COVEME PHOTOVOLTAIC

Transparent backsheets and frontsheets for Bifacial and Flexible Modules
Coveme, headquartered in Italy, is a leading manufacturer of polymer laminates with 20 years supplying the PV industry. Today over 50 GW of solar panels installed worldwide are protected by Coveme’s dyMat® backsheets and frontsheets. The privately owned company has two production sites in Italy and China and three fully equipped research centres in Italy, Germany and China. Coveme’s 14 production lines are equipped with the latest technologies for coating, laminating, heat stabilizing, treating and customized cutting of polymeric films.

The company’s latest product development within the dyMat® range for the photovoltaic market are highly transparent monolayer and multilayer backsheets and frontsheets. They are specifically designed to offer a unique solution for manufacturers of bifacial and semi-flexible modules, as well as standard and thin film modules.

Thanks to their ultra-high transparency, lightweight and extra low vapour barrier dyMat® transparent backsheets and frontsheets are a valid alternative to glass. They feature an innovative and reliable coating that protects the module from scratches, abrasion, corrosion and UV thus enhancing the module durability and performance over time.

There are 1000 VDC and 1500 VDC versions for final applications in grid and off-grid installations on rooftop and commercial buildings, in utility plants, and special applications like BIPV, nautical and automotive.

Besides a guaranteed and certified product performance Coveme offers a number of green solutions that include recyclable materials as well as backsheets and frontsheets made of recycled polyester film (rPET).
Coveme offers high grade Polyester based and Tedlar® based transparent backsheets specifically developed to provide a lightweight alternative to glass on the backside of bifacial modules. The Pet based frontsheets with an innovative UV Coating are a highly performing solutions for semi-flexible and flexible pv modules.

**Functions**

- Strong UV coating
- Guaranteed durability
- High humidity resistance
- Electrical insulation up to 1500 VDC

**Added values**

- Specific primer and coatings for extra UV protection
- Strong abrasion and scratch resistance
- Excellent heat dissipation properties
- Lightweight
- Options for increased output
- Extended life time up to 30 years

**Green solutions**

Ecological product and service proposals for a sustainable industry

- Polyester 100% recyclable
- Pet components made of recycled Pet (rPET)
- Pet scrap recycling and converting

**Quality**

dyMat® products are certified by the world’s major certification bodies

- TÜV RHEINLAND CERTIFIED
- TÜV SUD CERTIFIED
- UL REGISTERED
**dyMat® CLEAR PET BACKSHEETS**

A new generation of transparent high grade polyester backsheets to be employed as an alternative to glass in Bifacial modules or in other module types for installations where transparency is required (eg. greenhouses). The polymers, primer and adhesives specifically developed for these products provide an extra high resistance to UV and humidity.

- **dyMat® Clr PYE Mono CX** is a monolayer product for 1000 VDC with UV protection all across the whole thickness thanks to its bulk technology.
- **dyMat® Clr HDPYE CX** is a double layer product for 1500 VDC with a thicker inner PET layer in order to comply with the new IEC rules for 1500V insulation and has a proven track record being employed in the world’s first bifacial 1500V installation.

**PRIMER TYPES:**
- LO: Extra UV protection on cell side
- LD: High humidity barrier
- LDO: High humidity barrier + UV protection

**OUTPUT INCREASING OPTIONS:**

**dyMat® Selective:***
Optional white grid incorporated in the backsheet that turns the space in between the cells and the borders into a highly reflective area for significant output improvement. The grid layout is defined according to customer’s cell shape and size.

**dyMat® HMirror LR:***
Optional reflective laminate that can be used for retro-fitting of Bifacial PV installations to increase the albedo value of ground reflectivity and therefore the final module output.
dyMat® CLEAR TEDLAR® BACKSHEETS

A new generation of transparent Tedlar® backsheets to be employed as an alternative to glass in Bifacial modules or in other module types for installations where transparency is required (eg. greenhouses). The primer and adhesives specifically developed for these products provide an extra high resistance to UV and humidity. Fluorinated coating as alternative to primer on cell side available. dyMat® Clr TsL 50/158 is a double layer product for 1000 VDC, whereas dyMat® Clr TsL 50/285 is a double layer product for 1500 VDC with a thicker inner PET layer in order to comply with the new IEC rules for 1500V insulation.

PRIMER TYPES:
- LO: Extra UV protection on cell side
- LD: High humidity barrier
- LDO: High humidity barrier + UV protection

Clr TsL 50/158

CLR UV PRIMER OR FLUORINATED COATING
PET
Hydrolysis Resistant (HR) Electrical Grade
TEDLAR® Clear

CLR UV PRIMER OR FLUORINATED COATING
PET
Hydrolysis Resistant (HR) Electrical Grade
TEDLAR® Clear

Output increasing options:

**dyMat® Selective:**
Optional white grid incorporated in the backsheet that turns the space in between the cells and the borders into a highly reflective area for significant output improvement. The grid layout is defined according to customer’s cell shape and size.

**dyMat® HMirror LR:**
Optional reflective laminate that can be used for retro-fitting of Bifacial PV installations to increase the albedo value of ground reflectivity and therefore the final module output.
dyMat® CLEAR PET FRONTSHEETS

dyMat® transparent frontsheets are the ideal solution to be employed instead of glass in lightweight flexible photovoltaics. They combine the properties of a co-extruded polyester film with those of a special UV coating applied in a high-tech EB curing production process. dyMat® frontsheets have been specifically developed to guarantee an extra high UV and hydrolysis resistance together with outstanding anti-scratch and anti-abrasion properties. dyMat® Clr FS PYE MONO CXG is a monolayer pet based product for 1000 VDC, whereas dyMat® Clr FS HDPYE CXG features a double layer pet for 1500VDC applications. Both products can be supplied with the UV coating in a matt anti-glare finish for output enhancement.

UV COATING PROPERTIES:
- UV resistance
- Anti-Scratch
- Anti-Abrasion

Clr FS PYE MONO CXG

1000 VDC

AIR SIDE

COATING UV
Anti-scratch
Anti-abrasion

PET COEX
Transparent PET
UV Stable
Hydrolysis Resistant

PRIMER

CELL SIDE

Clr FS HDPYE CXG

1500 VDC

AIR SIDE

COATING UV
Anti-scratch
Anti-abrasion

PET COEX
Transparent PET
UV Stable
Hydrolysis Resistant

PET

PRIMER

CELL SIDE
Coveme is certified ISO 9001 for quality management standards, ISO 14001 for environmental management and OHSAS 18001 for occupational health and safety.