

Partial Discharge Test on reverse side foils of PV modules according to IEC 60664-1

15 July 2004

Company / Examined foil:

MADICO, Inc.

Madico TPE HD w/w	(0.275mm)	
Tedlar (PVF)	38 my	out side
LamAd	6 my	
Polyester (PET)	125 my	
LamAd	6 my	
EVA	100 my	cell side

Number of measurements: 10

Extinction voltage

Min. value in (V)	1057
Mean value in (V)	1120
Max. value in (V)	1188

Deviation from the mean value (%)

5,6
6,1

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

Experimental standard deviation: 38 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	1020 VDC
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