

IAPMO/ANSI Z601-2018

Scale Reduction Devices



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Preface

This is the first edition of IAPMO/ANSI Z601, *Scale Reduction Devices*. This Standard supersedes IAPMO IGC 91-2009, *Electrical or High Density Magnetic Anti-Scale or Water Conditioning Appliance*.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was developed by the IAPMO Z601 Technical Subcommittee and approved by the IAPMO Plumbing Standards Committee in accordance with the *ANSI Essential Requirements: Due process requirements for American National Standards* and the *IAPMO Policies and Procedures for Consensus Development of American National Standards*. This Standard was approved as an American National Standard on July 11, 2018.

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IAPMO/ANSI Z601-2018

Scale Reduction Devices

0 Introduction

0.1

Although several alternatives to ion-exchange water treatment devices have the potential to offer solutions to consumers' need for scale reduction, lack of an appropriate test protocol that can be used to certify their effectiveness has slowed their adoption.

0.2

This Standard is written to enable testing of devices that have the potential to reduce encrusted scale in water in residential and similar applications and associated plumbing. To encourage competition among manufacturers for the benefit of consumers, the definition of a "device" has been intentionally left open so that any appropriate means and methods with the effect of reducing scale can be tested for their effectiveness. This approach makes it possible to test a variety of devices.

Note: *Standardized tests cannot represent all types of water in all situations.*

Note: *Synthetic water is used for testing and actual results may vary.*

0.3

The test protocol is summarized as follows:

- (a) First, the four-station test apparatus is tested without any test specimens, to establish the similarity of scale production in each station (i.e., the calibration test).
- (b) Next, the test specimens are conditioned for testing.
- (c) Following conditioning, two test specimens are connected to two of the four stations and tested for 10 d, simulating the use in a household, using water with a hardness of 450 ± 50 mg/L (26 ± 3 gr/gal) and natural elements that would be present in most tap waters.
- (d) Finally, the scale produced in the two test stations is compared to the scale produced in the two control (untreated) stations. The scale produced must be less than 30% of the scale produced in the control (untreated) stations for acceptance. In addition, to validate the test each time it is run, the scale produced in the control (untreated) stations is compared to the scale produced in the original four-station calibration test conducted to validate the similarity of their scale production at the beginning.

Note: *The test protocol includes a procedure to evaluate test specimens that affect the scale production of all four stations.*

0.4

In addition to the performance test, this Standard also requires that scale reduction devices be tested for structural integrity and material safety in accordance with either NSF/ANSI 42 or NSF/ANSI 61.