

IAPMO R&T Lab

The H2O Concepts International Concept 2000 has been tested by IAPMO R&T Lab and proven effective for scale prevention and/or reduction according to paragraph 6.5 of IGC 91.

Who is IAPMO R&T?

IAPMO R&T Lab is a major source for Independent testing, research and technical services. The organization specializes in plumbing and mechanical products. The goal of the organization is to provide quality testing services at a reasonable price and in a timely manner. *One-Stop-Testing* is available for manufacturers, distributors and importers to conduct testing and receive product listing / certification in the **United States and Canada.**

What is paragraph 6.5 of the IGC 91?

Paragraph 6.5 of the IGC 91

6.5 Recirculation Test

6.5.1

Fill a clean holding tank with 100 gallons of potable water containing at least 15 grains of CaCO₃ per gallon. Using a pump with a flow capacity of at least 4 gallons per minute, pump such water through the operating appliance followed by a 10 micron pleated sediment filter and return such water to the holding tank. Continue re-circulating such water through the appliance and filter for 10 days.

6.5.2

Performance Requirements. Following 10 days of continuous re-circulation, turn off the pump, remove the sediment filter and allow it to air dry. Once the sediment filter is dry, collect the sediment which has been collected from the filter, place a sample of the sediment in a glass dish and apply a solution of muriatic acid. The sample of sediment shall react to the muriatic acid, indicating the presence of CO₃ in the sample. 6.5.3 Concurrent with the test described in Section 7.5.1 in this standard, duplicate the test without the appliance in the recirculation loop. Test any sediment, which may have been collected in the filter. There shall be no reaction to the muriatic acid, indicating an absence of filterable CaCO₃.

TEST REPORT



Telephone: 909.472.4100 • Fax: 909.472.4243 • Web: www.iapmo.org
5001 East Philadelphia Street • Ontario, California 91761-2816 – USA

Report Number: 945-07001

Report Issued: April 17, 2007 **IAPMI R&T Lab Project No.:** 13670

Client: H2O Concepts International, Inc.
1518 Knudsen Drive, Suite 100
Phoenix, AZ 85027

Source of Samples: The samples were sent to IAPMO Testing and Services, LLC by H2O Concepts International, Inc. The sample was received on January 29, 2007 in good condition.

Date of Testing: March 1 to March 12, 2007

Sample Description: H2O Concept 2000, Model WT5, residential de-scaling unit.

Scope of Testing: The purpose of testing was to determine if the samples tested of the H2O Concept 2000, Model WT5 Residential de-scaling unit complied with IGC 91 - 2006 section 6.5.

Conclusion: **The sample tested of the H2O Concept 2000, Model WT5 COMPLIED with IGC 91 – 2006, section 6.5**

By our signatures below we certify that all the testing and sample preparation for this report was performed under continuous, direct supervision of IAPMO Testing and Services, LLC.

Tested by,

A handwritten signature in blue ink, appearing to be "David Williams".

David Williams, Technician

Reviewed by,

A handwritten signature in blue ink, appearing to be "Michael N. Briggs".

Michael N. Briggs, Manager, Analytical Lab

Primary Standards: IGC 91-2004, sections 6.5.

Findings:

Section 7.5 Recirculation test.

Complied. Water with a hardness of at least 130 ppm was recirculated through the through 2 individual systems for 10 days. System 1 contained the H2O Concept 2000 Model WT5 de-scaling unit, system 2 contained a section of pipe in place of the water conditioner. After 10 days the system was disassembled and the filter allowed to dry. The filter in system 2 contained no sediment. The pipe system of system 2 showed no sign of deposits. The filter in system 1 contained sediment. The residue was exposed to dilute muratic acid. Considerable effervescence was observed in the muratic acid solution which indicated the presence of CaCO_3 .

TEST REPORT



Telephone: 909.472.4100 • Fax: 909.472.4243 • Web: www.iapmo.org
5001 East Philadelphia Street • Ontario, California 91761-2816 - USA

Report Number: 945-07003
Report Issued: August 10, 2007 **IAPMO R&T LAB:** 13670-A
Client: Phoenix/H2O Concepts International Inc.
1518 Knudsen Drive Suite 100
Phoenix, AZ 85027 **Contact:** Dave Parke

Source of Samples: The samples were sent to IAPMO R&T LAB by Phoenix/H2O Concepts International Inc. The sample was received on June 13, 2005 in good condition.

Date of Testing: June 2007 to August 3, 2007

Sample Description: Anti Scaling device H2O Concepts Model: WT5 without filtration. The unit consisted of:
A PVC pipe housing with a metallic inner tubular pipe.
1" union joint inlet and outlet.
A descaler controller system with a 120V, 50/60 Hz, 20 gpm, 100 psi rating.

Scope of Testing: The purpose of testing was to determine if the sample tested of the anti scaling device Model: WT5-Residential D-Scaling Unit IGC 91-2005.

Conclusion: The sample tested of Residential D-Scaling Unit Model: Residential D-Scaling Unit Water Conditioner **COMPLIED** with applicable requirements of IGC 91-2005, except for sections 5.1, 5.5, 5.7, 5.10, 5.14, 5.16, 7.1.1.

By our signatures below we certify that all the testing and sample preparation for this report was performed under continuous, direct supervision of IAPMO R&T LAB.

Tested By,

Reviewed by,

Handwritten signature of Jeffrey Yu in black ink.

Jeffrey Yu, Test Engineer

Handwritten signature of Michael N. Briggs in black ink.

Michael N. Briggs, Manager, Analytical Lab

JY:MNB

Section 6.1.1 – Leakage Test. The assembled test unit was filled with water and pressurized to 160 psi at $73 \pm 5^\circ \text{F}$ for fifteen (15) minutes.

Complied – No leakage found.

Section 6.2.1 – Voltage Test. Electrical current was measured in the test sample with water flowing and not flowing.

Complied – No electrical current observed in test system when water is not flowing through the unit. With water flowing, a current of 220 mA AC was observed.

Section 6.3.1 – Pressure Loss Test. The maximum pressure drop at 10 gpm shall not exceed 1 psi for this appliance.

Complied – At flow of 10 gpm, $P_{in} = 16.2 \text{ psi}$, $P_{out} = 16.0 \text{ psi}$. Pressure drop = 0.2 psi.

Section 6.4.2 - ORP Test. The unconditioned or control sample of water shall have a millivolt reading of at least 20% higher than the conditioned sample.

Complied - The unconditioned sample was 28% higher than the conditioned sample.

Section 6.5.3 – Recirculation Test Water was recirculated through the unit for 10 days with the anti scale unit operating. At the end of 10 days the filter was examined for sediment that effervesces in weak muratic acid as an indication of calcium carbonate. Testing shall be conducted using the appliance in the recirculation loop and also without the appliance in the recirculation loop. The sample of sediment from the appliance with the recirculation loop shall react to the muriatic acid, indicating the presence of CO_3 in the sample. The sample of sediment from the appliance without the recirculation loop shall not react with the muriatic acid, indicating an absence of CO_3 .

Complied – Water with a hardness of at least 130 ppm was recirculated through the through 2 individual systems for 10 days. System 1 contained the H2O Concept Impulse 3000 de-scaling unit, system 2 contained a section of pipe in place of the water conditioner. After 10 days the system was disassembled and the filter allowed to dry. The filter in system 2 contained no sediment. The pipe system of system 2 showed no sign of deposits. The filter in system 1 contained sediment. The residue was exposed to dilute muratic acid. Considerable effervescence was observed in the muratic acid solution which indicated the presence of CaCO_3 .

Section 7.1 - Marking

Complied – Manufacturer's name and model were marked on the control unit and the unit. Size marked on fittings

Section 7.1.1 – Label shall comply with UL 969

Pending – No documents provided on the label.