

A better environment inside and out.™



# Solar Gard Photovoltaic

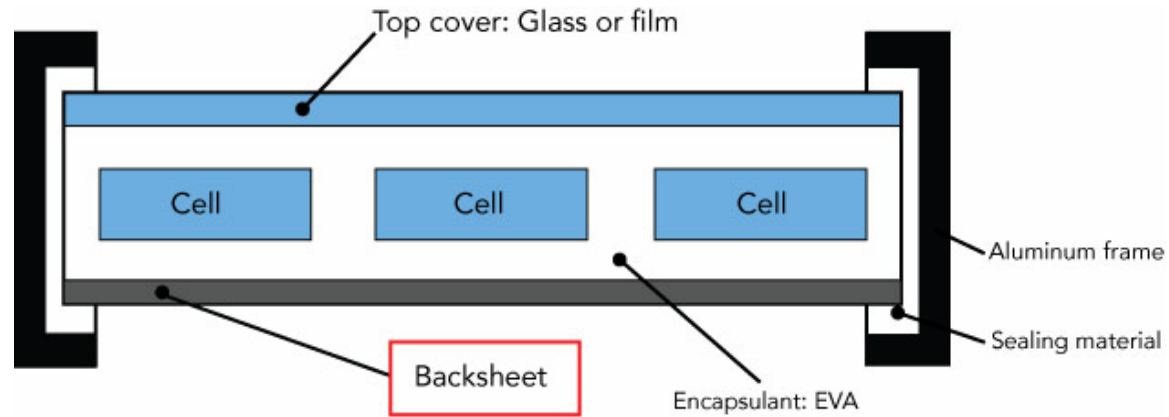
**Overview of Solar Gard PV Backsheets**  
**September 2009**

## Solar Gard PV T Series

- PVF/PET/PVF backsheets are used in approximately 70% of solar module products
  - Insufficient manufacturing capacity from current vendors has caused long delays in production
- Solar Gard has the manufacturing capacity to make a substantial difference for crystalline silicon PV manufacturers
  - Available capacity in US
  - 3 coating lines will produce > 4 million square meters per year (> 400 MW)
  - ISO 9001:2000 certified, ISO 14001:2004 certified, Class 10,000 clean room
- Solar Gard's relevant experience in solar products & thin films gives module manufacturers a credible new supplier

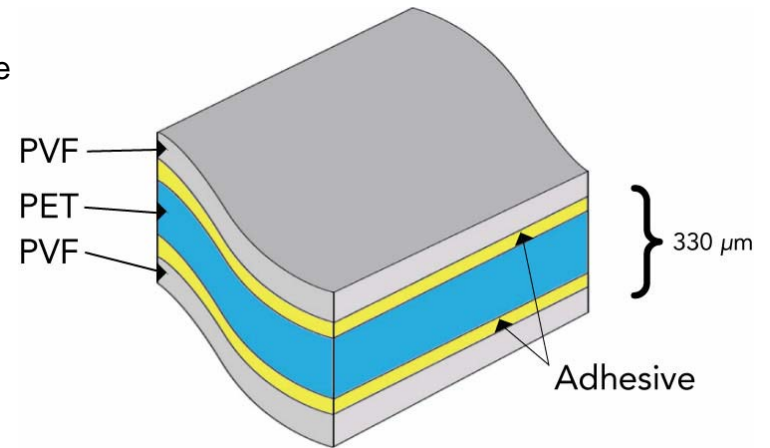
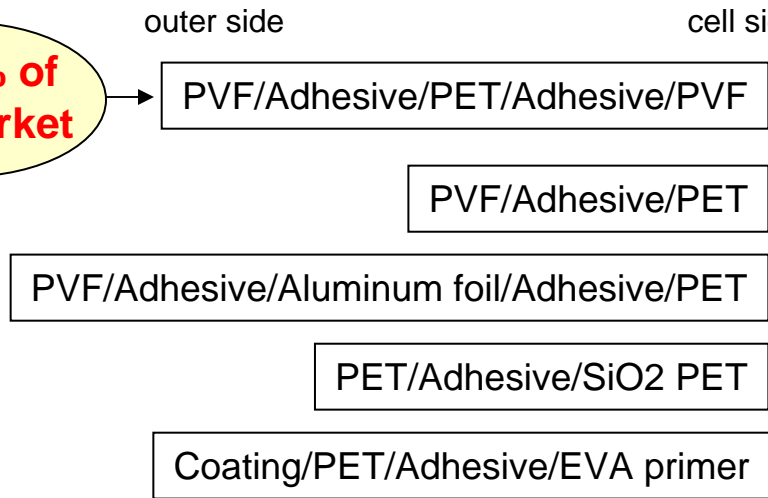
# Diagram of PV Backsheet

Simplified section view of solar cell module



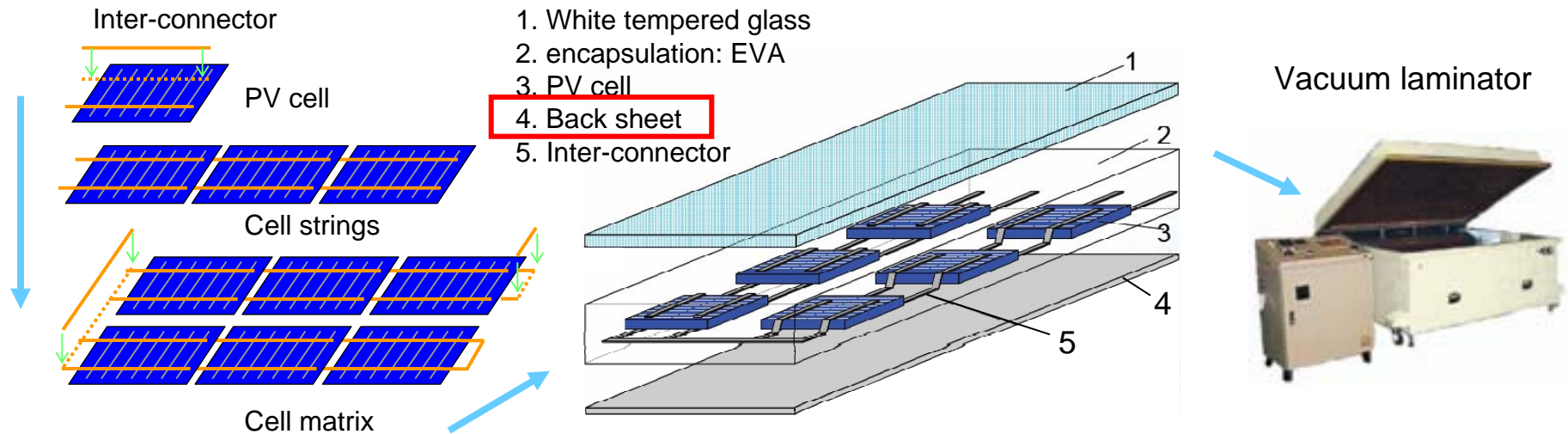
Example of back sheet construction

**+/- 70% of the market**



PVF: Poly-Vinyl Flouride

# PV Module Lamination Process



## Assembling superstrate module via vacuum lamination:

- Layer white tempered glass, EVA film, PV cell, EVA film and backsheet in vacuum laminator. The lower chamber is equipped with a heating plate, the upper chamber is pressurized to apply pressure to the laminates
- EVA foil is cured for several minutes at  $\approx 140^{\circ}$  C under pressure of several hundred mbar – 1 bar
- Controlled cooling of the modules takes place via fans or a cooling press

## Experience & Global Leadership

- Solar Gard is manufactured by Bekaert Specialty Films LLC in San Diego, CA
  - Thirty years in thin films and solar products
    - Expertise in sputtering, coating and lamination
  - Environmentally responsible manufacturing
    - Carbon footprint audited and published, Climate Action Leader designation
    - Supplier/Vendor for Clinton Climate Initiative
    - ISO 14001:2004 certified
- BSF is part of the Bekaert Group
  - Global manufacturer of PV-related products
    - Rotatable magnetron solutions = high-volume production, better cell performance and lower TCO
    - Sawing wire to cut silicon PV cell
  - Bekaert Group = Global leader in advanced metal transformation, materials and coatings and drawn wire products
    - 23,000 employees, operations in 120 countries and gross revenues of €4B

## Contact

- Product inquiries and orders:
  - Bekaert Specialty Films Industrial Team
    - [www.bekaertfilms.com/Industrial\\_Films](http://www.bekaertfilms.com/Industrial_Films)
    - +1 858 614 1206
    - +81 3 5542 7772
  
- Media inquiries:
  - Matter Communications
    - +978 499 9250 x 291
    - [bsf@matternow.com](mailto:bsf@matternow.com)