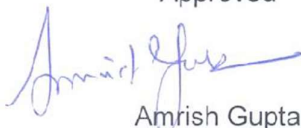

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TECHNICAL SPECIFICATION for supply of Composite blank graphite plates for Proton Exchange Membrane Fuel cells

The due date for receiving the proposals against the EoI is 12th June 2021 (Saturday).

Rev 00	Approved		
	 Amrish Gupta		
	Prepared	Issued	Date
	 Dr Vasu Gollangi		28/05/2021

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Specification for Composite blank graphite plates for PEM Fuel cells

Quantity: 600 – 800 Nos

Sl.#	Description	BHEL specifications
Item Specifications		
1	Application	For use in PEM Fuel Cell as Bipolar plates
2	Graphite plate dimensions	370mm X 250mm X 3mm
3	Glass transition temperature	Shall be more than or equal to 120 Deg. C
4	Tolerances in thickness variations	0.03 mm
5	Maximum Operating temperature	90 Deg. C
6	Supply of sample plate	Vendor is required to send two sample plates of minimum size 370mm X 250mm X 3mm for technical evaluation at free of cost. The sample plate is to be delivered duty paid through courier & it will not be returned back to the vendor.
7	Manufactures Test Certificate	Manufacturer's Test Certificate required and shall be provided along with the dispatch.
8	Warranty	All supplied items to be provided with warranty for 12 months from the date of acceptance.
General Specifications		
Sl.#	Description	BHEL specifications
1	Electrical conductivity (Through Plane)	shall be more than or equal to 60 S/cm
2	Gas permeability	shall be less than or equal to 10^{-3} cm ³ /cm ² .s at H ₂ pressure of 300kpa, and plate thickness 3mm
3	Compressive strength	shall be more than or equal to 40 MPa
4	Specific gravity	shall be more than or equal to 1.80
5	CNC machinability	The plates have to be CNC machining grade at 2000-2500 rpm for a cutter size of 1 mm to 6 mm
6	Binder Resin & Graphite content in composite graphite plate	Resin 11-13 wt% and Total Graphite 87-89 wt% (including carbon black)
7	Thermal conductivity	18- 22 W/mK
8	Replacement of supplied items against mechanical defects	The vendor is responsible for replacement of items which are found to be mechanically defective at their own cost under warranty period
9	Material of the plate	Composite Graphite
	Contact details for any technical information	Dr. Vasu Gollangi BHEL Corporate R & D Division Vikasnagar, Hyderabad – 500093 Email: vasugollangi@bhel.in

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