

Annexure – I

PR No.: 30026492, Dated: 09.09.2017

Item : Bus Bar

Qty. : 4000 Kgs

p	A. PRE-QUALIFICATION CRITERIA	Bidder's Confirmation (Please indicate deviations, if any)
1	The offer shall be quoted only by the original bus bar manufacturers for SPV module. However OEMs can also quote through their authorized channel partners/ dealers / representatives with a valid authorization certificate.	Manufacturing Plant Location: (Complete Address & Contact Details)
2	Vendors should have a minimum of 50,000 (Fifty thousand) Kg per annum production capacity for bus bar.	Annual in-house manufacturing capacity for bus bar:.....Kg Vendors should provide documentary evidence for demonstrating their plant capacity published by the way of published annual reports, licenses, third party certification etc..
3	Vendors should have supplied bus bar of minimum 15000 (Fifteen Thousand) Kgs per annum to reputed SPV Module manufacturers. The reputed module manufacturer should have manufactured module of rating 250 Wp or above and shall be IEC certified in the last three years.	Vendors should provide copies of purchase order/ contracts/ delivery documents, performance certificate etc. from their customers viz., PV module manufacturers for supply of bus bar.
BHEL RESERVES THE RIGHT FOR INDEPENDENT VERIFICATION OF THE CLAIMS MADE FOR CONFORMANCE TO THE PRE-QUALIFICATION CRITERION. BIDDERS TO ENSURE PROVIDING AUTHENTIC CERTIFICATES / DOCUMENTATION AND CREDENTIALS IN ORDER TO QUALIFY FOR BHEL TENDER PROCESS.		
B. TECHNICAL		
1.	Bus bar offered shall comply with BHEL Technical Specification No. PS 901 01 0002, Rev. 01.	Acceptable/Not Acceptable
2.	Certificate of conformance to the specification shall be provided with each lot mentioning BHEL Purchase Order number and quantity supplied.	Acceptable/Not Acceptable
3.	Supplier has to replace defective item found during opening of the package at the time of actual use at BHEL.	Acceptable/Not acceptable



BHEL-EPD

**ELECTROPORCELAINS DIVISION
BENGALURU – 560012, INDIA
Purchase Specification
Group: Photovoltaic Module**

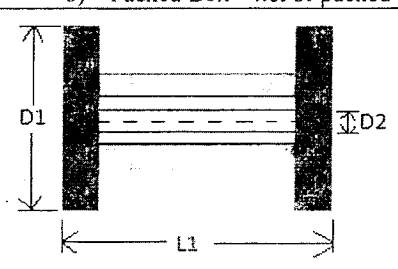
SPEC. NO: PS-901-01-0002

REV. 01

JOB NO.- STD.

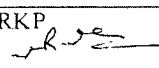
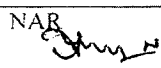
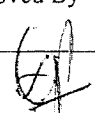
PAGE 01 OF 02

STRING INTERCONNECT

1.0	ITEM	: String Interconnect
2.0	MATERIAL	: Electrolytic tough pitched (ETP) copper as per IS 191-2007
3.0	WIDTH	: 5.0 ± 0.2 mm
4.0	THICKNESS	: 0.3 ± 0.03 mm (Basic copper Thickness)
5.0	COMPOSITION	: Copper purity 99.95% min.
6.0	CONDUCTIVITY (%IACS)	: 101%
7.0	SURFACE FINISH	a) Coating - Coated with 62:36:2 Tin-lead-Silver Solder. - Coating thickness: 16 to 25 microns all around. - Uniform and bright coating, good adhesion all around. b) Mechanical - Natural rounded edges.
8.0	CAMBER	: ≤ 5 mm / meter, uniformity in winding & with good tension.
9.0	FUNCTIONAL REQUIREMENT	Required for interconnecting string in PV module by soldering process.
10.0	PACKING & MARKING	a) To be supplied in spools of max. 16.0 Kg (Net Wt.) including Interconnector wt. 15.0 ± 0.5 Kg per spool. b) Each spool to be sealed in air tight polythene covers. c) To be labelled on the packing consignment: 1) Manufacturers Name 2) Lot No 3) Specification No. - BHEL / PS-901-01-0002 4) String Interconnect (Tin-Lead-Silver 62:36:2) 5) Dimension : $5.0 * 0.3$ mm, Coating: 16 to 25 μ 6) Date of Manufacture 7) No of spools 8) Weight a) Each Spool – on the spool b) Packed Box – net of packed spools.
11.0	TYPICAL SPOOL DIMENSION WITH TYPE- "H"(ALL DIMENSIONS ARE IN mm)	 <ul style="list-style-type: none"> ▪ Dia. $D1 \leq 270$ ▪ Dia. $53 \leq D2 \leq 54$ ▪ $L1 \leq 125$ <p>The construction of spool should be strong enough for loading and operation.</p>

COPY RIGHT AND CONFIDENTIAL

The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in anyway detrimental to the interest of the company.

Revision (01):	Issued By	Prepared By	Checked By	Approved By	Date
2 nd issue	SPV Eng.	RKP 	NAR 	CNP 	29.08.2017



BHEL-EPD

ELECTROPORCELAINS DIVISION
BENGALURU – 560012, INDIA
Purchase Specification
Group: Photovoltaic Module

SPEC. NO: PS-901-01-0002

REV. 01

JOB NO.- STD.

PAGE 02 OF 02

COPY RIGHT AND CONFIDENTIAL

The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in anyway detrimental to the interest of the company.

12.0	PRECAUTION	<p>a) Wound interconnector on spool shall be free from dents, scratches, burrs and loose winding.</p> <p>b) The Design of spools, winding and packing to ensure safe packing & avoid any possibility of handling / transit damages.</p> <p>c) Coating shall be uniform and free from blister / peel-off.</p>
13.0	INSPECTION	<p>1. Vendor to Submit inspection report for each lot / batch of manufacture for the parameters indicated in this specification viz., visual, dimensional and properties.</p> <p>2. BHEL reserves the right for pre-dispatch inspection at vendor works.</p> <p>BHEL at its discretion may waive the pre-dispatch inspection at vendors work based on review of vendor inspection report. However, the vendor responsibility is not absolved till the material is finally inspected and accepted at BHEL. Rejections if any at BHEL, vendor to replace good quality materials confirming with this purchase specification.</p>
14.0	INSPECTION AT BHEL	<p>a) Visual Inspection, Dimensional and properties evaluation.</p> <p>b) Single sampling plan as per IS : 10673-1983, Special inspection level S-4, AQL 1.0</p>

Revision (01):	Issued By	Prepared By	Checked By	Approved By	Date
2 nd issue	SPV Eng.	RKP <i>[Signature]</i>	NAR <i>[Signature]</i>	CNP <i>[Signature]</i>	29.08.2017