



ELECTRIC & PHOTOVOLTAIC DIVISION

BENGALURU – 560012, INDIA

Purchase Specification

Group : Photovoltaic Module

SPEC. NO: PS-901-01-0018

REV. 04

JOB NO.- STD.

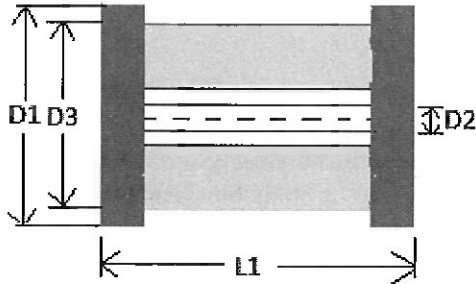
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CELL INTERCONNECT - 5 BB

1.0 TECHNICAL SPECIFICATION:

1.1	Item	Cell Interconnect for 5BB Solar Cell
1.2	Material, Grade	Copper as per IS 191-2007 / EN 13602, Grade - Electrolytic tough pitched (ETP)
1.3	Width	1.0 + 0.02 mm / - 0.06 mm
1.4	Thickness	0.25 ± 0.01 mm (Basic copper Thickness)
1.5	Composition	Copper purity 99.95% min.
1.6	Conductivity (%IACS)	101%
1.7	Elongation	> 25%
1.8	Tensile strength (MPa)	150 ≤ TS ≤ 260
1.9	Yield strength (N/mm ²)	< 70
1.10	Surface finish	a) Coating - Coated with 60:40 Tin-lead Solder. - Coating thickness: 16 to 25 microns all around. - Uniform and bright coating, good adhesion all around. - Coating should be free of spots & blister. b) Edge - Natural rounded edges. c) Edge & Corners should be free of Burrs.
1.11	Camber	≤ 5 mm / meter
1.12	Typical spool dimension with type-“H”(all dimensions are in mm)	 ▪ Dia. $D1 \leq 152$ ▪ Dia. $16 \leq D2 \leq 17$ ▪ $L1 \leq 122$ D3 dimension shall be decided by vendor to meet the weight of spool mentioned in this specification. The construction of spool should be strong enough for loading and operation in automated Tabber and Stringer.

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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.		2.0 WINDING OF INTERCONNECT : 2.1 The winding of interconnect in the spool shall be uniform & have good tension which shall retain till interconnect in a spool is completely used.						
		2.2 There shall not be any slackness, unwinding, overlapping, twisting & gap between the spool flanges & interconnect winding. 3.0 FUNCTIONAL REQUIREMENT : 3.1 Required to be attached to silicon solar cells by automated soldering process in high speed Tabber Stinger. 4.0 PRECAUTION : 4.1 Wound interconnector on spool shall be free from dents, scratches, burrs and loose winding. 4.2 The Design of spools, winding and packing to ensure safe packing & avoid any possibility of handling / transit damages. 4.3 Coating shall be uniform and free from blister / peel-off. 5.0 PACKING CONDITIONS & MARKING : 5.1 Net Cell Interconnect weight should be 5.0 ± 0.5 Kg. per spool. 5.2 The wounded spool shall be covered with anti-rust paper before vacuum packing. 5.3 Each spool to be vacuum sealed in air tight polythene covers and shall be placed in large box having partition / pouches for each of the spools. This shall avoid physical contact of individual spools. 5.4 Maximum three levels of spools shall be stacked in each pallet. 5.5 Orientation of spool shall be clearly indicated on the pallet so as to move the pallet across the direction of flanges and it shall be clearly marked “ DIRECTION OF MOVMENT  ” while mechanical handling. Outer case of the pallet shall be strong wood or multilayer paper carton to withstand mechanical handling. 5.6 Outer box shall be supplied along with wooden pallet firmly fixed to box for lifting & placement.						
		ಕೊಂಪ್ಯುಟರ್: ಬಿಎಲ್‌ಇಎಲ್ ಹೌಸ್, ಸಿರ್‌ಫೋರ್ಡ್, ನವದೆಹಲಿ-110049 ಪಂಜೀಕೃತ ಕಾರ್ಯಾಲಯ: ಬಿಎಲ್‌ಇಎಲ್ ಹೌಸ್, ನವದೆಹಲಿ-110049, REGD.OFFICE : BHEL HOUSE SIRFORT NEW DELHI- 110049						

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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.		5.7 To be labelled on the packing consignment: a) Manufacturers Name b) Lot No c) Specification No. - BHEL / PS-901-01-0018 d) Cell interconnect - 5 BB (Tin-Lead 60:40) e) Dimension : 1.0 * 0.25 mm, Coating: 16 to 25 µ f) Date of Manufacture g) No of spools h) Weight i) Each Spool – on the spool ii) Packed Box – net of packed spools.		
		5.8 Details of the spool as per clause no. 5.7 to furnished for each spool in each lot. 6.0 TESTS CERTIFICATE / REPORTS / COC: 6.1 Each lot must be accompanied with routine Test Certificate, for the parameters described in section 1.0, clause from 1.1 to 1.12. 6.2 Certificate of Compliance (COC) for each point mention under section 2.0, clause from 2.1 to 2.2, section 3.0, clause 3.1, section 4.0, clause from 4.1 to 4.3, section 5.0, clause from 5.1 to 5.8 shall be provided along with each lot. 7.0 INSPECTION CRITERIA : 7.1 Visual Inspection, Dimensional & Properties evaluation 7.2 Single Sampling Plan as per ISO: 2859-1 / IS: 10673-1983, Special Inspection Level S-4, AQL 1.0 7.3 BHEL reserves the right for pre-dispatch inspection at vendor works by BHEL or BHEL nominated agency. 7.4 BHEL at its discretion may waive the pre-dispatch inspection at vendors work based on review of submitted vendor inspection reports. However, the vendor responsibility is not absolved till the material is finally inspected and accepted at BHEL. Rejections if any at BHEL, vendor is liable to replace with good quality materials at vendor cost confirming with this purchase specification. 7.5 Vendor to submit Manufacturing Quality Plan – MQP in BHEL prescribed format for review & approval on receipt of purchase order.		
		ಶೀಠಕ: ಬಿಹೆಲ್‌ಎಲ್ ಹೌಸ್ ಸಿರಿಫೋರ್ಟ್ ನವದೆಹಲಿ-110049 ಪಂಜೀಕೃತ ಕಾರ್ಯಾಲಯ ಬಿಹೆಲ್‌ಹೌಸ್ ನವದೆಹಲಿ-110049, REGD.OFFICE : BHEL HOUSE SIRIFORT, NEW DELHI- 110049		