



SOLARWORLD AMERICAS INC.

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Website: solarworld.com

September 23, 2015

To whom it may concern,

American Polywater Corporation's Polywater® Solar Panel Wash SPW™ has been tested with SolarWorld photovoltaic solar modules under the accelerated test procedure outlined below.

Test Duration:

May 1 to May 14, 2015

Test Set-Up

Two new SolarWorld panels were provided to American Polywater and installed at a 45-degree angle on a south facing wall at their factory location in Stillwater, MN.

To simulate precipitation and soiling the modules were sprayed for 15 minutes daily at 3 am with standard ground water. The ground water conductivity was measured at 95  $\mu$ S and a water hardness of 67 parts per million (ppm).

Test Methodology

1. Monday: Between 8 and 10 am each panel was rinsed with a 25:1 solution of Solar Panel Wash SPW and water. The panels were then scrubbed with a soft nylon bristle brush and then rinsed with the same 25:1 solution of Solar Panel Wash SPW and allowed to air dry without any additional rinse.
2. Tuesday – Friday: Between 8 and 10 am each day the panels were rinsed with the 25:1 solution of SPW and allowed to air dry.
3. Saturday – Sunday: The panels were not cleaned over the weekends but were sprayed for 15 minutes at 3 am each day.
4. This process was run for a total of two weeks from May 1 to May 14

Results

The modules were returned to SolarWorld Americas and retested; their post-test performance was compared to their original manufactured performance. Polywater® Solar Panel Wash SPW™ did not have any appreciable effect on the module performance, antireflective glass coating or frame anodized coating.



### Conclusion

When used as directed by American Polywater their Solar Panel Wash SPW™ is not an exclusion to the standard SolarWorld warranty. Care must be taken when cleaning solar panels. When cleaning solar modules with water or Solar Panel Wash SPW™ a soft bristle brush must be used and the modules should only be cleaned when they are cool; failure to do so may damage the module. Furthermore SolarWorld's performance and limited product warranty are never void but we do retain the right to deny claims based on the exclusions within the guarantee and limited product warranty document at the time of purchase.

Sincerely,

A handwritten signature in blue ink that reads "Eric Olson". The signature is fluid and cursive.

Eric Olson  
Product Manager – Modules  
SolarWorld Americas, Inc.

**NO:** TS20168267  
**Date:** November 22, 2016  
**To:** Christine Otam  
American Polywater Corporation  
[christine@polywater.com](mailto:christine@polywater.com)  
11222 60th Street North, Stillwater, MN 55082-9310 USA

**Subject: Confirmation letter for usage of SPW to clean module**

Dear Christine,

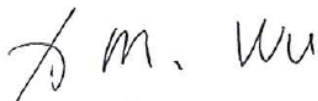
Thank you for your inquiry about our products. Canadian Solar modules have been certified in accordance with CSA certification body.

Canadian Solar hereby confirms that usage of American polywater's Solar Panel Wash (SPW) is approved for Canadian Solar's module cleaning. Canadian Solar suggests the module should be washed again using water after the usage of American polywater.

Please refer to CSI Installation Manual for the maintenance methods. Damages induced by inappropriate cleaning procedures will void Canadian Solar warranty.

Appendix 1: SPW Supplement 2016  
Appendix 2: SPW use instructions 10-19-2016  
Appendix 3: LIT-SPWTECHSPEC 2016

Sincerely,



Ximei Wu  
Manager of Global Sales Technical Support  
Email: [ximei.wu@canadiansolar.com](mailto:ximei.wu@canadiansolar.com)

# NOARK 诺雅克

Date: 24 December 2016

Subject: Confirmation Letter for Usage of SPW to clean Solar Panel Modules

To Whom it May Concern,

Noark-Electric Shanghai Co. Ltd (Noark) hereby confirms that usage of American Polywater's Solar Panel Wash (SPW) is approved for our Noark module cleaning. Noark suggests that the modules be rinsed again using water after the usage of American Polywater's SPW.

Please refer Noark's Installation and Maintenance Methods Manual for proper cleaning procedures. Damages induced by inappropriate cleaning procedures will void Noark warranty.

Sincerely:



William Li

Electric Department Design Manager

[William.li@noark-electric.com.cn](mailto:William.li@noark-electric.com.cn)

Noark-Electric Shanghai Co. Ltd.

No. 3857 Sixian Road, Songjiang District, Shanghai, China



Date: 29 December 2016

Subject: Confirmation Letter for Usage of SPW to clean Solar Panel Modules

To Whom it May Concern,

Beijing Sixvan Intelligent Systems Technology Co.Ltd.(Sixvan) hereby confirms that usage of American Polywater's Solar Panel Wash (SPW) is approved for our company solar module cleaning. Sixvan suggests that the modules be rinsed again using water after the usage of American Polywater's SPW.

Please refer to Sixvan Installation and Maintenance Methods Manual for proper cleaning procedures. Damages induced by inappropriate cleaning procedures will void Sixvan warranty.

Sincerely:



Manager-Purchasing Department

independenceday@qq.com

Beijing Sixvan Intelligent Systems Technology Co.Ltd.

509 D# Changping road 97 changping district beijing China



Date: 29 December 2016

Subject: Confirmation Letter for Usage of SPW to clean Solar Panel Modules

To Whom it May Concern,

Shanghai JA Solar Technology Co. Ltd. (JA Solar) hereby confirms that usage of American Polywater's Solar Panel Wash (SPW) is approved for our company solar module cleaning. JA Solar suggests that the modules be rinsed again using water after the usage of American Polywater's SPW.

Please refer to JA Solar Installation and Maintenance Methods Manual for proper cleaning procedures. Damages induced by inappropriate cleaning procedures will void JA Solar warranty.

Sincerely:

A handwritten signature in black ink, consisting of three Chinese characters: 钱克修 (Qian Kexiu).

Kexiu.Qian

Manager-Purchasing Department

Kexiu.qian@jasolar.com

Shanghai JASolar Technology Co. Ltd.

36 Jiangchang Three Road, Zhebei District, Shanghai, China