

**IAPMO PS 76-**  
**~~2012a~~2021**



**PUBLIC REVIEW DRAFT**

*Industry Standard for*

**Trap Primers for Fill Valves and  
Flushometer Valves**



**IAPMO PS 76-2012a**

**Trap Primers for Fill Valves and Flushometer Valves**

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# Preface

This is the fifth edition of IAPMO PS 76, Trap Primers for Fill Valves and Flushometer Valves. This Standard supersedes IAPMO PS 76-2012, Trap Primers for Fill Valves and Flushometer Valves. The previous editions of this standard are: 1995, June 2011, July 2012, September 2012

This Standard was developed by the IAPMO Standards Review Committee (SRC) in accordance with the policies and procedures regulating IAPMO industry standards development, Policy S-001, Standards Development Process. This Standard was approved as an IAPMO Industry Standard on **Month DD, YYYY**.

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- (4) During its development, this Standard was made available for public review, thus providing an opportunity for additional input from stakeholders from industry, academia, regulatory agencies, and the public at large. Upon closing of public review, all comments received were duly considered and resolved by the IAPMO Standards Review Committee.*
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  - (b) relevant section, table, or figure number, as applicable;*
  - (c) wording of the proposed change, tracking the changes between the original and the proposed wording; and*
  - (d) rationale for the change.**
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  - (a) the edition of the standard for which the interpretation is being requested;*
  - (b) the definition of the problem, making reference to the specific section and, when appropriate, an illustrative sketch explaining the question;*
  - (c) an explanation of circumstances surrounding the actual field conditions; and*
  - (d) the request for interpretation phrased in such a way that a "yes" or "no" answer will address the issue.**
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(12) Proposals for amendments to this Standard will be processed in accordance with the standards-writing procedures of IAPMO industry standards development, Policy S-001, Standards Development Process.

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<u>T. Collings</u>	<u>Building Services &amp; Licensing - Retired</u> <u>Salt Lake City, Utah, USA</u>	<u>Chair</u>
<u>M. Durfee</u>	<u>Chief Building Official - Retired</u> <u>Saratoga Springs, Utah, USA</u>	<u>Vice-Chair</u>
<u>M. Antonacci</u>	<u>Plumbing and HVAC Inspector, City of Toronto</u> <u>Toronto, Ontario, CAN</u>	
<u>R. Coffman</u>	<u>Plumbing Inspector, City of Cedar Falls - Retired</u> <u>Cedar Falls, Iowa, USA</u>	
<u>C. Crimmins</u>	<u>MN State Pipe Trades - Retired</u> <u>Champlin, Minnesota, USA</u>	
<u>J. Krahenbuhl</u>	<u>Plumbing and Mechanical Plans Check Specialist, Clark County - Retired</u> <u>Henderson, Nevada, USA</u>	
<u>B. Olinger</u>	<u>William Myers &amp; Sons Inc. - Semi-Retired</u> <u>East Hanover, New Jersey, USA</u>	
<u>S. Peters</u>	<u>Plumbing &amp; Mechanical Plans Examiner</u> <u>Santa Monica, California, USA</u>	
<u>B. Pfeiffer</u>	<u>Plumbing Inspector Development Services, City of Topeka - Retired</u> <u>Topeka, Kansas, USA</u>	
<u>R. Rice</u>	<u>Sr. Mechanical Inspector - Retired</u> <u>Maplewood, Minnesota, USA</u>	
<u>G. Snider</u>	<u>Plumbing Section Supervisor, City of Surrey</u> <u>Surrey, British Columbia, CAN</u>	
<u>K. Thompson</u>	<u>IAPMO</u> <u>Ontario, California, USA</u>	<u>Staff Liaison</u>
<u>G. Istefan</u>	<u>IAPMO</u> <u>Ontario, California, USA</u>	<u>Staff Liaison</u>
<u>H. Aguilar</u>	<u>IAPMO</u> <u>Ontario, California, USA</u>	<u>Secretary</u>

# IAPMO PS 76-~~2012a~~2021

## Trap Primers for Fill Valves and Flushometer Valves

### 1 Scope

#### 1.1 Scope

This Standard covers trap primers for fill valves and flushometer valves and trap primer adapters and specifies requirements for materials, physical characteristics, performance testing, and markings.

#### 1.2 Alternative Materials

The requirements of this Standard are not intended to prevent the use of alternate materials or methods of construction provided such alternates meet the intent of this Standard.

~~1.3 — Proposals for amendments to this Standard will be processed in accordance with the standards writing procedures of IAPMO.~~

~~1.4 — The user's attention is called to the possibility that compliance with this Standard may require use of an invention covered by patent rights. By publication of this Standard, no position is taken with respect to the validity of any such claim(s) or of any patent rights in connection therewith. If a patent holder has filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, then details can be obtained from IAPMO.~~

#### 1.3 Terminology

In this Standard,

- (a) "shall" is used to express a requirement, i.e., a provision that the user is obliged to satisfy to comply with the Standard;
- (b) "should" is used to express a recommendation, but not a requirement;
- (c) "may" is used to express an option or something permissible within the scope of the Standard; and
- (d) "can" is used to express a possibility or a capability.

Notes accompanying sections of the Standard do not specify requirements or alternative requirements; their purpose is to separate explanatory or informative material from the text. Notes to tables and figures are considered part of the table or figure and can be written as requirements.

#### 1.4 Units of Measurement

SI units are the primary units of record in global commerce. In this Standard, the inch/pound units are shown in parentheses. The values stated in each measurement system are equivalent in application, but each unit system is to be used independently. All references to gallons are to U.S. gallons.



## 2 Reference Publications

This Standard refers to the following publication, and where such reference is made, it shall be to the current edition of that publication, including all amendments published thereto.

### **ANSI (American National Standards Institute)**

ANSI/SAE J512

Automotive Tube Fittings

## 3 Definitions and Abbreviations

### 3.1 Definitions

The following definitions shall apply in this Standard:

**Priming tube** — the tube that directs water from the fill valve refill tube or the flushometer valve tailpiece to a trap.

**Tailpiece** — the tube that connects the flushometer valve and the plumbing fixture (e.g., urinal or water closet).

**Trap primer** — a plumbing appurtenance that connects to a ballcock, fill valve, or tailpiece of a flushometer valve to supply water to a trap.

**Fill valve trap primer** — a trap primer that incorporates a means for connecting to a fill valve or ballcock and supplies water to the trap through a close-coupled tank bolt connector.

**Flushometer valve trap primer** — a trap primer that connects to the tailpiece of a flushometer valve.

**Trap primer adapter** — a fitting that allows connecting the priming tube to the trap.

### 3.2 Abbreviations

The following abbreviations shall apply in this Standard:

**DWV** — drain, waste, and vent

**NPS** — nominal pipe size

## 4 General Requirements

### 4.1 Fill Valve Trap Primers

- 4.1.1 Fill valve trap primers shall consist of
- (a) a refill tube with a check valve and a flow regulator;
  - (b) a priming tube with a close-coupled tank bolt connector and a compression fitting; and
  - (c) fittings for connecting to the water closet tank and the fill valve.
- 4.1.2 Fill valve trap primers shall be made of copper alloys with a minimum copper content of 60% (i.e., made of materials that have a corrosion resistance equivalent to yellow brass).
- 4.1.3 Connections from the outlet of the close coupled tank priming tube shall have an outside diameter of not less than 12.7 mm (0.5 in).
- 4.1.4 Fill valve trap primers shall have a 25 mm (1 in) air gap.

### 4.2 Flushometer Valve Trap Primers

- 4.2.1 Flushometer valve tailpieces supplied as part of a trap primer assembly shall
- (a) be chrome-plated;
  - (b) have a minimum wall thickness of 1.02 mm (0.040 in) (i.e., 18 Brown and Sharpe gauge); and
  - (c) be capable of accommodating a priming tube with an outside diameter of 9.5 mm (3/8 in) or larger through a compression, chrome-plated brass fitting
    - (i) brazed to the tailpiece; or
    - (ii) with at least two threads of engagement.
- 4.2.2 When the flushometer valve tailpiece is not supplied as part of a trap primer assembly, the trap primer shall have a means of providing ~~for~~ a watertight connection.
- 4.2.4 Priming tubes shall be chrome-plated and shall have an outside diameter of 9.5 mm (3/8 in) or larger.
- 4.2.5 Trap primer components supplied by the manufacturer shall be chrome-plated.

### 4.3 Compression Fittings

Compression fittings shall ~~be compatible~~ comply with ANSI/SAE J512.

### 4.4 Trap Primer Adapters

Trap primer adapters shall consist of a

- (a) fitting or assembly capable of connecting to an NPS-2, NPS-3, or NPS-4 DWV pipe; and
- (b) compression brass fitting with a nominal outside diameter of 1/2 or 5/8 affixed to the fitting or assembly described in Item (a) by the manufacturer.

**Note:** *The compression brass fitting can be plated or un-plated.*

## 5 Testing Requirements

### 5.1 Fill Valve Trap Primer Test

#### 5.1.1 Test Procedure

The fill valve trap primer test shall be conducted as follows:

- (a) Install the test specimen in the tank of a close-coupled water closet in accordance with manufacturer's installation instructions. The connections from the water closet to the trap shall be made at the maximum distance specified by the manufacturer.
- (b) Fill the water closet tank and ensure that the water closet bowl has a full trap seal depth.
- (c) Flush the water closet at a static pressure of 138 kPa (20 psi).
- (d) Measure the trap seal depth.
- (e) Repeat steps (b) to (d) 19 times, for a total of 20 cycles.

#### 5.1.2 Performance Requirements

5.1.2.1 There shall be no leakage from the tank bolt connection.

5.1.2.2 The test specimen shall allow the flow of at least 30 mL (1 fl oz) of water through the priming tube during each flush.

5.1.2.3 The water closet bowl shall restore to full trap seal depth after each flush.

### 5.2 Flushometer Valve Trap Primer Test

#### 5.2.1 Test Procedure

The flushometer valve trap primer test shall be conducted as follows:

- (a) Install the test specimen between a flushometer valve and a water closet bowl, including a connection to a trap, in accordance with manufacturer's [installation](#) instructions.
- (b) Ensure that the distance between the flushometer valve tailpiece and the trap is the maximum distance specified by the manufacturer.
- (c) Operate the flushometer valve 20 times at a flowing pressure of 345 kPa (50 psi).
- (d) Measure and record the water flowing through the priming tube for each flush.

#### 5.2.2 Performance Requirements

5.2.2.1 There shall be no leakage from any connection.

5.2.2.2 The test specimen shall allow the flow of at least 30 mL (1 fl oz) of water through the priming tube for each flush.

### 5.3 Trap Primer Adapter Test

#### 5.3.1 Test Procedure

The trap primer adapter test shall be conducted as follows:

(a) Assemble the test specimen to a 300 mm (1 ft) long DWV pipe, in accordance with manufacturer's installation instructions.

**Note:** *When applicable, allow enough time for solvent cemented joints to cure.*

(b) Cap both ends of the assembly.

(c) Pressurize the assembly to a static pressure of 34.5 kPa (5 psi) for 15 min.

#### 5.3.2 Performance Requirement

There shall be no leakage.

## 6 ~~Markings and Installation Instructions~~ and Accompanying Literature

### 6.1 Markings

Trap primers and trap primer adapters complying with this Standard shall be marked with the:

(a) manufacturer's name or trademark; and

(b) model number.

### 6.2 Visibility

Markings shall be permanent, legible, and visible after installation.

### ~~6.2~~6.3 Installation Instructions

Trap primers and trap primer adapters shall be accompanied by instructions for their installation, including information on adjustment of the controlling mechanism, when applicable.



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