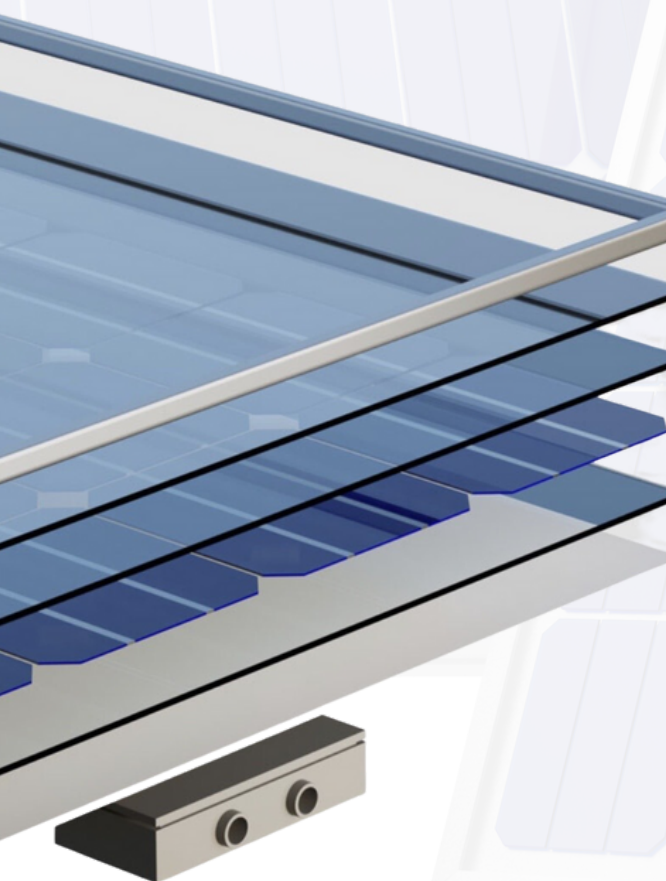




ALISHAN

ENCAPSULANTS BACKSHEETS

TECHNICAL DATA SHEETS

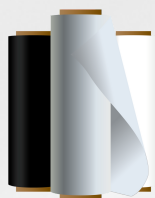
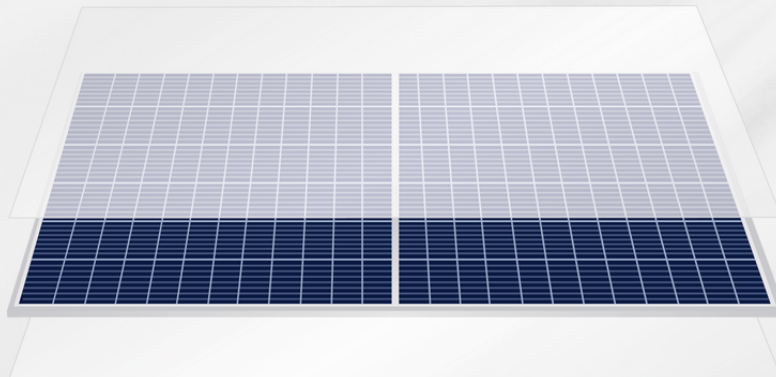
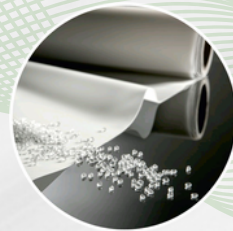


ALISHAN ENCAPSULANTS

ALISHAN BackPRO

Uncover the true potential of each
SOLAR PANEL
with
WORLD-CLASS
ENCAPSULANT & BACKSHEETS

EVA SHEET



BACKSHEETS

ALISHAN EPE ENCAPSULANT



Alishan EPE is multilayer coextruded film of EVA-POE manufactured by Alishan Green Energy with the cutting edge manufacturing facility. Alishan EPE is suitable for TopCon, PERC and HJT technologies for M10 or G12 configurations. Alishan EPE ensures acid free environment inside the module and hence provides excellent suitability with any metal grid.

Product	Alishan EPE			
Linear meter	Up to 300 meters			
Width	Up to 1350 mm			
Thickness	Up to 0.80 mm			
Properties	Description	Standard	UOM	Alishan EPE
Physical properties	Tensile strength	ASTM D 638	MPa	12 ± 3
	Elongation		%	≥ 500
	Adhesion with Glass	ASTM D 903	N/cm	≥ 75
	Adhesion with Backsheet		N/cm	≥ 75
Thermal Property	Thermal Shrinkage	160 Deg C / 5 min	%	MD ≤ 3
				TD ≤ 1
Electrical Property	Volume resistivity	ASTM D257-14	Ohm. cm	>1×10 ¹⁵
Gel content		ASTM D 2765	%	> 75
Optical Properties	Transmittance	ASTM E 424	%	≥ 90
	Yellowness Index		-	≤ 1
Lamination Parameters			UOM	Values
	Vacuum / Evacuation Time		Minutes	5 – 8
	Lamination / Pressing Time		Minutes	10 – 14
	Lamination Temperature		°C	120 – 150

Packing

The EPE rolls are wound a standard 3 inches (inner diameter) paper core, the standard length of EPE film in a roll is up to 300 meters. Each roll was wrapped in polyethene film and placed in a carton box and 9 boxes are placed in a pallet.

Storage

Must be stored in a dry and temperature of ≤ 30°C and humidity ≤ 60%, the shelf life of this product is 9 months from the date of manufacturing.

ALISHAN POE ENCAPSULANT



Alishan POE is Polyolefin based encapsulant manufactured by Alishan Green Energy Private Limited, in the world-class manufacturing technology with proven raw materials. Alishan POEs are excellent PID and snail trail resistant and suitable for both Glass – Glass and Glass – back sheet modules. Our POE ensures the reliability and life of solar modules in the field.

Product	Alishan POE			
Linear meter	Up to 300 meters			
Width	Up to 1350 mm			
Thickness	Up to 0.80 mm			
Properties	Description	Standard	UOM	Alishan POE
Physical properties	Tensile strength	ASTM D 638	MPa	12 ± 3
	Elongation		%	≥ 500
	Adhesion with Glass	ASTM D 903	N/cm	≥ 70
	Adhesion with Backsheet		N/cm	≥ 70
Thermal Property	Thermal Shrinkage	160 Deg C / 5 min	%	MD ≤ 3
				TD ≤ 1
Electrical Property	Volume resistivity	ASTM 257-14	Ohm. cm	>1×10 ¹⁶
Gel content		ASTM D 2765	%	> 60
Optical Properties	Transmittance	ASTM E 424	%	≥ 90
	UV cut off		nm	360 ± 30
	Yellowness Index		-	≤ 1
Lamination Parameters			UOM	Values
	Vacuum / Evacuation Time		Minutes	6 – 10
	Lamination / Pressing Time		Minutes	12 – 16
	Lamination Temperature		°C	140 – 160

Packing

The POE rolls are wound a standard 3 inches (inner diameter) paper core, the standard length of POE film in a roll is up to 300 meters. Each roll was wrapped in polyethene film and placed in a carton box and 9 boxes are placed in a pallet.

Storage

Must be stored in a dry and temperature of ≤ 30°C and humidity ≤ 60%, the shelf life of this product is 9 months from the date of manufacturing.

ALISHAN POE – T ENCAPSULANT



Alishan POE – T is Polyolefin based encapsulant manufactured by Alishan Green Energy Private Limited, in the world-class manufacturing technology with proven raw materials. Alishan POEs are excellent PID and snail trail resistant and suitable for both Glass – Glass and Glass – back sheet modules. Our POE ensures the reliability and life of solar modules in the field.

Product	Alishan POE – T			
Linear meter	Up to 300 meters			
Width	Up to 1350 mm			
Thickness	Up to 0.80 mm			
Properties	Description	Standard	UOM	Alishan POE – T
Physical properties	Tensile strength	ASTM D 638	MPa	12 ± 3
	Elongation		%	≥ 500
	Adhesion with Glass	ASTM D 903	N/cm	≥ 70
	Adhesion with Backsheet		N/cm	≥ 70
Thermal Property	Thermal Shrinkage	160 Deg C / 5 min	%	MD ≤ 3
				TD ≤ 1
Electrical Property	Volume resistivity	ASTM 257-14	Ohm. cm	>1×10 ¹⁶
Gel content		ASTM D 2765	%	> 60
Optical Properties	Transmittance	ASTM E 424	%	≥ 90
	UV cut off		nm	-
	Yellowness Index		-	≤ 1
Lamination Parameters			UOM	Values
	Vacuum / Evacuation Time		Minutes	6 – 10
	Lamination / Pressing Time		Minutes	12 – 16
	Lamination Temperature		°C	140 – 160

Packing

The POE – T rolls are wound a standard 3 inches (inner diameter) paper core, the standard length of POE – T film in a roll is up to 300 meters. Each roll was wrapped in polyethylene film and placed in a carton box and 9 boxes are placed in a pallet.

Storage

Must be stored in a dry and temperature of ≤ 30°C and humidity ≤ 60%, the shelf life of this product is 9 months from the date of manufacturing.

ALISHAN FC EVA ENCAPSULANT



Alishan FC is one of the fast-cure variants of EVA encapsulants manufactured by Alishan Green Energy Private Limited, in world-class manufacturing technology with proven raw materials. Alishan EVAs are PID and snail trail resistant. Our EVA ensures the reliability and life of solar modules in the field, these fast cure EVA encapsulants can be laminated in up to 15 minutes at a temperature varying from 140 - 150° C.

Product	Alishan FC			
Linear meter	Up to 300 meters			
Width	Up to 1350 mm			
Thickness	Up to 0.80 mm			
Properties	Description	Standard	UOM	Alishan FC
Physical Properties	Tensile strength	ASTM D 638	MPa	≥ 16
	Elongation		%	≥ 600
	Adhesion with Glass	ASTM D 903	N/cm	≥ 75
	Adhesion with Backsheet		N/cm	≥ 75
	VA Content	-	%	28 ± 2
Water Ingress	Water absorption	ISO 62	%	≤ 0.1
Thermal Properties	Thermal Shrinkage	160 Deg C / 5 min	%	MD ≤ 3 TD ≤ 1
	Thermal conductivity	ISO 22007	W/ m K	0.2475
Electrical Properties	Dielectric Strength	ASTM D 149	kV/mm	32
	CTI(Comparative Tracking Index)	IEC 60112	V	600
	Volume resistivity	ASTM 257-14	Ohm. cm	$>1 \times 10^{15}$
Gel content		ASTM D 2765	%	≥ 75
Optical Properties	Transmittance	ASTM E 424	%	≥ 91
	UV cut off		nm	360 ± 30
	Yellowness Index		-	≤ 1
	Refractive Index	ASTM D 1218	-	1.48
Lamination Parameters			UOM	Values
	Vacuum / Evacuation Time		Minutes	4 - 6
	Lamination / Pressing Time		Minutes	8 - 10
	Lamination Temperature		°C	140 - 150

Packing

The EVA rolls are wound on a standard 3 inches (inner diameter) paper core, the standard length of EVA film in a roll is up to 300 meters. Each roll was wrapped in polyethylene film and placed in a carton box and 9 boxes and placed in a pallet.

Storage

Must be stored in a dry and temperature of $\leq 30^{\circ}\text{C}$ and humidity $\leq 60\%$, the shelf life of this product is 9 months from the date of manufacturing.



ALISHAN FRONT EVA ENCAPSULANT



Alishan Front EVA is one of the fast-cure variants of EVA encapsulants manufactured by Alishan Green Energy Private Limited, in world-class manufacturing technology and proven raw materials. This is especially meant for front/top EVA solutions with UV transparency and better PID resistance. Our EVA ensures the reliability and life of solar modules in the field, these fast cures EVA encapsulants can be laminated in up to 15 minutes at a temperature varying from 140 – 150° C.

Product	Alishan Front EVA			
Linear meter	Up to 300 meters			
Width	Up to 1350 mm			
Thickness	Up to 0.80 mm			
Properties	Description	Standard	UOM	Alishan Front EVA
Physical Properties	Tensile strength	ASTM D 638	MPa	≥ 16
	Elongation		%	≥ 600
	Adhesion with Glass	ASTM D 903	N/cm	≥ 75
	Adhesion with Backsheet		N/cm	≥ 75
	VA Content	-	%	28 ± 2
Water Ingress	Water absorption	ISO 62	%	≤ 0.1
Thermal Properties	Thermal Shrinkage	160 Deg C / 5 min	%	MD ≤ 3 TD ≤ 1
	Thermal conductivity	ISO 22007	W/ m K	0.2475
Electrical Property	Dielectric Strength	ASTM D 149	kV/mm	32
	CTI(Comparative Tracking Index	IEC 60112	V	> 600
	Volume resistivity	ASTM 257-14	Ohm. cm	>1×10 ¹⁵
Gel content		ASTM D 2765	%	≥ 75
Optical Properties	Transmittance	ASTM E 424	%	≥ 91
	UV cut off		nm	-
	Yellowness Index		-	≤ 1
	Refractive Index	ASTM D 1218	-	1.48
Lamination Parameters			UOM	Values
	Vacuum / Evacuation Time		Minutes	4 – 6
	Lamination / Pressing Time		Minutes	8 – 10
	Lamination Temperature		°C	140 – 150

Packing

The EVA rolls are wound on a standard 3 inches (inner diameter) paper core, the standard length of EVA film in a roll is up to 300 meters. Each roll was wrapped in polyethene film and placed in a carton box and 9 boxes are placed in a pallet.

Storage

Must be stored in a dry and temperature of ≤ 30°C and humidity ≤ 60%, the shelf life of this product is 9 months from the date of manufacturing.



ALISHAN UFC EVA ENCAPSULANT



Alishan UFC is one of the ultra-fast cure variants of EVA encapsulants manufactured by Alishan Green Energy Private Limited, in the world class manufacturing technology with proven raw materials. Alishan EVAs are PID and snail trail resistant. Our EVA ensures the reliability and life of solar modules in the field, these ultra-fast cure EVA encapsulants can be laminated at upto 12 minutes at a temperature varying from 140 – 150° C.

Product	Alishan UFC			
Linear meter	Up to 300 meters			
Width	Up to 1350 mm			
Thickness	Up to 0.80 mm			
Properties	Description	Standard	UOM	Alishan UFC
Physical properties	Tensile strength	ASTM D 638	MPa	≥ 16
	Elongation		%	≥ 600
	Adhesion with Glass	ASTM D 903	N/cm	≥ 75
	Adhesion with Backsheet		N/cm	≥ 75
	VA Content	-	%	28 ± 2
Water Ingress	Water absorption	ISO 62	%	≤ 0.1
Thermal Properties	Thermal Shrinkage	160 Deg C / 5 min	%	MD ≤ 3 TD ≤ 1
	Thermal conductivity	ISO 22007	W/ m K	0.2475
Electrical Properties	Dielectric Strength	ASTM D 149	kV/mm	32
	CTI(Comparative Tracking Index)	IEC 60112	V	600
	Volume resistivity	ASTM 257-14	Ohm. cm	>1×10 ¹⁵
Gel content		ASTM D 2765	%	≥ 75
Optical Properties	Transmittance	ASTM E 424	%	≥ 91
	UV cut off		nm	360 ± 30
	Yellowness Index		-	≤ 1
	Refractive Index	ASTM D 1218	-	1.48
Lamination Parameters			UOM	Values
	Vacuum / Evacuation Time		Minutes	3 – 4
	Lamination / Pressing Time		Minutes	6 – 8
	Lamination Temperature		°C	140 – 150

Packing

The EVA rolls are wound on a standard 3 inches (inner diameter) paper core, the standard length of EVA film in a roll is up to 300 meters. Each roll was wrapped in polyethylene film and placed in a carton box and 9 boxes are placed in a pallet.

Storage

Must be stored in a dry and temperature of ≤ 30°C and humidity ≤ 60%, the shelf life of this product is 9 months from the date of manufacturing.



ALISHAN UFC - T EVA ENCAPSULANT



Alishan FC - T is one of the ultra-fast cure variants of EVA encapsulants manufactured by Alishan Green Energy Private Limited, in the world-class manufacturing technology with proven raw materials. This is especially meant for front/top EVA solutions with UV with transparency and better PID resistance. Our EVA ensures the reliability and life of solar modules in the field, these ultra-fast cures EVA encapsulants can be laminated in up to 12 minutes at a temperature varying from 140 - 150° C.

Product	Alishan UFC - T			
Linear meter	Up to 300 meters			
Width	Up to 1350 mm			
Thickness	Up to 0.80 mm			
Properties	Description	Standard	UOM	Alishan UFC - T
Physical Properties	Tensile strength	ASTM D 638	MPa	≥ 16
	Elongation		%	≥ 600
	Adhesion with Glass	ASTM D 903	N/cm	≥ 75
	Adhesion with Backsheet		N/cm	≥ 75
	VA Content	-	%	28 ± 2
Water Ingress	Water absorption	ISO 62	%	≤ 0.1
Thermal Properties	Thermal Shrinkage	160 Deg C / 5 min	%	MD ≤ 3 TD ≤ 1
	Thermal conductivity	ISO 22007	W/ m K	0.2475
Electrical Properties	Dielectric Strength	ASTM D 149	kV/mm	32
	CTI(Comparative Tracking Index)	IEC 60112	v	600
	Volume resistivity	ASTM 257-14	Ohm. cm	>1×10 ¹⁵
Gel content		ASTM D 2765	%	≥ 75
Optical Properties	Transmittance	ASTM E 424	%	≥ 91
	UV cut off		nm	-
	Yellowness Index		-	≤ 1
	Refractive Index	ASTM D 1218	-	1.48
Lamination Parameters			UOM	Values
	Vacuum / Evacuation Time		Minutes	3 - 4
	Lamination / Pressing Time		Minutes	6 - 8
	Lamination Temperature		°C	140 - 150

Packing

The EVA rolls are wound on a standard 3 inches (inner diameter) paper core, the standard length of EVA film in a roll is up to 300 meters. Each roll was wrapped in polyethene film and placed in a carton box and 9 boxes are placed in a pallet.

Storage

Must be stored in a dry and temperature of ≤ 30°C and humidity ≤ 60%, the shelf life of this product is 9 months from the date of manufacturing.



Alishan Back Sheet BackPro ABS-PPC is available with 1000 & 1500 V system voltage with airside HPET layer and proprietary cell side Fluoro coating layer.

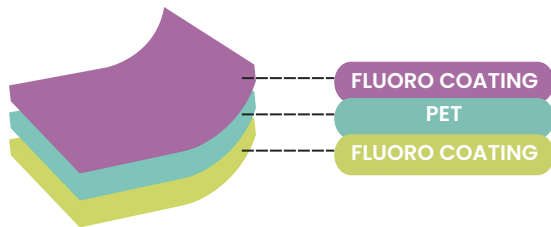
STRUCTURE DETAILS		ABS - PPC	
LAYER NO.	PARTICULARS		
1	Air side HPET layer		
2	Adhesive layer		
3	Middle PET layer		
4	Cell side Fluoro Coating		

S. NO.	PROPERTIES	UOM	TEST METHOD	ABS - PPC (1000 V)		ABS - PPC (1500 V)	
1	Thickness	μm	Micrometer	195 ± 5 %		310 (-10/+15)	
2	Width	mm	Scale	Up to 1350		Up to 1350	
3	Tensile Strength	MPa	ASTM D 882	MD	≥ 100	MD	≥ 100
				TD	≥ 100	TD	≥ 100
4	Elongation	%	ASTM D 882	MD	≥ 100	MD	≥ 100
				TD	≥ 90	TD	≥ 90
5	Thermal Shrinkage	%	150° C / 30 min	MD	≤ 1.0	MD	≤ 1.0
				TD	≤ 1.0	TD	≤ 1.0
6	Interlayer Adhesion	N/cm	ASTM D 903	HPET-PET	≥ 4	HPET-PET	≥ 4
		Grade	GB / T9286	Cell Side	Grade 0	Cell Side	Grade 0
7	Adhesion with EVA	N/cm	ASTM D 903	≥ 60		≥ 60	
8	MVTR	g/m ² /day	ASTM F 1249	≤ 0.5		≤ 0.5	
9	CTI	V	IEC 60112	> 600		> 600	

Packing : Up to 200 meters per roll, 9 or 12 rolls per pallet
Storage Condition : To be stored in sealed packing at temperature ≤ 30° C & Humidity ≤ 60 %
Shelf life : Recommended to use within 24 months from the date of manufacture

The above properties are a typical range of properties and are not to be used for designing or establishing the limits of specification.

Alishan Backsheet BackPro ABS-CPC are available in both 1000 V & 1500 V system voltage. The backsheet comes with a proprietary coating layer on both the airside and cell side.

CONSTRUCTION DETAILS		ABS - CPC
LAYER NO.	PARTICULARS	
1	Air Side Fluoro Coating	
2	Middle PET Layer	
3	Cell Side Fluoro Coating	

S. NO.	PROPERTIES	UOM	TEST METHOD	ABS - CPC - 1000 V		ABS - CPC - 1500 V	
1	Thickness	μm	Micrometer	275 ± 5 %		310 (-10/+15)	
2	Width	mm	Scale	Up to 1350		Up to 1350	
3	Tensile Strength	MPa	ASTM D 882	MD	≥ 100	MD	≥ 100
				TD	≥ 100	TD	≥ 100
4	Elongation	%	ASTM D 882	MD	≥ 100	MD	≥ 100
				TD	≥ 90	TD	≥ 90
5	Thermal Shrinkage	%	150° C / 30 min	MD	≤ 1.0	MD	≤ 1.0
				TD	≤ 1.0	TD	≤ 1.0
6	Coating Adhesion	Grade	GB / T9286	Air Side	Grade 0	Air Side	Grade 0
				Cell Side	Grade 0	Cell Side	Grade 0
7	Adhesion with EVA	N/cm	ASTM D 903	≥ 60		≥ 60	
8	MVTR	g/m ² /day	ASTM F 1249	≤ 0.5		≤ 0.5	
9	CTI	V	IEC 60112	> 600		> 600	

Packing	: Upto 200 meters per roll, 9 or 12 rolls per pallet
Storage Condition	: To be stored in sealed packing at temperature ≤ 30° C & Humidity ≤ 60 %
Shelf life	: Recommended to use within 24 months from the date of manufacture

The above properties are a typical range of properties and are not to be used for designing or establishing the limits of specification.

Alishan Back Sheet BackPro ABS-KPC is of 1500 V system voltage with airside PVDF layer and proprietary cell side Fluoro coating layer.

STRUCTURE DETAILS		ABS - KPC
LAYER NO.	PARTICULARS	
1	Air side PVDF layer	
2	Adhesive layer	
3	Middle PET layer	
4	Cell side Fluoro Coating	

S. NO.	PROPERTIES	UOM	TEST METHOD	ABS - KPC - 1500 V	
1	Thickness	μm	Micrometer	315 ± 5 %	
2	Width	mm	Scale	Up to 1350	
3	Tensile Strength	MPa	ASTM D 882	MD	≥ 100
				TD	≥ 100
4	Elongation	%	ASTM D 882	MD	≥ 100
				TD	≥ 90
5	Thermal Shrinkage	%	150° C / 30 min	MD	≤ 1.0
				TD	≤ 1.0
6	Interlayer Adhesion	N/cm	ASTM D 903	PVDF-PET	≥ 4.0
7	Coating Adhesion	Grade	GB / T9286	Cell Side	Grade 0
8	Adhesion with EVA	N/cm	ASTM D 903	≥ 60	
9	MVTR	g/m ² /day	ASTM F 1249	≤ 0.5	
10	CTI	V	IEC 60112	> 600	

Packing	: Up to 200 meters per roll, 9 or 12 rolls per pallet
Storage Condition	: To be stored in sealed packing at temperature ≤ 30° C & Humidity ≤ 60 %
Shelf life	: Recommended to use within 24 months from the date of manufacture

The above properties are a typical range of properties and are not to be used for designing or establishing the limits of specification.

BackPro (ABS-KPC-T)

Alishan Back Sheet BackPro ABS-KPC-T is of 1500 V system voltage with airside PVDF layer and proprietary cell side Fluoro coating layer. It comes with the benefits of superior transmittance and hydrophobicity for high efficiency M10 and M12 modules.

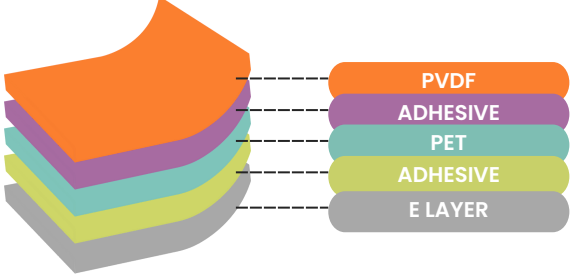
STRUCTURE DETAILS			ABS - KPC-T
LAYER NO	PARTICULARS	THICKNESS (μm)	
1	Air side transparent PVDF	25	
2	Adhesive layer	10	
3	Middle transparent PET	275	
4	Cell side Coating	6	

S. NO.	PROPERTIES	UOM	TEST METHOD	ABS-KPC-T (1500 V)	
1	Thickness	μm	Micrometer	315 ± 5 %	
2	Width	mm	Scale	Upto 1350	
3	Transmittance	%	ASTM E 424	>91	
4	Tensile Strength	MPa	ASTM D 882	MD	≥ 100
				TD	≥ 100
5	Elongation	%	ASTM D 882	MD	≥ 100
				TD	≥ 90
6	Thermal Shrinkage	%	150°C / 30 min	MD	≤1.0
				TD	≤1.0
7	Interlayer Adhesion	N/cm	ASTM D 903	PVDF-PET	≥4.0
8	Coating Adhesion	Grade	GB / T9286	Cell side	Grade 0
9	Adhesion with EVA	N/cm	ASTM D 903	≥ 60	
10	MVTR	g/m²/day	ASTM F 1249	≤ 2	
11	CTI	V	IEC 60112	> 600	

Packing	: Up to 200 meters per roll, 9 or 12 rolls per pallet
Storage Condition	: To be stored in sealed packing at temperature ≤ 30° C & Humidity ≤ 60 %
Shelf life	: Recommended to use within 24 months from the date of manufacture

The above properties are a typical range of properties and are not to be used for designing or establishing the limits of specification.

Alishan Back Sheet BackPro ABS-KPE is available for 1000 V and 1500 V system voltage with airside PVDF layer and cell side traditional PE layer. Its high adhesion with encapsulants makes it suitable for highly reliable and efficient solar modules.

STRUCTURE DETAILS			ABS-KPE
LAYER NO	PARTICULARS	THICKNESS (μm)	
1	Air side PVDF	25	
2	Adhesive	10	
3	Middle PET	275	
4	Adhesive	10	
5	Cell side E layer	50	

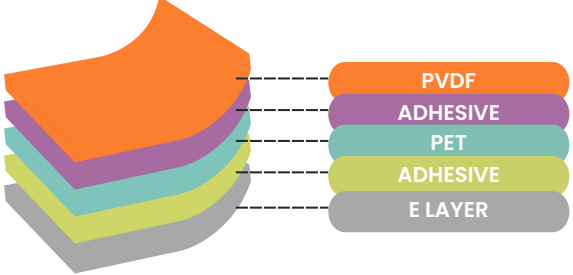
S. NO.	PROPERTIES	UOM	TEST METHOD	ABS-KPE (1500 V)	
1	Thickness	μm	Micrometer	370 ± 5 %	
2	Width	mm	Scale	Upto 1350	
3	Tensile Strength	MPa	ASTM D 882	MD	≥ 100
				TD	≥ 100
4	Elongation	%	ASTM D 882	MD	≥ 100
				TD	≥ 90
5	Thermal Shrinkage	%	150°C / 30 min	MD	≤ 1.0
				TD	≤ 1.0
6	Interlayer Adhesion	N/cm	ASTM D 903	PVDF-PET	≥ 4.0
7	Interlayer Adhesion	N/cm	ASTM D 903	PET-E layer	≥ 4.0
8	Adhesion with EVA	N/cm	ASTM D 903	≥ 60	
9	MVTR	g/m²/day	ASTM F 1249	≤ 2	
10	CTI	V	IEC 60112	≥ 600	

Packing : Up to 200 meters per roll, 9 or 12 rolls per pallet
Storage Condition : To be stored in sealed packing at temperature ≤ 30° C & Humidity ≤ 60 %
Shelf life : Recommended to use within 24 months from the date of manufacture

The above properties are a typical range of properties and are not to be used for designing or establishing the limits of specification.

BackPro **ABS-KPE-T**

Alishan Back Sheet BackPro ABS-KPE-T is available for 1000 V and 1500 V system voltage with airside PVDF layer and cell side traditional PE layer. Its high transmittance and excellent UV resistance makes it suitable for highly reliable and efficient solar modules.

STRUCTURE DETAILS			ABS-KPE-T
LAYER NO	PARTICULARS	THICKNESS (μm)	
1	Air side transparent PVDF	25	
2	Adhesive	10	
3	Middle transparent PET	275	
4	Adhesive	10	
5	Cell side E layer	50	

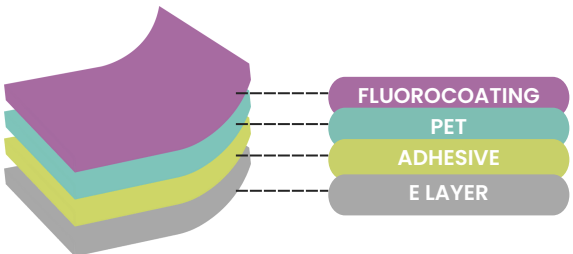
S. NO.	PROPERTIES	UOM	TEST METHOD	ABS-KPE-T (1500 V)	
1	Thickness	μm	Micrometer	370 ± 5 %	
2	Width	mm	Scale	Upto 1350	
3	Transmittance	%	ASTM E 424	>91	
4	Tensile Strength	MPa	ASTM D 882	MD	≥ 100
				TD	≥ 100
5	Elongation	%	ASTM D 882	MD	≥ 100
				TD	≥ 90
6	Thermal Shrinkage	%	150°C / 30 min	MD	≤1.0
				TD	≤1.0
7	Interlayer Adhesion	N/cm	ASTM D 903	PVDF-PET	≥4.0
8	Interlayer Adhesion	N/cm	ASTM D 903	PET-E layer	≥4.0
9	Adhesion with EVA	N/cm	ASTM D 903	≥ 60	
10	MVTR	g/m²/day	ASTM F 1249	≤ 2	
11	CTI	V	IEC 60112	≥ 600	

- Packing** : Up to 200 meters per roll, 9 or 12 rolls per pallet
- Storage Condition** : To be stored in sealed packing at temperature ≤ 30° C & Humidity ≤ 60 %
- Shelf life** : Recommended to use within 24 months from the date of manufacture

The above properties are a typical range of properties and are not to be used for designing or establishing the limits of specification.

BackPro **ABS-CPE-T**

Alishan Back Sheet BackPro ABS-CPE-T is available for 1000 V and 1500 V system voltage with airside Fluorocoating and cell side traditional PE layer. Its high transmittance and excellent UV resistance makes it suitable for highly reliable and efficient solar modules.

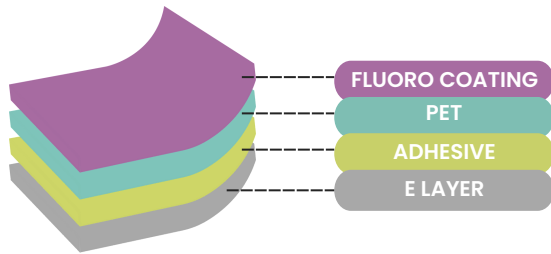
STRUCTURE DETAILS			ABS-CPE-T
LAYER NO	PARTICULARS	THICKNESS (μm)	
1	Air side Fluorocoating	15	
3	Middle transparent PET	285	
4	Adhesive	10	
5	Cell side E layer	50	

S. NO.	PROPERTIES	UOM	TEST METHOD	ABS-CPE-T (1500 V)	
1	Thickness	μm	Micrometer	360 ± 5 %	
2	Width	mm	Scale	Upto 1350	
3	Transmittance	%	ASTM E 424	>91	
4	Tensile Strength	MPa	ASTM D 882	MD	≥ 100
				TD	≥ 100
5	Elongation	%	ASTM D 882	MD	≥ 100
				TD	≥ 90
6	Thermal Shrinkage	%	150°C / 30 min	MD	≤1.0
				TD	≤1.0
7	Coating Adhesion	Grade	GB / T9286	Air Side	Grade 0
8	Interlayer Adhesion	N/cm	ASTM D 903	PET-E layer	≥4.0
9	Adhesion with EVA	N/cm	ASTM D 903	≥ 60	
10	MVTR	g/m²/day	ASTM F 1249	≤ 2	
11	CTI	V	IEC 60112	≥ 600	

- Packing** : Up to 200 meters per roll, 9 or 12 rolls per pallet
- Storage Condition** : To be stored in sealed packing at temperature ≤ 30° C & Humidity ≤ 60 %
- Shelf life** : Recommended to use within 24 months from the date of manufacture

The above properties are a typical range of properties and are not to be used for designing or establishing the limits of specification.

Alishan Backsheet BackPro ABS-CPE are available in both 1000 V & 1500 V system voltage. The backsheet comes with a proprietary coating layer on air side and traditional PE layer on cell side.

STRUCTURE DETAILS		ABS - CPE
LAYER NO.	PARTICULARS	
1	Air Side Fluoro Coating	
2	Middle PET Layer	
3	Adhesive	
4	Cell side E Layer	

S. NO.	PROPERTIES	UOM	TEST METHOD	ABS - CPE - 1000 V		ABS - CPE - 1500 V	
1	Thickness	μm	Micrometer	275 ± 5 %		360 (-10/+15)	
2	Width	mm	Scale	Up to 1350		Up to 1350	
3	Tensile Strength	MPa	ASTM D 882	MD	≥ 100	MD	≥ 100
				TD	≥ 100	TD	≥ 100
4	Elongation	%	ASTM D 882	MD	≥ 100	MD	≥ 100
				TD	≥ 90	TD	≥ 90
5	Thermal Shrinkage	%	150° C / 30 min	MD	≤ 1.0	MD	≤ 1.0
				TD	≤ 1.0	TD	≤ 1.0
6	Coating Adhesion	Grade	GB / T9286	Air Side	Grade 0	Air Side	Grade 0
7	Interlayer Adhesion	N/cm	ASTM D 903	PET-E-Layer		≥ 4.0	
8	Adhesion with EVA	N/cm	ASTM D 903	≥ 60		≥ 60	
9	MVTR	g/m ² /day	ASTM F 1249	≤ 2		≤ 2	
10	CTI	V	IEC 60112	≥ 600		≥ 600	

Packing	: Upto 200 meters per roll, 9 or 12 rolls per pallet
Storage Condition	: To be stored in sealed packing at temperature ≤ 30° C & Humidity ≤ 60 %
Shelf life	: Recommended to use within 24 months from the date of manufacture

The above properties are a typical range of properties and are not to be used for designing or establishing the limits of specification.

Alishan Back Sheet BackPro ABS-PPE is available with 1000 & 1500 V system voltage with airside HPET layer and traditional PE layer on cell side.

STRUCTURE DETAILS		ABS-PPE
LAYER NO	PARTICULARS	
1	Air side HPET layer	
2	Adhesive layer	
3	Middle PET layer	
4	Adhesive	
5	Cell side E layer	

S. NO.	PROPERTIES	UOM	TEST METHOD	ABS – PPE (1000 V)		ABS – PPE (1500 V)	
1	Thickness	µm	Micrometer	225 ± 5 %		370 (-10/+15)	
2	Width	mm	Scale	Up to 1350		Up to 1350	
3	Tensile Strength	MPa	ASTM D 882	MD	≥ 100	MD	≥ 100
				TD	≥ 100	TD	≥ 100
4	Elongation	%	ASTM D 882	MD	≥ 100	MD	≥ 100
				TD	≥ 90	TD	≥ 90
5	Thermal Shrinkage	%	150° C / 30 min	MD	≤ 1.0	MD	≤ 1.0
				TD	≤ 1.0	TD	≤ 1.0
6	Interlayer Adhesion	N/cm	ASTM D 903	HPET-PET	≥ 4	HPET-PET	≥ 4
		N/cm	ASTM D 903	PET-E Layer	≥ 4	PET-E Layer	≥ 4
7	Adhesion with EVA	N/cm	ASTM D 903	≥ 60		≥ 60	
8	MVTR	g/m ² /day	ASTM F 1249	< 2		< 2	
9	CTI	V	IEC 60112	> 600		> 600	

Packing : Up to 200 meters per roll, 9 or 12 rolls per pallet

Storage Condition : To be stored in sealed packing at temperature ≤ 30° C & Humidity ≤ 60 %

Shelf life : Recommended to use within 24 months from the date of manufacture

The above properties are a typical range of properties and are not to be used for designing or establishing the limits of specification.

LIGHTENING THE EXCEPTIONAL **PERFORMANCE**



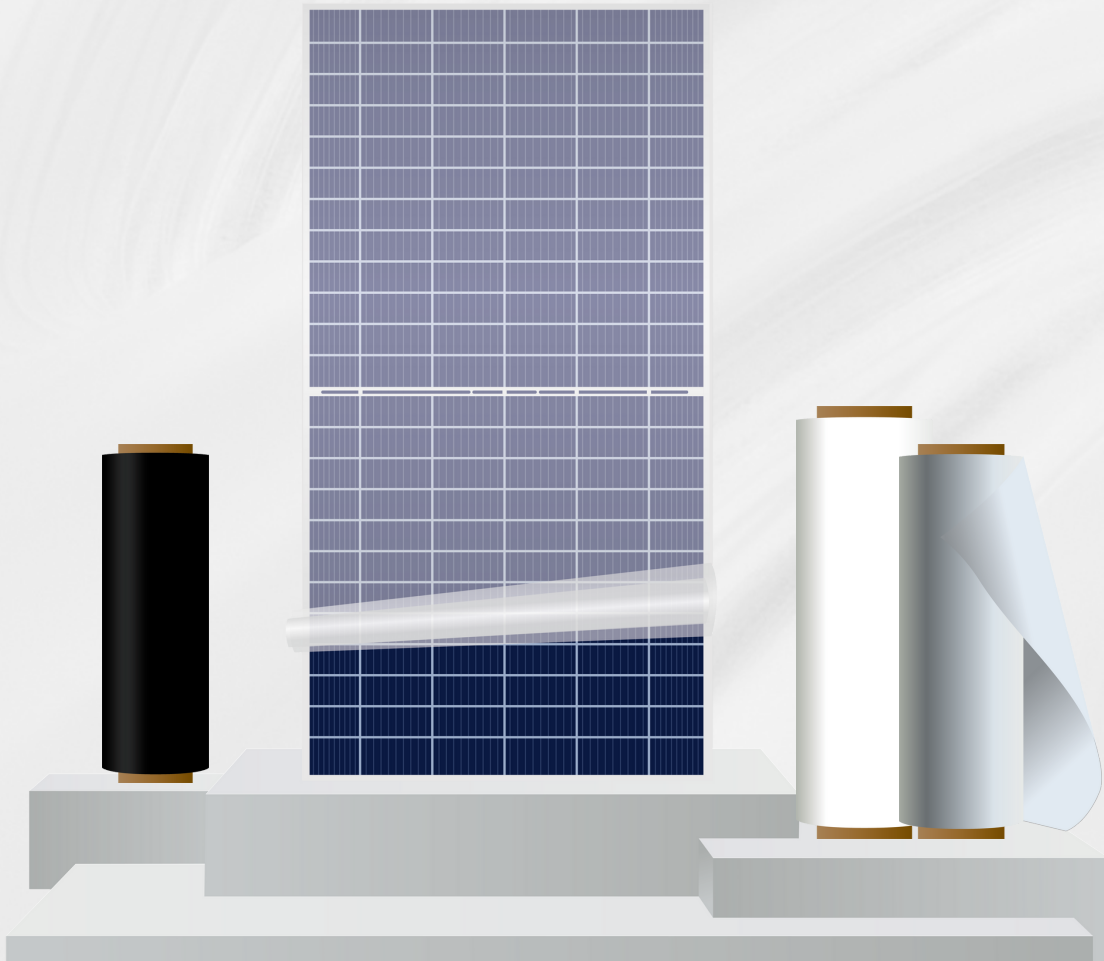
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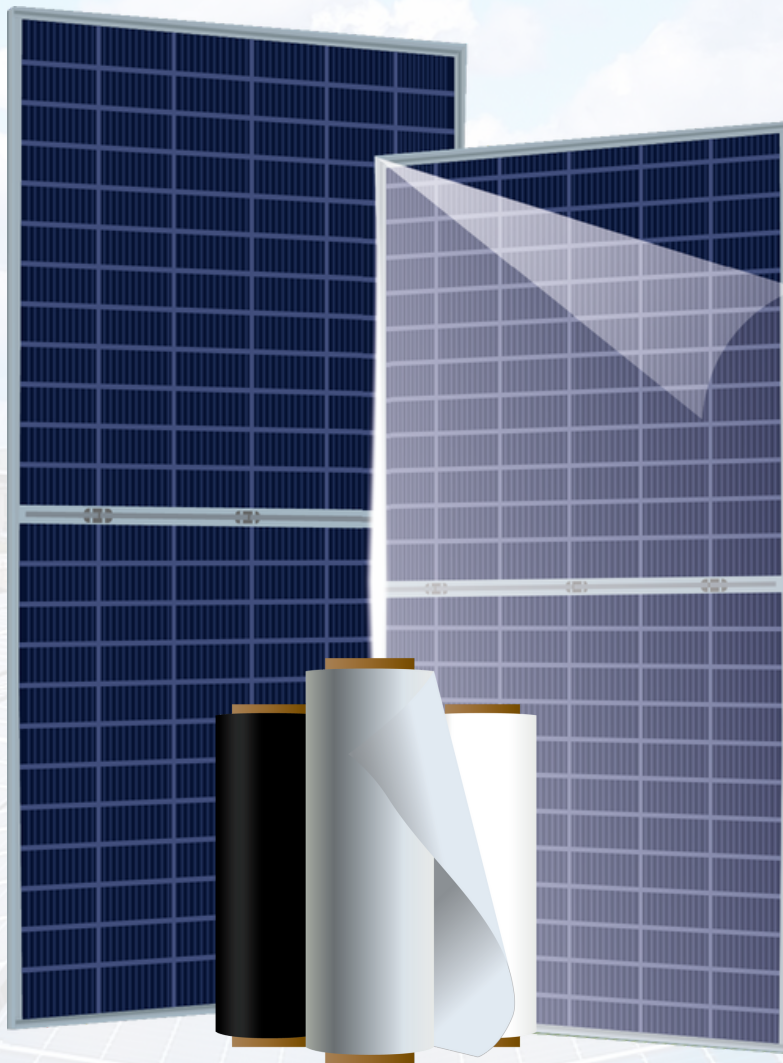


High Durability



Maximize Power Generation





REACH OUT TO US

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