



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

SPEC. NO: PS-901-02-0007

REV. 04

JOB NO.- STD.

PAGE 01 OF 02

**BACK SHEET – PET BASED SHEET**

**1.0 PARAMETERS:**

1.1 Item : Laminated composite backsheets 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 sheet with additional layer of Aluminium also will be considered.

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)	≥ 200
2.5	Inner layer (cell side) Thickness (µ m)	≥ 75
2.6	Colour	White
2.7	Adhesion Strength with EVA (N / cm)	> 40
2.8	Tensile Strength @ max. load MD (MPa)	> 100
2.9	Tensile Strength @ max. load TD (MPa)	> 100
2.10	Elongation @ Break MD	> 100 %
2.11	Elongation @ Break TD	> 90 %
2.12	Thermal Shrinkage MD	< 1.5 %
2.13	Thermal Shrinkage TD	< 0.5 %
2.14	Moisture Vapor Transmission rate @ 38°C, 90%RH	< 2.0 g / m <sup>2</sup> / day
2.15	Dielectric Strength (kV)	≥ 18
2.16	Partial Discharge (V DC)	≥ 1000

**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 (04):	Issued By	Prepared By	Checked By	Approved By	Date
5 <sup>th</sup> Issue	SPV Eng.	RKP	NAR	CNP	30.03.18



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

SPEC. NO: PS-901-02-0007

REV. 04 | JOB NO.- STD.

PAGE 02 OF 02

**BACK SHEET – PET BASED SHEET**

**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 in each 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 printed letters.

**4.0 TESTS:**

- 4.1 Each lot must be accompanied with routine Test Certificate, for the parameters described in section 2.0, clause from 2.1 to 2.16.
- 4.2 Vendor has to provide valid type test report for Dielectric Strength and Thickness of each layers, certified with TUV / UL which shall be 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

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 (04):	Issued By	Prepared By	Checked By	Approved By	Date
5 <sup>th</sup> Issue	SPV Eng.	RKP	NAR	CNP	30.03.18