

BACKSHEETS

For top performance.

FLUOROPOLYMER-BASED BACKSHEETS
FLUOROPOLYMER-FREE BACKSHEETS
FOR CRYSTALLINE MODULES
FOR THIN-FILM MODULES
FOR BACK SIDE CONTACTING
FOR BI-FACIAL CELLS



APPLICATION-BASED SOLUTIONS

- Quality from KREMPEL: Increase your efficiency and benefit from our services! The KREMPEL-GROUP is your innovative and flexible partner on the module market.
- Our wide range of products produced in Germany offer proven quality at competitive prices for all types of use.
- KREMPEL backsheets are suitable for use in all climate conditions, even those which are most extreme.
- With 30 years of experience, we can provide you with detailed advice on the optimum materials to choose.

KREMPEL backsheets...

- ✓ show **GOOD REFLECTIVITY** for a high yield
- ✓ are in line with **NEW IEC 61730** standard for 1,000 V and 1,500 V system voltages
- ✓ are **CERTIFIED IN ACCORDANCE WITH ISO 9001**, ISO TS 16949 (automotive), UL, TÜV / VDE, JET, CPVT
- ✓ have **PARTIAL DISCHARGE CERTIFICATE** in accordance with the current IEC for all products (> 1000 V measured in air)
- ✓ are **COMPATIBLE** with all standard encapsulants, also with higher light transmission EVAs
- ✓ have **ADDITIONAL ALUMINIUM FOIL** as a moisture barrier (High Barrier Film) for thin-film modules of all technological types



RANGE OF PRODUCTS

Fluoropolymer-based materials AKASOL® PTL & PVL

FOR CRYSTALLINE MODULES

- With TEDLAR® PVF or KYNAR® PVDF films
- Exterior protection and cell-side protection with TEDLAR® PVF or KYNAR® PVDF (TPT™ / KPK™)
- Alternative exterior protection with TEDLAR® PVF or KYNAR® PVDF and cell-side protection with durable UV stabilised primer (TPE / KPE)
- Hydrolytically stable core films providing safe and durable mechanical properties
- Transparent backsheet for BIPV and bi-facial cells
- Over 30 years of worldwide experience in the field

Fluoropolymer-free materials AKALIGHT ECS® & HBF

FOR CRYSTALLINE MODULES AND THIN-FILM MODULES

- With UV and hydrolytically stable PET film for safe exterior protection
- Hydrolytically stable core films providing safe and durable mechanical properties
- Cell-side protection through durable UV stabilised primer

Specialities

AKACON BCF® FOR BACK SIDE CONTACTING

A copper foil ensures optimal cell-side electrical contact. The innovative potential of this new technology increases the efficiency of PV modules.

AKASOL® INLAYS

In the colour of the backsheets for optical coverage and for additional insulation in thinner executions.

AKASOL® REPAIR TAPES

Covers minor damage. Cold processing on the finished module, damp/warm and temperature resistant following networking.

Technical Data Sheets

Comprehensive data sheets can be found on our website www.krempel-group.com.

“Technical Letters” are available for specific technical subjects, and we can also send them to you if required.

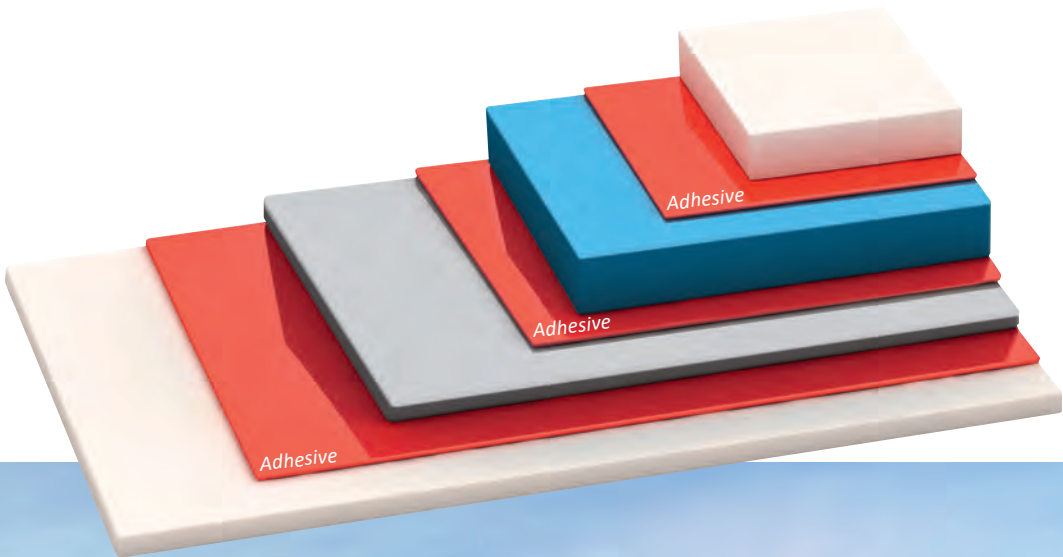


BACKSHEET STRUCTURE

Every KREMPEL backsheet is produced using a specific combination of films. Each film has a certain function within the combination to ensure that the material is suitable for the intended application.

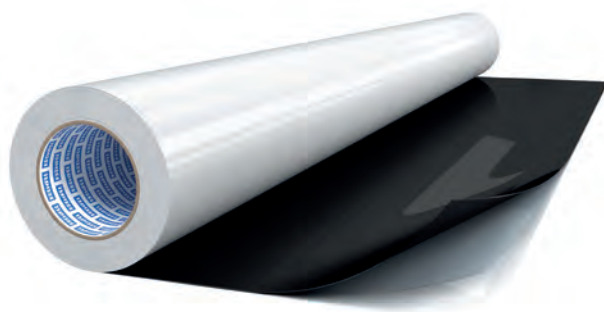
The films are laminated together using an adhesive – specially developed by KREMPEL for PV application. The diagram below shows the example of a 4-layer backsheet with an integrated aluminium foil for thin film modules.

	Outer side	Barrier	Inner layer	Cell side
PPE	Mod. PET	–	PET	Primer layer
TPE & KPE	PVF / PVDF	–	Mod. PET	Primer layer
HBF	Mod. PET	Alu	Mod. PET	Primer layer



DELIVERY FORMS

TPT™	white
KPK™	white / black
TPE	white / black / transparent
KPE	white / black
PPE	white / black
HBF	white / black



Rolls, cut to size and punched.

INTERNAL TESTING

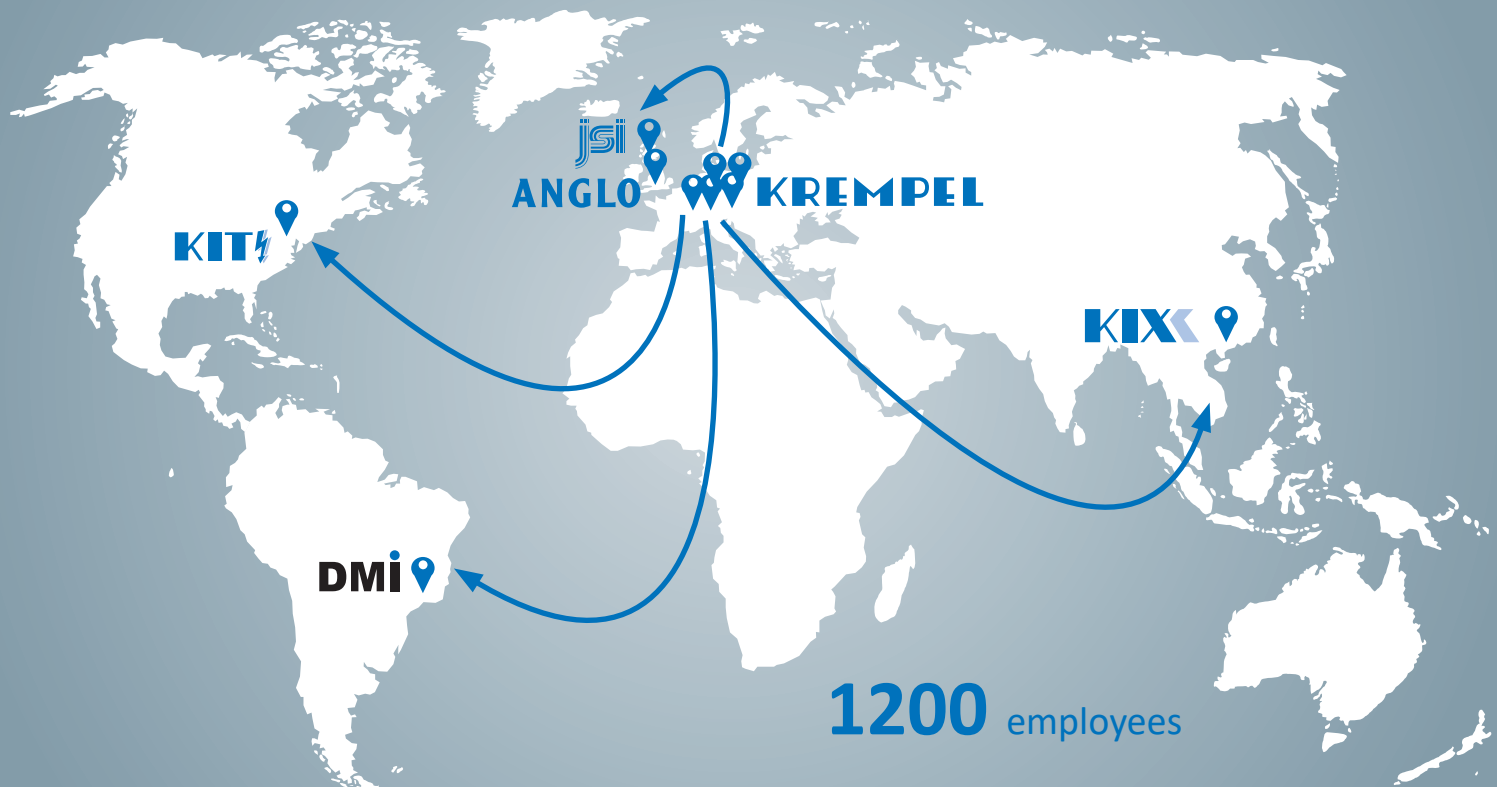
Tests / properties performed and evaluated at KREMPEL (standard, periodical, special tests).
Tests are done on pure backsheet and additionally on dummy modules:

- Climate Chamber / Damp Heat
- UV stability
- Peel strength / adhesion
- Dimensional stability
- DTI Distance (distance through insulation)
- Partial discharge
- CTI (comparative tracking index)
- RTI (relative thermal index)
- FSI (flame spread index)
- WVTR (water / vapour transmission rate)
- Reflectivity
- PCT (pressure cooker test)
- Ammonia resistance
- Chemical resistance
- Temperature cycle
- Humidity freeze
- Sand blast
- Weatherability
- Tensile strength
- Elongation
- Breakdown voltage



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1200 employees

67 Representatives worldwide

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