

Partial Discharge Test

on reverse side foils of PV modules
according to IEC 60664-1, IEC61730

23. August 2006

Company / Examined foil:

Madico, Inc.		
Foil 10: APE reg/PET/EVA		
Aluminium	17.5 micron	outside
PET	75 micron	
EVA	100 micron	cell side

* The EVA is not part of the directly encapsulation of the PV cells

Number of measurements: 10

Remarks: Examinee no. 5; intermittent extinction voltage

Extinction voltage		Deviation from the mean value (%)
Min. value in (V)	824	-8,4
Mean value in (V)	900	
Max. value in (V)	947	5,2

The mean value minus the experimental standard deviation will be used to calculate the max. permissible voltage.

Experimental standard deviation: 33 V

Calculation of the max. permissible operating voltage on the basis of the ascertain values

Basis: IEC 60664-1

$$U_{max} = U_e \times 1,414 / 1,2 \times 1,25$$

- 1,414 Calculation of the peak value
- 1,2 Safety factor (humidity, temperature, etc.)
- 1,25 Safety factor (double or reinforced insul.)

Maximum permissible system voltage	820 VDC
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Testzentrum Energietechnik



Regenerative Energien

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