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

SPEC. NO: PS-901-02-0007

REV. 05 JOB NO.- STD.

PAGE 01 OF 02

BACK SHEET – PET BASED SHEET

1.0 PARAMETERS :

1.1 Item : Laminated composite backsheet for photovoltaic module, The backsheet shall be of three layered structure with Outer layer (air side) of fluoropolymer, Middle layer Polyester (PET) based and Inner layer (cell side) of UV resistant polymer / fluoropolymer.

1.2 Application : As back cover for lamination of PV module along with EVA

2.0 TECHNICAL CHARACTERISTICS :

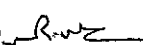
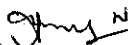
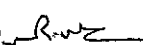
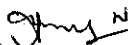
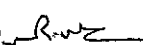
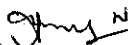
2.1	Width (mm)	985 ± 2
2.2	Total Thickness (μ m)	> 300
2.3	Outer layer (air side) Thickness (μ m)	≥ 25
2.4	Middle layer PET Thickness (μ m)	≥ 250
2.5	Inner layer (cell side) Thickness (μ m)	as per manufacturer's standard
2.6	Colour	White
2.7	Adhesion strength with EVA (N / cm)	> 70
2.8	Interlayer adhesion strength (N / cm)	> 5
2.9	Tensile Strength @ max. load MD (MPa)	> 100
2.10	Tensile Strength @ max. load TD (MPa)	> 100
2.11	Elongation @ Break MD	> 100 %
2.12	Elongation @ Break TD	> 100 %
2.13	Thermal Shrinkage MD	< 1.5 %
2.14	Thermal Shrinkage TD	< 0.5 %
2.15	Partial Discharge (V DC)	≥ 1000
2.16	Moisture Vapor Transmission rate @ 38°C, 90%RH	< 2.0 g / m ² / day
2.17	Dielectric Strength (kV)	≥ 15

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Revision (05):	Issued By	Prepared By	Checked By	Approved By	Date
6 th Issue	SPV Eng.	RKP	NAR	CNP	24.07.18

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	 BHEL-EPD	ELECTROPORCELAINS DIVISION BENGALURU – 560012, INDIA Purchase Specification Group : Photovoltaic Module				SPEC. NO: PS-901-02-0007											
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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.	3.0 PACKING CONDITIONS : 3.1 Backsheet roll shall be packed in aluminium foil / polythene cover to avoid possible air ingress material degradation. 3.2 Roll length : not more than 100 linear metres. 3.3 More than one backsheet joint is not allowed per roll. 3.4 Two metres extra length of backsheet is to be provided if one joint is present in a roll. 3.5 Each and every Backsheet roll shall be packed in individual carton box. 3.6 Individual carton box shall be stacked in a pallet horizontally with adequate end support to the backsheet rolled winding tube to ensure that load is not passed on to backsheet roll. 3.7 Each roll shall have manufacturers label containing i) Manufacturers Name ii) Lot No iii) Specification No. - BHEL / PS-901-02-0007 iv) Date of Manufacture v) Date of Expiry vi) Dimensions (Length, Width, Diameter) vii) Quantity viii) Weight 3.8 Final packing box shall have a label containing BHEL Purchase Order No. and Date. 3.9 Recommended storage condition shall be printed on each carton box and pallet. 3.10 Air side to be identified on the roll with distinctive printed information. 4.0 TESTS CERTIFICATE : 4.1 Each lot must be accompanied with routine Test Certificate, for the parameters described in section 2.0, clause from 2.1 to 2.15. 4.2 Vendor has to provide valid type test report for Dielectric Strength and Moisture vapor transmission from TUV / UL / NABL accredited / International labs certified as per ISO / IEC 17025 valid for five (5) year from the date of issue from lab. 5.0 INSPECTION AT BHEL : 5.1 Visual Inspection, Dimensional & Properties evaluation 5.2 Single Sampling Plan as per IS:10673-1983, Special Inspection Level S-4, AQL 1.0																
	<table border="1"> <tr> <th>Revision (05):</th><th>Issued By</th><th>Prepared By</th><th>Checked By</th><th>Approved By</th><th>Date</th></tr> <tr> <td>6th Issue</td><td>SPV Eng.</td><td>RKP </td><td>NAR </td><td>CNP </td><td>24.07.18</td></tr> </table>						Revision (05):	Issued By	Prepared By	Checked By	Approved By	Date	6 th Issue	SPV Eng.	RKP 	NAR 	CNP 
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