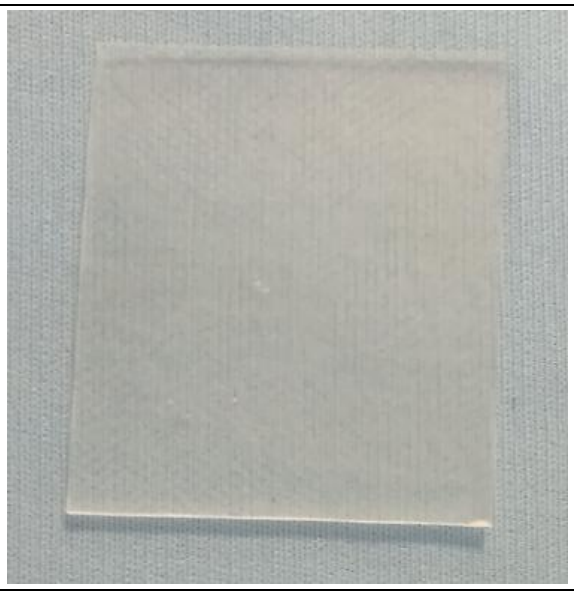
TC-5688

(NABL QR Code)

TÜVRheinland®

Prüfbericht – Produkte
Test Report - Products

Prüfbericht-Nr.: *Test report no.*:	**ULR-TC568826700000162F** **IN26FQLD 001**	**Auftrags-Nr.:** *Order no.*:	147184215	Seite 1 von 7 *Page 1 of 7*
Kunden-Referenz-Nr.: *Client reference no.*:	2738331	**Auftragsdatum** *Order date:*	2026.03.25	
Auftraggeber: *Client*:	**PINKCITY SOLAR FILMS INDIA PVT LTD** Khasra number 225/217, 226/217, Village Khezda Ka Bass (Harsuliya), Tehsil Madhorajpura, Jaipur, 302029 Rjasthan.			
Prüfgegenstand: *Test item*:	Ethylene-Vinyl Acetate (EVA) copolymer and Poly-Olefine (POE) used as encapsulation material in photovoltaic (PV) modules			
Bezeichnung / Typ-Nr.: *Identification / Type no.*:	Pinkcity Solar EPE Sheet			
Auftrags-Inhalt: *Order content*:	Issue of Test Report.			
Prüfgrundlage: *Test specification*:	IEC 60112:2020			
Wareneingangsdatum: *Date of sample receipt*:	2026.03.25			
Prüfmuster-Nr.: *Test sample no:*	A004246013-001			
Prüfzeitraum: *Testing period*:	2026.03.30 to 2026.04.03			
Ort der Prüfung: *Place of testing*:	Electrical Safety Lab			
Prüflaboratorium: *Testing laboratory:*	TUV RHEINLAND (INDIA) PVT LTD. GROUND & FIRST FLOOR, 27/B, 2ND CROSS ROAD, ELECTRONIC CITY PHASE 1, BENGALURU, KARNATAKA, INDIA.			
Prüfergebnis*: *Test result**:	(The test item passed / ~~failed~~ the test specification(s).)			



geprüft / *tested by*:
Somashekar M N

Datum:
Date: *2026.04.20*

genehmigt von:
authorized by: Anmol Ratna Srivastava

Ausstellungsdatum:
Issue date: *2026.04.20*

Stellung / Position: Engineer

Stellung / Position: Laboratory Manager

Sonstiges /
Other:
Discipline : Electrical.
Group : Safety Testing Facility
Decision Rule: The laboratory employs simple acceptance rule in making pass or fail decisions on test results with no guard band.

Zustand des Prüfgegenstandes bei Anlieferung:
Condition of the test item at delivery:
Prüfmuster vollständig und unbeschädigt
Test item complete and undamaged

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht
** Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.* *Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. *The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019*

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
1	**Produktdetails** *Product details*	Solar Encapsulant EPE Film	
2	**Maße / Gewicht** *Dimensions / Weight*	Dimensions > 20mm X 20mm cutted for testing.	
3	**Bedienelemente** *Operating elements*	Not Applicable	
4	**Ausstattung / Zubehör** *Equipment / Accessories*	Not Applicable	
5	**Verwendete Materialien** *Used materials*	EVA Co-polymer and POE	
6	**Sonstiges** *Other*	Test sample(s), as well sample information, description, product details and intended usage was provided by customer. The laboratory is not be responsible for the information/data provided by the customer which can affect the validity of results.	
7	**Prüfmusterbereitstellung**: *Test sample obtaining*	☒ Sending by customer ☐ Sampling by TÜV Rheinland Group ☐ others:	

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*

IEC 60112 - Tracking test			
Clause	Requirement – test	Result - Remark	Verdict
7	Test apparatus		P
7.1	Electrodes		P
	Two electrodes of platinum with a minimum purity of 99 % shall be used (see Annex C). The two electrodes shall have a rectangular cross-section of (5 ± 0,1) mm × (2 ± 0,1) mm, with one end chisel-edged with an angle of (30 ± 2)° (see Figure 1).	Width: 5.01mm (Both) Thickness: 2.01mm (left) 2.00mm(Right) Angle: 29.8° (Both)	P
	At the start of the test, the electrodes shall be symmetrically arranged in a vertical plane, the total angle between them being (60 ± 5)° and with opposing electrode faces approximately vertical on a flat horizontal surface of the test specimen (see Figure 2).	60°	P
	Their separation along the surface of the test specimen at the start of the test shall be (4,0 ± 0,1) mm.	4.0mm	P
	A thin metal rectangular slip gauge shall be used to check the electrode separation. The electrodes shall move freely and the force exerted by each electrode on the surface of the test specimen at the start of the test shall be (1,00 ± 0,05) N. The design shall be such that the force can be expected to remain at the initial level during the test	1.00N	P
7.2	Test circuit		P
	The over-current device shall operate when a current with an RMS value of (0,50 ± 0,05) A has persisted for (2,00 ± 0,20) s.	2.01s	P
7.3	Test solutions		P
	Solution A: Dissolve approximately 0,1 % by mass of analytical reagent grade anhydrous ammonium chloride (NH_4Cl), of a purity of not less than 99,8 %, in de-ionized water to give a resistivity of (3,95 ± 0,05) Ωm at (23 ± 1) °C.	Resistivity = 3.97 Ωm	P
	Solution B: Dissolve approximately 0,1 % by mass of analytical reagent grade anhydrous ammonium chloride, of a purity of not less than 99,8 %, and (0,500 ± 0,002) % by mass of sodium-di-butyl naphthalene sulfonate in de-ionized water to give a resistivity of (1,98 ± 0,05) Ωm at (23 ± 1) °C.		N/A
	Solution C: Dissolve approximately 0,2 % by mass of analytical reagent grade anhydrous ammonium chloride (NH_4Cl), of a purity of not less than 99,8 %, and (0,5 ± 0,02) % by mass of a non-ionic surfactant (t-octylphenoxypolyethoxyethanol, CAS Registry Number 9002-93-1) in de-ionized water to give a resistivity of (1,98 ± 0,05) Ωm at (23 ± 1) °C and a surface tension of < 40 mN/m according to ISO 304		N/A
7.4	Dropping device		P
	The mass of a sequence of 50 drops shall lie between 0,997 g and 1,147 g. The mass of a sequence of 20 drops shall lie between 0,380 g and 0,480 g.	1.04g	P
8	Basic test procedure		P
8.1	General		P
	Tests shall be made at an ambient temperature of (23 ± 5) °C.	25.1-25.2°C	P
8.2	Preparation		P

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
	After each test, clean the electrodes with an appropriate solvent and then rinse and dry them with de-ionized water. If necessary, restore their shape, polish if necessary, and give a final rinse and dry before the next test		P
10	Proof tracking index test (PTI)		N/A
10.1	50 drop tests conducted in accordance with Clause 8, the specified voltage		N/A
	The proof voltage shall be an integer multiple of 25 V		N/A
11	Dertermination of comparative tracking index (CTI)		P
11.1	General		P
	comparative tracking index requires the determination of the maximum voltage at which five specimens withstand the test period for 50 drops without failure	Complies	P
	If this is not the case, the maximum 100 drop		N/A
11.2	Screening test		P
	For the unknown behaviour of the material, a screening test shall start with at least three specimens at a maximum starting voltage of 300 V with a minimum of 50 drops	Initial tested volatge is 300V	P
	Material withstands the initial test without tracking failure and without a persistent flame, always using three specimens	Complies	P
	Voltage increased by 100V steps until a tracking failure or a persistent flame occurs	See Table 1	P
	Then reduce the test voltage by 50 V	See above	N/A
	Finally increase or reduce the test voltage by 25 V to identify the maximum test voltage for the determination of the comparative tracking index	See above	N/A
	If the materail fails at the initial test voltage, reduce the test voltage by 100 V		N/A
	Then reduce the test voltage by 50 V		N/A
	Finally increase or reduce the test voltage by 25 V to identify the maximum test voltage for the determination of the comparative tracking index		N/A
11.3	Determination of the 50 drop point		P
	By inference from the 100 drop data, repeat the test procedure at an appropirate test voltage , using a new site/specimen and determine wheather the specimen withstands the test for the period up to at least 25s after the 50th drop has fallen	See Table 1	P
11.4	Determination of the 100 drop point		N/A
	Using the basic procedure described in IEC 60112 clause 8, set the voltage at a selected level and make the test until at lesat 25s elapsed after the one hunderedth drop has fallen or until previous failure occurs		N/A

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*

Table 1

Test Voltage (V)	Sample set 1	Sample set 2	Sample set 3	Sample set 4	Sample set 5	Test solution A [No of drops]	Erosion depth [mm]	Result
100	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	50 drops	< 1mm	Pass
200	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure		< 1mm	Pass
300	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure		< 1mm	Pass
400	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure		< 1mm	Pass
500	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure		< 1mm	Pass
600	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure		< 1mm	Pass
575	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	No Flame, No Track failure	100 drops	< 1mm	Pass

Remark:
1. Test solution A : Ammonium chloride
2. For each test voltage, 5 different test specimens are tested from the sample sets.
3. 6 samples are Stacked during testing to achieve thickness > 3mm.
   Total thickness of 6 Stacked sample is aproximately 3.04mm.
4. No erosion occured during and after the application.

Construction (structure) details:

1.	Part:	EVA-POE-EVA
2.	Material:	Solar Encapsulant EPE Film
3.	Colour:	Natural
4.	Total thickness:	3.04 mm
5.	Air side layer (Thickness):	Not Applicable
6.	Middle layer / Core Layer (Thickness)::	Not Applicable
7.	Cell side layer (Thickness):	Not Applicable

List of test equipment used:

Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
CTI Tracking Tester / G1827867	0-600V	2025-11-10	2026-11-09
Vernier Caliper / G1828025	0-200mm	2025-05-03	2026-05-02
Digital Multimeter / G1827575	600V, 10A	2025-07-10	2026-07-09
Weighing scale / G1827434	500g, least count: 0.01g	2026-02-02	2027-02-01
Hygrometer / G1827795	-10 to 50°C, 10-99%RH	2025-06-23	2026-06-22

***** End of Test Report *****