



UV RESISTANT PEN INSULATION FILM FOR SOLAR PV MODULE



UV
Resistance



Weather
Resistance



High Temp
Stability



Excellent Electrical
Insulation



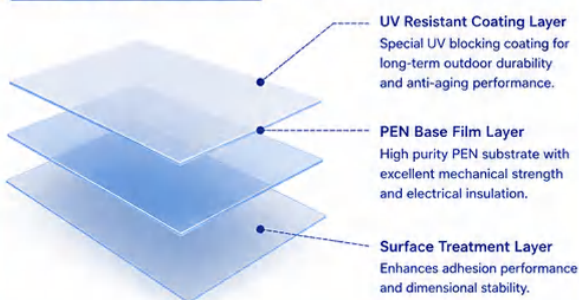
Low Shrinkage
High Stability



Long Outdoor
Service Life



1. PRODUCT STRUCTURE



2. THICKNESS OPTIONS

Thickness (μm)	25	38	50	75	100	125	Custom
Tolerance (μm)	±2	±2	±2	±3	±3	±3	±5

3. TYPICAL PROPERTIES

Property	Test Method	Unit	25μm	38μm	50μm	75μm	100μm	125μm
Basis Weight	ASTM D374	g/m ²	34.5	52.5	69.0	103.5	138.0	172.5
Tensile Strength (MD)	ASTM D882	MPa	≥ 230	≥ 230	≥ 230	≥ 230	≥ 230	≥ 230
Tensile Strength (TD)	ASTM D882	MPa	≥ 230	≥ 230	≥ 230	≥ 230	≥ 230	≥ 230
Elongation at Break (MD)	ASTM D882	%	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100
Elongation at Break (TD)	ASTM D882	%	≥ 120	≥ 120	≥ 120	≥ 120	≥ 120	≥ 120
Thermal Shrinkage (150°C, 30min)	ASTM D1204	%	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3
Dielectric Strength	ASTM D149	kV/μm	≥ 200	≥ 200	≥ 200	≥ 200	≥ 200	≥ 200
Volume Resistivity	ASTM D257	Ω·cm	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶
Surface Resistivity	ASTM D257	Ω/sq	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶
Haze	ASTM D1003	%	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5
Light Transmittance	ASTM D1003	%	≥ 88	≥ 88	≥ 88	≥ 88	≥ 88	≥ 88

4. UV AGING RESISTANCE (TYPICAL)

Test Method	Test Condition	Performance
QUV Accelerated Aging ASTM G154	UV-A 340nm, 0.89W/m ² 60°C, 2000h	No cracking, no delamination, Δb* ≤ 2.0, retain ≥ 90% mechanical performance
Outdoor Exposure Test IEC 61215	Natural outdoor exposure 24 months	No yellowing, no embrittlement, excellent weatherability

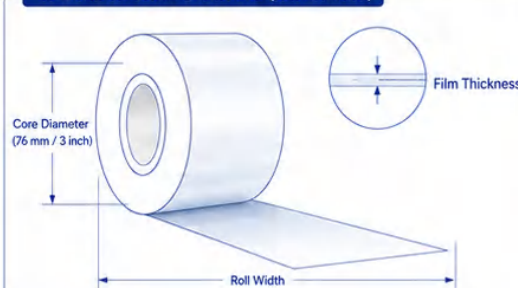
5. THERMAL PROPERTIES

Property	Test Method	Unit	Typical Value
Melting Point (T _m)	DSC	°C	255 ~ 265
Glass Transition Temperature (T _g)	DSC	°C	120 ~ 130
Continuous Use Temperature	—	°C	-60 ~ 180
Max. Short-term Temperature	—	°C	200

7. ELECTRICAL PROPERTIES

Roll Width	300 mm, 400,, 500 mm,, 800 800 h 8/6' 0ble,	—
Roll Length	100 m, 200 m, 500 m, 1000 m (Custom length available)	—
Core Diameter	3 inch (76 mm)	—
Max. Roll Diameter	800 mm	—
Slitting Tolerance	± 0.3 mm	—
Edge Condition	Clean cut, no burr	—
Winding	Tension control, wrinkle free	—

8. DIMENSIONAL DRAWING (REFERENCE)



9. APPLICATIONS



Solar PV Module



Solar Backsheet



Junction Box Protection



PV Module Lamination



Outdoor Renewable
Energy Systems

10. STORAGE & HANDLING



Store in a clean, dry environment
at 15~30°C and 40~60% RH.



Keep away from direct sunlight,
heat source and corrosive gases.



Use within 12 months from the
date of shipment for best performance.

The above values are typical values, not guaranteed values. The data is measured under standard test conditions and may vary with test methods and application conditions.