyethylene Strips consists of a multiple rhomboidal indentations over the entire strip area on both sides of strip ,*the strip should be joined to each other with the means of two raw of ultra sonic weld to form a Techcell - geocell.* The strips also having holes of maximum 10mm diameter in horizontal rows to make a perforation in cell. Cell perforations area is less than 12% of cell surface area.

The manufacturer of the TechCell Geocell must have their own in house manufacturing facilities to manufacture the HDPE Strips which is to be used for manufacturing TechCell Geocell.

2.2 TRANSPORTATION, STORAGE and HANDLING

The TechCell shall be supplied in the bundle form, all bundles shall have a strapped with strapping strip & labelled or tag specifying name of the product, name of the manufacturer, section number, and lot no. of the techcell.

Techcell bundle 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 temperature, and any other environmental conditions that may damage the physical property values of the Techcell Geocell.

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 AND TESTING

- The quality management system of the manufacturer shall conform to the requirements of ISO 9001:2015.
- Manufacturer should have well equipped testing facility and must provide the list of In-house laboratory equipment.

- Following method should perform In-house laboratory during witness test... ASTM D1505/ ASTM D792, ASTM D1693, ASTM D1603/ASTM D4218, ASTM D5199,ASTM D6693, ASTM D1004, EN ISO 13426:1, METHOD-B.
- For long term test for material properties:-
 - (a) Resistance to oxidation-EN ISO 13438,
 - (b) ESCR-ASTM D1693,
 - (c) OIT-ASTM D5885,
 - (d) Weathering Resistance-EN ISO 12224
 Should be approved by NABL accredited third party laboratory.
- Manufacturer shall issue a test report stating material properties, at the time of shipment made.

2.4 PHYSICAL AND MECHANICAL PROPERTIES OF TECHCELL GEOCELL

The mechanical properties of TechCell Geocell conform the following Table.

Material Properties	STANDARD	UNIT	VALUE
Polymer density	(ASTM D 1505)	g/cm ³	0.935-0.965
Environmental Stress Cracking Resistance	(ASTM D 1693)	Hrs	>5000
Carbon Black Content	(ASTM D 1603)	%	2%
Nominal Sheet Thickness (Post Texturing)	(ASTM D 5199)	mm	1.52
Material	Blend of various Polyethylene and additives		
Texture	Polyethylene strip consists of a multiple rhomboidal indentations over the entire strip area on both sides of strip. The indentation have a surface density of 22 to 32 per cm ²		
Perforations	Polyethylene strip is perforated with horizontal rows of maximum 10mm diameter holes. Cell perforations area is less than 12% of cell surface area.		

TECHCELL DIMENSIONS

CELL/SECTION PROPERTIES		Unit	Type-1	Type-2	Type-3	Type-4	Type-5
Weld spacing (+/- 3%)		mm	330	356	445	660	712
Cell Depth (+/- 3%)		mm	075, 100, 125, 150, 200, 250, 300				
Expanded Cell Dimensions (+/- 3%)	Width	mm	244	259	320	488	508
	Length	mm	210	224	287	436	475
Expanded Cell Area (+/- 3%)		Cm ²	250	289	460	1000	1206

Nominal Expanded Section Dimensions (+/- 3%)	Widt h	m	2.44	2.59	3.20	4.88	5.08
	Lengt h	m	6.10	6.50	8.32	12.63	13.72
Nominal Section Area	Expanded	m ²	14.90	16.82	26.63	61.70	70.00

3. INSTALLATION

3.1 SITE PREPARATION

- a. 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 if any.
- b. Prepare subgrade, remove debris, rock, stone etc.,
- c. Compact the subgrade properly.
- d. Install Geotextile/filter layer as per design.

3.2 LAYING OF GEOCELL

Partially expand the TechCell-Geocell slowly. Tag the Geocell as per line out marked and expands the Geocell. With the help of the Tie, connect the adjoined Geocell properly.

3.3 PLACING SPREADING AND COMPACTING INFILL

Slowly Place the filler materials above Geocell, while taking care that no direct access over empty Geocell. Care must be taken that no vehicular movement is allowing over the empty Geocell during installation.

Spread the filler material over the Geocell and care shall be taken that each every shell will be filling completely.

Compact the infill materials once the all the Geocell are completely filled with the filler materials.

4. APPROVED MANUFACTURE

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

6 DELIVERY

Delivery of Geocell shall be done according to the delivery schedule.

7 PAYMENT

7.1 Method of Measurement

Geocell will be measured by the expanded Square Meter of material received at the customer's / contractor's store.

7.2 Basis of Payment

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

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