FLEXOSKIN® - Front Barrier Film for Flexible Solar Modules
BL – High Performance Polymers

Introduction

• Transparency
• Barrier
• Weatherability

These are the most important properties a front sheet should provide for flexible thin-film photovoltaics.

With FLEXOSKIN®, Evonik presents a new barrier film for flexible solar modules.

FLEXOSKIN® provides properties by material combination

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion to EVA-fc (N/cm)</td>
<td>20</td>
</tr>
<tr>
<td>Partial discharge voltage (V)</td>
<td>&gt; 1000</td>
</tr>
<tr>
<td>Film thickness (µm)</td>
<td>300 – 350</td>
</tr>
<tr>
<td>Film width (mm)</td>
<td>300 – 1200</td>
</tr>
</tbody>
</table>

Barrier Properties of FLEXOSKIN®

Target: 0.0001 g/(m² d)

- WVTR g/(m² d) @ 38°C, 85 % r.h.
- stable for 1000 hrs, test continued up to + 3000 hrs

FLEXOSKIN® provides excellent Scratch Resistance

Perfect Transparency of PMMA for Solar Cells

Perfect UV protection for the encapsulating material and other polymers in the module.

Barrier properties of polymers

The polymer film has to fulfill special requirements

Barrier requirements

Transparency requirements

Mechanical Properties remain after Aging

Further Properties of FLEXOSKIN®

Solar module testing according to IEC 61646 - in progress

Summary & Future Work

• FLEXOSKIN® provides properties necessary for flexible PV
• FLEXOSKIN® combines weatherability, transparency and barrier
• Long term durability tests are ongoing
• Module Testing is running with FLEXOSKIN®

This poster contains no confidential information