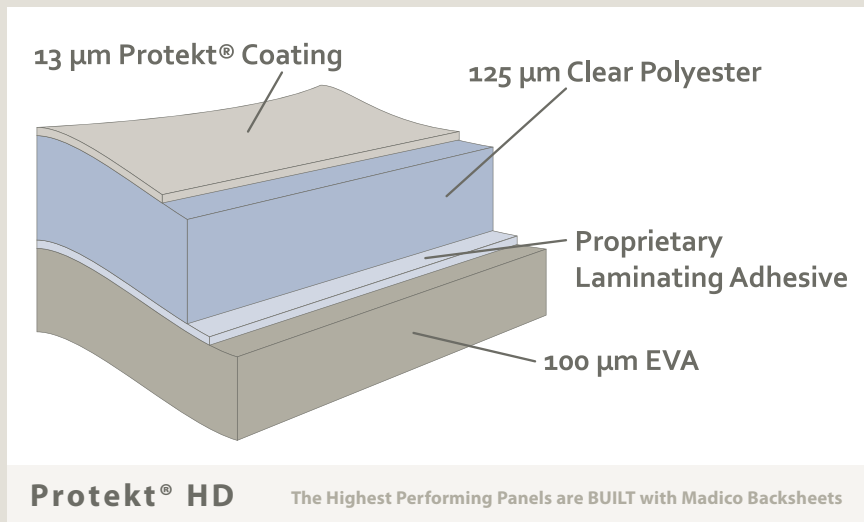


Protekt® HD

MADICO PV BACKSHEET



Material Composition		Protekt® / PET / EVA
Thickness	249 ± 25 µm	
Width Range	25 - 1830 mm	
Weight	279 g/m ²	
Density	1.15 g/cm ³	
Protekt® Colors	White, Charcoal	
EVA Colors	Bright White, Black, Clear, Custom Colors	

Technical Characteristics

Tensile Strength at Break (MD/TD) Internal Testing - Data Available	100 MPa (MD) 112 MPa (TD)
Elongation at Break (MD/TD) Internal Testing - Data Available	110% (MD) 120% (TD)
Tear Strength (MD/TD) Internal Testing - Data Available	3.3 N (MD) 7.4 N (TD)
Dimensional Stability (MD/TD) 150°C for 30 min, Internal Testing - Data Available	< 1%
EVA Peel Strength from Encapsulant Internal Testing - Data Available	≥ 70 N/cm
Peel Strength of Layers PET / EVA	≥ 5 N/cm

Madico Protekt® Backsheets

The Market Leader for Performance, Quality and Availability

Protekt® Technology was specifically developed for the PV Industry. It is a coating that is directly applied to the base dielectric bonding layers of PET/EVA, resulting in a backsheet with excellent stability characteristics. The HD represents high dielectric performance that exhibits superior partial discharge and electrical insulation properties, providing maximum power and bond strength. Protekt® HD is the ultimate in flame resistance and durability against hydrolysis and chemical degradation. Protekt® HD has undergone extensive testing to exceed UL, TUV and industry standards; ensuring performance reliability for the life of the panel.

Protekt® HD is the most popular backsheet on the market and protects panels around the globe.

Advantages

- Power boost up to 5%
- Global manufacturing and supply
- Exceeds industry testing standards
- Custom colors, including our patented Bright White Technology and Charcoal for BIPV
- Superior insulation properties
- Superior in weatherability
- Resistant to flame



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Typical Data – Not Specification

The performance representations and suitability in this Data Sheet are based on testing accomplished by Madico or its agents. Since only the manufacturer of the panel is aware of the specific manufacturing processes and conditions which the product will undergo during assembly of the PV solar panels, and of the specific conditions in which the product will ultimately be used, it is the manufacturer's responsibility to determine whether the product is suitable for its intended end-use. Protekt® is a registered trademark owned by Madico, Inc.

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The accompanying product is protected by U.S. Pat. Nos. 7,579,083 and 7,338,707 and other US and foreign pending applications. V0796 R10



SUPERIOR IN
FLAME RESISTANCE



SUPERIOR IN
WEATHERABILITY



SUPERIOR IN
ELECTRICAL INSULATION

Flame Resistance Testing Performance

Flame Spread Index In accordance with ASTM E162	64.04
High Current Arc Ignition (HAI) exposed to 150 arcs with no ignition	Category 0
Vertical Burn (Protekt®/PET construction) Flammability VB Testing in accordance with IEC 60695-11-10	5VB

Weatherability Testing Performance

Relative Thermal Index (RTI) Suitable for use at continuous 85°C	RTI=105°C
Damp Heat Testing 85°C, 85% RH IEC 61215	>2000 hours
Heat Freeze Humidity In accordance with UL 1703, >10 cycles	>70% of initial mechanical properties retained
UV Stability In accordance with UL 746C	>70% of initial mechanical properties retained
MVTR In accordance with ASTM F1249; 38°C, 90% RH	≤ 2.5 g/m ² x day

Electrical Insulation Testing Performance

Partial Discharge IEC 60664-1	≥ 1000 VDC
Dielectric Strength UL 746 A	18 kV
Volume Resistivity 10 ^X ohm-cm	18
Comparative Tracking Index (CTI) Thickness tested: 3.0mm	CTI Value: 600V

Protekt® HD

PERFORMANCE TESTING