



# TS IEC 62804-1:2015

Photovoltaic (PV) Modules - Test Methods for the detection of potential-induced degradation

Part 1: Crystalline silicone  
Confirmation of test results

**Ref.:** 10056/2017-40205

**Applicant:** SolarWorld Americas, Inc.  
25300 NW Evergreen Rd, Hillsboro OR 97124, USA

**Product:** Crystalline silicon Photovoltaic (PV)-Modules

**Type:**

- A) Sunmodule Plus SWA XXX mono Y
- A) Sunmodule Plus SWA XXX poly Y
- B) Sunmodule SWA XXX XL mono Y
- B) Sunmodule SWA XXX XL poly Y
- C) Sunmodule Protect SWA XXX mono Y
- C) Sunmodule Protect SWA XXX poly Y

XXX in the type replaces the power in watt and can be any number between:

200 – 320 for A); C), 260 – 360 for B),

Y in the type replaces a potential suffix and can be black or clear.

**Manufacturer:** SolarWorld Americas Inc.

**Standard:** TS IEC 62804-1:2015

## Test conditions

Testing time: 96 h

Chamber temperature: 60°C

Relative Humidity: 85 %

Potential to ground: - 1000 V

## Pass criteria

Power degradation: < 5%

Dry Insulation: > 40 MΩm<sup>2</sup>

Wet insulation: > 40 MΩm<sup>2</sup>



### Summary of test results:

<b>Maximum power degradation:</b>	allowed	max. 5 %
	measured	max. 2.75 %

The measured degradation is below the allowed degradation.

<b>Dry insulation resistance:</b>	required	23.81 M $\Omega$
	measured	>500 M $\Omega$

The measured dry insulation resistance is above the limit.

<b>Wet insulation resistance:</b>	required	23.81 M $\Omega$
	measured	>500 M $\Omega$

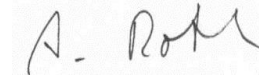
The measured wet insulation resistance is above the limit.

**Visual inspection:** No findings

The complete test results and the relevant bill of materials are given in Test Report No.: TRPVM-2017-40205-1.

### VDE Renewables GmbH

  
Thomas Hartmann

  
Arnd Roth

63755 Alzenau, 2017-08-02