

## AGENDA

### UNIFORM BUILDING CODE COMMISSION PLUMBING /HEALTH ADVISORY COMMITTEE

January 8,2015 9:30 AM

Heber M Wells Bldg  
North Conference Room  
160 E 300 S Salt Lake City, UT

*This agenda is subject to change up to 24 hours prior to the meeting.*

#### **ADMINISTRATIVE BUSINESS:**

Sign attendance sheet

1. Approval of the December 4, 2014 minutes

#### **DISCUSSION ITEMS:**

2. Review proposed amendments to Sections 1002.1, 1002.3, 1002.4, and 15A-3-314
3. Review the definitions for Contamination (High Hazard), High Hazard, Low Hazard, and Pollution (Low Hazard)
4. Review proposed amendments to Section 314.2.4.1 and 314.2.4.2
5. Review Section 607.2.1.2
6. Review Section 608.7 of 2015 IPC
7. Complete review of Chapter 6 of the 2015 IPC and corresponding chapters of 2015 IRC along with current amendments

Info Items:

- a. IPC Amendment status log

**Next Scheduled Meeting:** February 5, 2015

Please call Sharon at 530-6163 or email [ssmalley@utah.gov](mailto:ssmalley@utah.gov) if you do not plan on attending.



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,MINUTES

UNIFORM BUILDING CODE COMMISSION  
PLUMBING /HEALTH ADVISORY COMMITTEE  
MEETING

December 4, 2014

North Conference Room – 9:30 am  
Heber M Wells Building  
160 E 300 S  
Salt Lake City, Utah

STAFF:

Dan Jones, Bureau Manager  
Sharon Smalley, Secretary

COMMITTEE MEMBERS:

Kerry Cramer  
Jody Hilton  
Robert Paterson  
Michael Moss

Nelson Hooton  
Jeffrey Park  
Ray Moore  
Kevin Bell

VISITORS:

Candace Daly, Utah Beauty Association  
Brenda Scharman, Cameo College  
Jillian Wheeler, Utah Beauty Association

MINUTES

A motion was made by Jody Hilton to approve the minutes for the October 2, 2014 meeting as written. The motion was seconded by Michael Moss and passed unanimously.

REVIEW PROPOSED AMENDMENTS TO SECTION 314.2.4.1 AND 314.2.4.2

Discussion on this section was tabled until the next meeting.

REVIEW SECTION 423.3 OF 2015 IPC

Kerry Cramer spoke to the group in connection with the request he received to have this section of the code deleted. Candace Daly and Brenda Scharman spoke in favor of having this section deleted and gave their reasons behind the request. Following the discussion, a motion was made by Kerry Cramer to delete Section 423.3. The motion was seconded by Michael Moss and passed with a vote of five in favor and Jody Hilton, Robert Patterson, and Ray Moore voting in opposition.

REVIEW WORDING FOR AMEND-

Ray Moore passed out a proposal for new amend-

MENTS TO SECTION 608.1, TABLE  
608.1 AND SECTION 608.7

ments to Section 608.1. Following a review of the proposal, a motion was made by Michael Moss to approve the proposed amendments for 608.1 to add 608.1.2, 608.1.3 and the three subsections for installation criteria. The motion was seconded by Kerry Cramer and passed unanimously.

The discussion on an amendment to Section 608.7 was tabled until the next meeting.

COMPLETE REVIEW OF CHAPTER  
6 OF THE 2015 AND CORRE-  
SPONDING CHAPTERS OF 2015  
IRC ALONG WITH CURRENT  
AMENDMENTS

The committee reviewed the remaining amendments to Chapter 6 and the following recommendations were made.

A motion was made by Kerry Cramer to keep the current amendment for Section 608.13.3. The motion was seconded by Michael Moss and passed unanimously.

A motion was made by Michael Moss to keep the current amendment for Section 608.13.4. The motion was seconded by Kerry Cramer and passed unanimously.

The current amendment for Section 608.13.9 will be reviewed at the next meeting.

The meeting adjourned at 10:57.

*Note: These minutes are not intended to be a verbatim transcript but are intended to record the significant features of the business conducted in this meeting. Discussed items are not necessarily shown in the chronological order they occurred.*



**Plumb-Tech Design & Consulting Services, LLC**  
**Ron George, CPD, President**

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*Plumbing, Piping, Fire Protection, HVAC System Design Services, CAD Services,*

*Forensic Investigations of Mechanical System Failures, Litigation Support,*

*Code and Standard Consulting, Technical Writing, System Design and Code Training Seminars*

Website: [www.plumb-techllc.com](http://www.plumb-techllc.com)

October 16, 2014

PT Job #11007 - Utah

Utah Department of Commerce  
Division of Occupational and Professional Licensing  
160 East 300 South  
P.O. Box 146741  
Salt Lake City, UT 84114-6741

Board Members,

Hello, my name is Ron George and my company was hired to assist a Dutch company named Wavin Overseas BV with product approvals for a new plumbing product in various states. Wavin is Europe's largest producer of plastic plumbing products and the product under consideration here has an extensive international track record dating back to 1997.

We are also helping them with product standard consulting and model code approvals in the US. Wavin manufactures the HepvO device that can be used in place of tubular P-traps for sinks, lavatories and bathtubs. Before I was a consultant for Wavin, I assisted in the development of the consensus standard with the American Society of Mechanical Engineers titled: *ASME A112.18.8-2009 Sanitary Waste Valves For Plumbing Drainage Systems*. The scope of the standard establishes the minimum requirements for the device which is intended to be used as an alternative to tubular P-traps for sinks, lavatories and bathtubs because of problems associated with P-traps. Unlike P-traps these devices are not affected by freezing and evaporation, continuing to provide a reliable seal under all operating conditions. The Standard includes tests for: waterway flow rate, one-way sealing performance of the valve, airway flow rate, and recovery from an excess back pressure (inversion) condition, leak tightness, thermal cycling, cyclic fatigue, resistance to household substances, resistance to chemicals and solvents, drop test, and a life cycle test. This device is not intended for use on traps larger than 1½ inches and not intended for urinals, water closets or floor drains, so their application is limited to tubular traps for sinks, lavatories and bathtubs. These products have been widely used in the RV industry and marine industry throughout the United States for many years. The RV represents a more challenging environment for a trap than a residential installation due to seasonal use and the effect of vehicle motion. The same factor of seasonal use makes it a great application for vacation homes to protect against water freezing in p-traps and p-trap evaporation.

As per your conversation with my assistant, Moriah Fryer, I would like to request that you review the HepvO sanitary waste valve and the included materials add the HepvO valve in preparation for your plumbing board meeting. The IAPMO labs tested this device in accordance with the consensus standard *ASME A112.18.8-2009* and they issued a test certificate showing listing to the ASME standard. A copy of the listing certificate is included with this letter along with: the ASME standard, the manufacturer's product literature and a sample of the product. We are also sending you copies of testimonial letters from a RV manufacturer, a United Kingdom Home Builder, a manager of a Soccer Stadium in South Africa and a hair salon operator. Please feel free to call me or my assistant, Moriah Fryer, if you have any questions.

Attachments included are:

1. Utah State Request for Code Amendment Form for Utah State Plumbing Code
2. Utah State Request for Code Amendment Form for Utah State Residential Code
3. ASME A112.18.8-2009 Standard for Sanitary Waste Valves For Plumbing Drainage Systems
4. IAPMO Listing Test certificate showing listing to the ASME standard
5. The Manufacturer's Product Literature
6. Toni Guy Hair Salon Case Study
7. United Kingdom Home Builder Testimonial Letter
8. RV Manufacturer's Testimonial Letter
9. Soccer City Testimonial Letter

Sincerely,

Ronald L. George, CPD, President  
Plumb-Tech Design & Consulting Services, LLC  
P.O. Box 47, Newport, MI 48166  
Ph: 734-322-0225; Fax: 734-322-2949  
Cell Ph: 734-755-1908 E-mail: [Ron@Plumb-techllc.com](mailto:Ron@Plumb-techllc.com)

Moriah Fryer, Product Compliance Associate  
Plumb-Tech Design & Consulting Services, LLC  
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 DIVISION OF OCCUPATIONAL AND PROFESSIONAL LICENSING  
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 PO Box 146741 Salt Lake City UT 84114-6741  
 E-mail: dansjones@utah.gov  
 Web [www.dopl.utah.gov](http://www.dopl.utah.gov)

REQUEST FOR CODE AMENDMENT

Requesting Agency/Person: Plumb-Tech Design and Consulting Services, LLC On behalf of: Wavin Overseas B.V. Stationsplein 3 8011 CW Zwolle The Netherlands	Date:  16 OCT 2014
Street Address: P.O. Box 44	
City, State, Zip: Newport, MI 481666	
Contact Person: Ronald George on behalf of David Clayson	Phone: 734-322-0225
Code to be Amended: 2012 Utah State Plumbing Code	
Section: 2012 IPC 1002.1; 1002.3; 1002.4; 15A-3-314	
Section Title: Fixture Traps; Prohibited Traps; Trap Seals; Amendments to Chapter 14 of referenced standards of IPC	

<b>AMENDMENT:</b>
Type proposed amendment in rule change form. (Use strikeout on portions being removed and underline on all new wording.)
<ol style="list-style-type: none"> <li>1. Include the Entire Section you wish to amend.</li> <li>2. Attach additional sheets if necessary.</li> </ol>
See attached sheet.
Additional supporting material is attached
<ol style="list-style-type: none"> <li>1. ASME 112.18.8 Standard</li> <li>2. Hepvo Technical Design Guide</li> <li>3. IAPMO Research and Testing Certificate</li> <li>4. Long-term Cycling Test</li> <li>5. Toni Guy Hair Salon Testimonial</li> <li>6. United Kingdom Home Builder Testimonial</li> <li>7. Recreational Vehicle Manufacturer Testimonial</li> <li>8. Soccer City Stadium Testimonial</li> </ol>

**Purpose of or Reason for the amendment:**

The reason for this Amendment is to allow the products conforming to a new consensus plumbing industry standard. These devices can be utilized as an alternate to liquid sealed P-traps for drains 1 1/2 inches and smaller. These devices are a better option in cabins, vacation homes and other buildings that are subject to freezing or evaporation from long periods of non-use. These devices outperform a P-trap.

**Cost or Savings Impact of Amendment:**

There is no additional cost associated with this amendment since it is only intended to be used as an alternative to tubular P-traps.

**Compliance Cost for Affected Persons ("Persons" means any individual, partnership, corporation, association, governmental entity, or public organization of any character other than an agency.) (You must break out the impact cost to State Budget, Local Government and you must state aggregate cost to other persons {cost per person times number of persons affected}):**

None

Signature:



Date:

16 Oct 2014

**For Division Use:**

Date Received:

**Committee Action:**

- Approved                       Denied  
 Approved with revisions  
 Referred to:  
 Tabled

**UBC Commission Decision for Hearing:**

- Approved for hearing       Denied  
 Approved with revisions  
 Referred to:  
 Tabled

Date Filed:

Public Hearing Date

**UBC Commission Decision for Adoption:**

- Approved                       Denied  
 Approved with revisions  
 Referred to:  
 Tabled

Effective Date:

Amendment:

**1002.1 Fixture traps.**

Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm), and the horizontal distance shall not exceed 30 inches (610 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section 802.4. A fixture shall not be double trapped.

**Exceptions:**

1. This section shall not apply to fixtures with integral traps.
2. A combination plumbing fixture is permitted to be installed on one trap, provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste outlets are not more than 30 inches (762 mm) apart.
3. A grease interceptor intended to serve as a fixture trap in accordance with the manufacturer's installation instructions shall be permitted to serve as the trap for a single fixture or a combination sink of not more than three compartments where the vertical distance from the fixture outlet to the inlet of the interceptor does not exceed 30 inches (762 mm) and the developed length of the waste pipe from the most upstream fixture outlet to the inlet of the interceptor does not exceed 60 inches (1524 mm).
4. Where floor drains in multilevel parking structures are required to discharge to a combined building sewer system, the floor drains shall not be required to be individually trapped provided that they are connected to a main trap in accordance with Section 1103.1.
5. In 1 and 2 family applications or in residential applications, devices that comply with ASME A112.18.8-2009 "In-Line Sanitary Waste Valves for Plumbing Drainage Systems" shall not be required to have a liquid seal.

### **1002.3 Prohibited traps.**

The following types of traps are prohibited:

1. Traps that depend on moving parts to maintain the seal.
2. Bell traps.
3. Crown-vented traps.
4. Traps not integral with a fixture and that depend on interior partitions for the seal, except those traps constructed of an *approved* material that is resistant to corrosion and degradation.
5. "S" traps.
6. Drum traps.

#### **Exception:**

1. Drum traps used as solids interceptors and drum traps serving chemical waste systems shall not be prohibited.

2. In residential applications or in 1 and 2 family dwellings, devices that comply with ASME A112.18.8-2009 "In-Line Sanitary Waste Valves for Plumbing Drainage Systems" shall be permitted.

#### **1002.4 Trap seals.**

Each fixture trap shall have a liquid seal of not less than 2 inches (51 mm) and not more than 4 inches (102 mm), or deeper for special designs relating to accessible fixtures. Where a trap seal is subject to loss by evaporation, a trap seal primer valve shall be installed. Trap seal primer valves shall connect to the trap at a point above the level of the trap seal. A trap seal primer valve shall conform to ASSE 1018 or ASSE 1044.

Approved Means of Maintaining Trap Seals. Approved means of maintaining trap seals include the following, but are not limited to the methods cited:

1. A listed trap seal primer conforming to ASSE 1018 and ASSE 1044.
2. A hose bibb or bibbs within the same room.
3. Drainage from an untrapped lavatory discharging to the tailpiece of those fixture traps which require priming. All fixtures shall be in the same room and on the same floor level as the trap primer.
4. Barrier type floor drain trap seal protection devices meeting ASSE Standard 1072.
5. Deep seal p-trap.
6. Devices conforming to ASME A112.18.8 "In-Line Sanitary Waste Valves for Plumbing Drainage Systems" shall not be required to have a liquid seal.

The following underlined items are proposed Amendment to the Utah State Plumbing Codes.

Existing Text (Not subject to change):

**15A-3-314. Amendments to Chapter 14 of International Plumbing Code**

(1) In the International Plumbing Code, Chapter 14, the following referenced standard is added under ASSE:

Standard Reference Number	Title	Referenced in Code Section Number
1072-2007	Performance Requirements for Barrier type Floor Drain Trap Seal Protection Devices	1004.0

Please add the following underlined text:

Standard Reference Number	Title	Referenced in Code Section Number
<u>ASME A112.18.8</u>	<u>In-Line Sanitary Waste Valves for Plumbing Drainage Systems</u>	<u>1002.1</u> <u>1002.3</u> <u>1002.4</u>

UTAH DEPARTMENT OF COMMERCE  
 DIVISION OF OCCUPATIONAL AND PROFESSIONAL LICENSING  
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 Web [www.dopl.utah.gov](http://www.dopl.utah.gov)

REQUEST FOR CODE AMENDMENT

Requesting Agency/Person: Plumb-Tech Design and Consulting Services, LLC On behalf of: Wavin Overseas B.V. Stationsplein 3 8011 CW Zwolle The Netherlands	Date:  16 OCT 2014
Street Address: P.O. Box 47	
City, State, Zip: Newport, MI 48166	
Contact Person: Ronald George on behalf of David Clayson	Phone: 734-322-0225
Code to be Amended: 2012 Utah State Residential Code	
Section: IRC P3201.1; P3201.2; P3201.3; P3201.5; 15A-3-206	
Section Title: Design of Traps; Traps and Trap Seals Protection: Trap Setting and Protection; Prohibited Trap Design; Chapter 44 Reference Standards	

<b>AMENDMENT:</b> Type proposed amendment in rule change form. (Use strikeout on portions being removed and underline on all new wording.) <ol style="list-style-type: none"> <li>1. Include the Entire Section you wish to amend.</li> <li>2. Attach additional sheets if necessary.</li> </ol> <p>See attached sheets.</p> Additional supporting material is attached <ol style="list-style-type: none"> <li>1. ASME 112.18.8 Standard</li> <li>2. Hepvo Technical Design Guide</li> <li>3. IAPMO Research and Testing Certificate</li> <li>4. Long-term Cycling Test</li> <li>5. Toni Guy Hair Salon Testimonial</li> <li>6. United Kingdom Home Builder Testimonial</li> <li>7. Recreational Vehicle Manufacturer Testimonial</li> <li>8. Soccer City Stadium Testimonial</li> </ol>
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Purpose of or Reason for the amendment:

The reason for this Amendment is to allow the products conforming to a new consensus plumbing industry standard. These devices can be utilized as an alternate to liquid sealed P-traps for drains 1 ½ inches and smaller. These devices are a better option in cabins, vacation homes and other buildings that are subject to freezing or evaporation from long periods of non-use. These devices outperform a P-trap.

Cost or Savings Impact of Amendment:

There is no additional cost associated with this amendment since it is only intended to be used as an alternative to tubular P-traps.

Compliance Cost for Affected Persons ("Persons" means any individual, partnership, corporation, association, governmental entity, or public organization of any character other than an agency.) (You must break out the impact cost to State Budget, Local Government and you must state aggregate cost to other persons {cost per person times number of persons affected}):

None

Signature: 

Date:  
16 Oct 2014

**For Division Use:**

Date Received:	
<b>Committee Action:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Denied <input type="checkbox"/> Approved with revisions <input type="checkbox"/> Referred to: <input type="checkbox"/> Tabled	<b>UBC Commission Decision for Hearing:</b> <input type="checkbox"/> Approved for hearing <input type="checkbox"/> Denied <input type="checkbox"/> Approved with revisions <input type="checkbox"/> Referred to: <input type="checkbox"/> Tabled
Date Filed:	Public Hearing Date
<b>UBC Commission Decision for Adoption:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Denied <input type="checkbox"/> Approved with revisions <input type="checkbox"/> Referred to: <input type="checkbox"/> Tabled	Effective Date:

**P3201.1 Design of traps.**

Traps shall be of standard design, shall have smooth uniform internal waterways, shall be self-cleaning and shall not have interior partitions except where in integral with the fixture. Traps shall be constructed of lead, cast iron, cast or drawn brass or *approved* plastic. Tubular brass traps shall be not less than No. 20 gage (0.8mm) thickness. Solid connections, slip joints and couplings shall be permitted to be used on the trap inlet, trap outlet, or within the trap seal. Slip joints shall be accessible.

Exception:

Devices that comply with ASME A112.18.8 "In-Line Sanitary Waste Valves for Plumbing Drainage Systems" shall be permitted.

### **P3201.2 Trap seals and trap seal protection.**

Traps shall have a liquid seal not less than 2 inches (51mm) and not more than 4 inches (102mm). Traps for floor drains shall be fitted with a trap primer or shall be of the deep seal design. Trap seal primer valves shall connect to the trap at a point above the level of the trap seal.

Exception:

1. Devices that comply with ASME A112.18.98 "In-Line Sanitary Waste Valves for Plumbing Drainage Systems" shall not be required to have a liquid seal.
2. Devices conforming to ASME A112.18.8 shall be used on fixture drains 1 ½ inches in diameter and smaller.

**P3201.3 Trap setting and protection.**

Traps shall be set level with respect to their water seals and shall be protected from freezing. Trap seals shall be protected from siphonage, aspiration or back pressure by an *approved* system of venting (see Section P3101).

Exception: Devices that comply with ASME A112.18.8 "In-Line Sanitary Waste Valves for Plumbing Drainage Systems" shall be permitted.

### **P3201.5 Prohibited trap designs.**

The following types of traps are prohibited:

1. Bell traps
2. Separate fixture traps with interior partitions, except those lavatory traps made of plastic, stainless steel or other corrosion-resistant material.
3. "S" traps
4. Drum traps
5. Trap designs with moving parts

### **Exceptions:**

1. Drum traps used as solids interceptors and drum traps serving chemical waste systems shall not be prohibited
2. Devices that comply with ASME A112.18.8 "In-Line Sanitary Waste Valves for Plumbing Drainage Systems" shall be permitted.

**The following underlined items are proposed Amendment to the Utah State Construction and Fire Codes Act which is an Amendment to Chapter 44: Referenced Standards in the Utah Residential Code.**

**Existing text (Not subject to change):**

**15A-3-206. Amendments to Chapter 36 to 44 of International Residential Code**

(1) In IRC, Section E3902.12, the following words are deleted: “family rooms, dining rooms, living rooms, parlors, libraries, dens, sunrooms, recreation rooms, closets, hallways, and similar rooms or areas

Exception: This section does not apply for a simple move or an extension of a branch circuit or an outlet which does not include changes involving remodeling or additions to a residence.”

(2) IRC, Chapter 44, is amended by adding the following reference standard:

Standard Reference Number	Title	Referenced in Code Section Number
USC-FCCHR 10 <sup>th</sup> Edition Manual of Cross Connection Control	Foundation for Cross- Connection Control and Hydraulic Research University of Southern California Kaprielian Hall 300 Los Angeles CA 90089- 2531	Table P2902.3

**Please add the following underlined text:**

Standard Reference Number	Title	Referenced in Code Section Number
<u>ASME A112.18.8</u>	<u>In-Line Sanitary Waste Valves for Plumbing Drainage Systems</u>	<u>P3201.1</u> <u>P3201.2</u> <u>P3201.3</u> <u>P3201.5</u>

ASME A112.18.8-2009

# In-Line Sanitary Waste Valves for Plumbing Drainage Systems

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**AN AMERICAN NATIONAL STANDARD**



The American Society of  
Mechanical Engineers



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**ASME A112.18.8-2009**

# **In-Line Sanitary Waste Valves for Plumbing Drainage Systems**

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**AN AMERICAN NATIONAL STANDARD**



**The American Society of  
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Date of Issuance: July 17, 2009

This Standard will be revised when the Society approves the issuance of a new edition. There will be no addenda or written interpretations of the requirements of this Standard issued to this edition.

Periodically certain actions of the ASME A112 Committee may be published as Cases. Cases are published on the ASME Web site under the Committee Pages at <http://cstools.asme.org> as they are issued.

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This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Standards Committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment that provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

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## FOREWORD

The initial work on a standard for "Self-Sealing Waterless Waste Valves" was undertaken by a Committee of the International Association of Plumbing and Mechanical Officials (IAPMO). The results of their activity resulted in their Interim Guide Criteria IGC 203-2004, which was used as a benchmark for performance of such devices, which are now known as "Sanitary Waste Valves." IGC 203-2004 was submitted to the ASME Standards Committee A112, Plumbing Materials and Equipment, for conversion into an American National Standard. A112 Project Team 18.8 was established for the purpose of undertaking this task.

The purpose of this Standard is to establish a generally acceptable standard for sanitary waste valves for installation on tubing. Its purpose is to serve as a guide for producers, distributors, architects, engineers, contractors, installers, inspectors, and users; to promote understanding regarding materials, manufacture, and installation; and to provide for identifying fittings for installation on the valve complying with this Standard.

Sanitary waste valves are intended for use as an alternative to tubular p-traps. Sanitary waste valves provide a waterless barrier between the waste system and the fixture.

Suggestions for improvement of this Standard will be welcomed. They should be sent to The American Society of Mechanical Engineers, Attn: Secretary, A112 Standards Committee, Three Park Avenue, New York, NY 10016-5990.

This Standard was approved by the American National Standards Institute on June 2, 2009.



# ASME A112 COMMITTEE

## Standardization of Plumbing Materials and Equipment

(The following is the roster of the Committee at the time of approval of this Standard.)

### STANDARDS COMMITTEE OFFICERS

**D. W. Viola**, *Chair*  
**S. A. Remedios**, *Vice Chair*  
**C. J. Gomez**, *Secretary*

### STANDARDS COMMITTEE PERSONNEL

<b>R. H. Ackroyd</b> , Rand Engineering	<b>G. W. Harrison</b> , <i>Corresponding Member</i> , Consultant
<b>S. R. Aridi</b> , NSF International	<b>D. E. Holloway</b> , <i>Alternate</i> , International Association of Plumbing and Mechanical Officials
<b>J. A. Ballanco</b> , JB Engineering & Code Consulting	<b>J. M. Koeller</b> , Koeller and Co.
<b>J. Bouwer</b> , SFA Saniflo, Inc.	<b>N. M. Kummerlen</b> , Moen, Inc.
<b>M. N. Burgess</b> , Burgess Group, Inc.	<b>L. A. Mercer</b> , <i>Alternate</i> , Moen, Inc.
<b>M. Campos</b> , <i>Alternate</i> , International Association of Plumbing and Mechanical Officials	<b>J. W. Lauer</b> , Sloan Valve Co.
<b>S. L. Cavanaugh</b> , Consultant	<b>J. C. Watson</b> , <i>Alternate</i> , Sloan Valve Co.
<b>A. Ciechanowski</b> , <i>Alternate</i> , NSF International	<b>R. M. Martin</b> , California Energy Commission
<b>S. M. Corcoran</b> , American Society of Sanitary Engineering	<b>T. C. Pitcherello</b> , New Jersey Department of Community Affairs
<b>P. V. DeMarco</b> , International Association of Plumbing and Mechanical Officials	<b>S. Rawalpindiwala</b> , Kohler Co.
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<b>R. Emmerson</b> , Consultant	<b>G. L. Simmons</b> , Charlotte Pipe and Foundry
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### A112 PROJECT TEAM 18.8 — SANITARY WASTE VALVES

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Secretary, A112 Standards Committee  
The American Society of Mechanical Engineers  
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New York, NY 10016-5990

**Proposing Revisions.** Revisions are made periodically to this Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the edition, the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal including any pertinent documentation. When appropriate, proposals should be submitted using the A112 Project Initiation Request Form.

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Subject:	Cite the applicable paragraph number(s) and the topic of the inquiry.
Edition:	Cite the applicable edition of the Standard for which the interpretation is being requested.
Question:	Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format will be rewritten in this format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

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# IN-LINE SANITARY WASTE VALVES FOR PLUMBING DRAINAGE SYSTEMS

## 1 GENERAL

### 1.1 Scope

This Standard establishes minimum requirements for materials in the construction of sanitary waste valves (hereinafter referred to as "the valve") for use as an alternate to tubular p-traps, and prescribes minimum test requirements for the performance of the valve, together with methods of marking and identification. This Standard does not define the requirements for products to be used in urinals or water closets. It is not intended that products meeting this Standard will be used in a urinal or water closet.

The provisions of this Standard are not intended to prevent the use of any alternate material or method of construction provided any such alternate meets the intent of this Standard.

### 1.2 Units of Measurement

Values are stated in U.S. Customary units and in the International System of Units (SI). The U.S. Customary units shall be considered as the standard.

In this Standard, gallons (U.S. liquid) per minute is abbreviated gpm and liters (metric liquid) per minute is abbreviated L/min.

### 1.3 References

The following documents form a part of this Standard to the extent specified herein. Unless otherwise specified, the latest edition shall apply.

ANSI/ASSE 1051, Air Admittance Valves for Plumbing Drainage Systems

Publisher: American Society of Sanitary Engineering (ASSE), 901 Canterbury Road, Westlake, OH 44145

ASME A112.18.2/CSA B125.2, Plumbing Waste Fittings ASME B1.20.1, Pipe Threads, General Purpose (Inch)

Publisher: The American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990; Order Department: 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300

ASTM D 2000, Rubber Products for Automotive Applications

ASTM F 409, Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings

Publisher: American Society for Testing and Materials (ASTM International), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959

### 1.4 Definitions

*bladder/checking member*: the component of the sanitary waste valve that provides the sealing function.

*sanitary waste valve*: a product used as an alternate to a water-filled tubular waste trap which provides protection for the property from foul air in the sewer.

## 2 GENERAL REQUIREMENTS

### 2.1 Material

The valve shall meet the material requirements of ASTM F 409. The valve shall be installed in accessible locations.

### 2.2 Seal Material

Seal materials shall comply with or exceed classification M3BA507 A14 B13 C12 F17 or M2BG714 B14 EO14 EO34 of ASTM D 2000.

### 2.3 Bladder/Checking Member Material

Bladder/checking member material comply with or exceed classification M3FC607 EA14 EO16 G11 of ASTM D 2000.

### 2.4 Valve Inlet

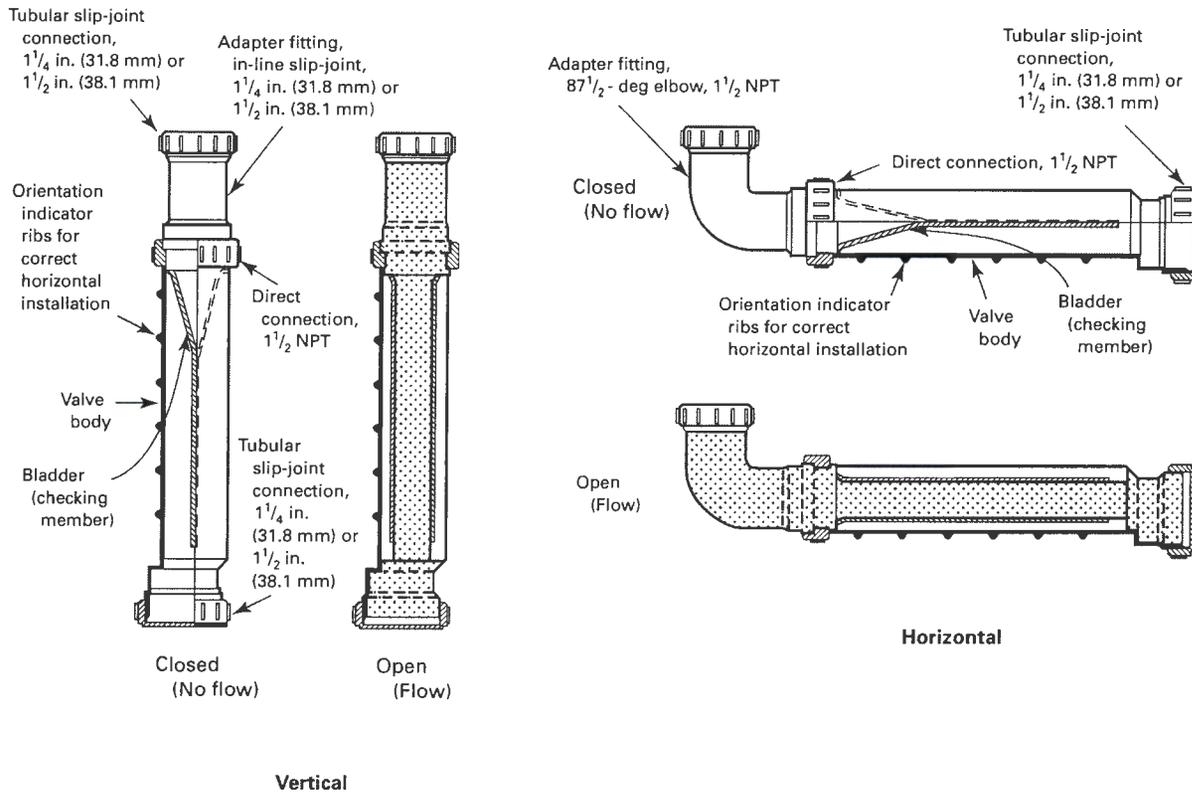
**2.4.1** The valve inlets shall be 1¼ in. (31.8 mm) or 1½ in. (38.1 mm), nominal straight or with an 87½-deg elbow or be standard pipe size straight inlet (see Fig. 1).

**2.4.2** The base of the thread may be sealed by a sealing washer (inlet set) at the base of the thread. The useful thread length shall be between ⅜ in. (9.5 mm) and ½ in. (12.7 mm). All threaded fixture outlets shall have a minimum three-thread engagement for fittings and plastic nuts to correctly engage/energize the inlet seal in accordance with ASTM F 409.

**2.4.3** If required for horizontal installations, an 87½-deg knuckle adapter shall be available to allow the valve to be connected in a horizontal position. The device and connected piping, when installed in a horizontal position, shall have a minimum slope of 1:48 [i.e., ¼ in./ft (21 mm/m)].



**Fig. 1 Typical Cross-Section  
(For Illustrative Purposes Only)**



**2.4.4** If required, a straight-running adapter shall be available to allow the valve to be connected to pipe rather than the fixture outlet.

**2.5 Valve Outlet**

The valve outlet shall have a connection that is compatible with tubing manufactured to ASTM F 409 or threaded connections complying with ASME A112.18.2/CSA B125.2.

**2.6 Threaded Connections**

All threads that connect to external fixtures shall comply with ASME B1.20.1.

**3 TESTING**

**3.1 Waterway Flow Rate**

**3.1.1 Test Method.** Connect the valve to the waste outlet hole of the tank in accordance with Fig. 2 and the manufacturer's installation instructions. Fill the test tank with water up to the test level. Stabilize the test level by adjusting the water inflow by means of the regulating

valve. The flow rate of the valve is indicated by the flow meter, when the test water level is stabilized.

**3.1.2 Performance Requirements.** The valve shall demonstrate flow rates not less than

- (a) 1 1/4 in. (31.8 mm): 9.5 gpm (36 L/min), valve alone on wash basin, bidet
- (b) 1 1/2 in. (38.1 mm): 13.5 gpm (51 L/min), valve alone on bath
- (c) 1 1/2 in. (38.1 mm): 11.1 gpm (42 L/min), valve alone on kitchen sink

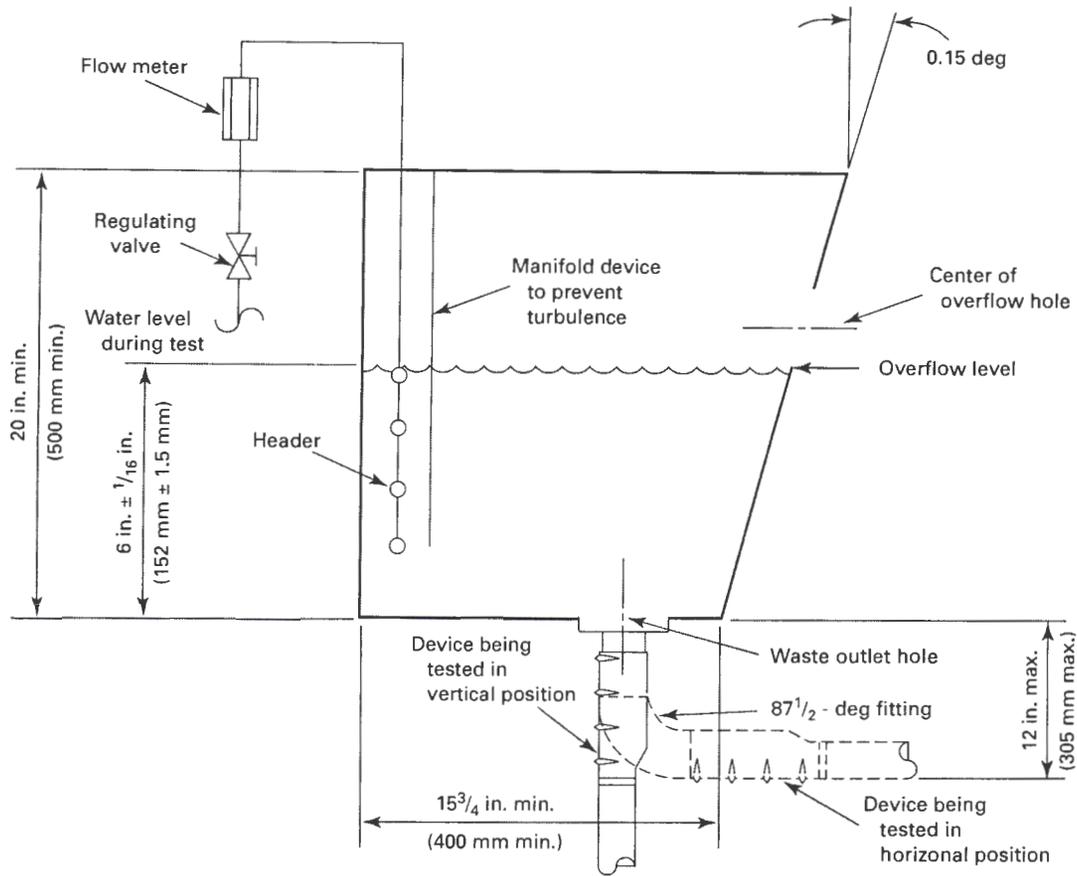
**3.2 One-Way Sealing Performance of the Valve**

**3.2.1 Test Apparatus.** The test apparatus is as follows:

- (a) length of 1/4 in. (6 mm) bore rubber tubing
- (b) tee-junction suitable for use with the rubber tubing
- (c) u-tube manometer with a range of 0 in. (0 mm) to 4 in. (102 mm) of water, gage
- (d) reducer to enable the rubber tube to be connected to the outlet of the valve



Fig. 2 Waterway Flow-Rate Test Apparatus



**3.2.2 Test Method.** Prime the valve by running a gallon of water through the valve to waste. Connect the rubber tubing through the reducer to the outlet of the valve. Connect the other end of the tube to the tee-junction, one leg of which is connected to the u-tube manometer and the remaining leg to another length of tubing. Apply air pressure to the free end of the tubing until a pressure of 2 in. (51 mm) of water, gage, is registered on the u-tube manometer. Clamp the end of the tube and maintain pressure for 10 sec.

**3.2.3 Performance Requirements.** The valve shall retain a seal under a back pressure, equivalent to 2 in. (51 mm) of water, gage, for 10 sec.

### 3.3 Airway Flow Rate

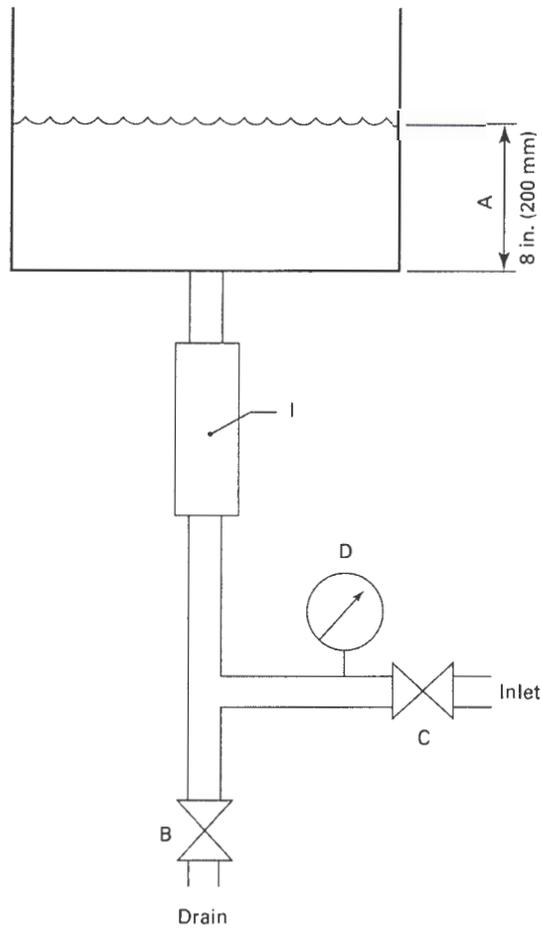
The airway flow rate test shall be performed in accordance with paras. 3.3.2 through 3.3.4 of ANSI/ASSE 1051.

### 3.4 Recovery From an Excess Back Pressure (Inversion) Condition

**3.4.1 Test Method.** Fit the valve to be tested to a standard sink and connect the arrangement of pipe work shown in Fig. 3 to the outlet of the valve. Close valve at point B. Slowly open valve C until the bladder inverts and water flows into the sink. Record the pressure at the point of inversion. Close valve C, open valve B. Fit the sink plug and fill with water to level A.

**3.4.2 Performance Requirements.** When the sink plug is removed, the sink must completely drain. At the completion of the test, the valve shall be tested in accordance with paras. 3.1 and 3.2. Failure to achieve the performance parameters prescribed in paras. 3.1 and 3.2 shall be cause for rejection.

Fig. 3 Inversion Recovery Test Apparatus



- A = water level
- B = outlet drain valve
- C = inlet valve
- D = pressure gage
- I = valve under test



### 3.5 Leak Tightness

**3.5.1 Test Method.** The valve must be tested in accordance with the hydrostatic pressure test in ASTM F 409 using an internal pressure of 25 psi (172 kPa) for 1 hr.

**3.5.2 Performance Requirements.** The valve shall show no evidence of leakage and demonstrate air tightness.

### 3.6 Thermal Cycling

**3.6.1 Test Requirement.** The valve shall complete the following thermal cycling test procedure for 5 cycles and allow 5 sec of draining time between cycles:

(a) 7.9 gpm (30 L/min) of water at a temperature of  $203^{\circ}\text{F} \pm 4^{\circ}\text{F}$  ( $95^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ) over a period of 15 min at a constant flow rate

(b) 7.9 gpm (30 L/min) of water at a temperature of  $68^{\circ}\text{F} \pm 10^{\circ}\text{F}$  ( $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ) over a period of 10 min at a constant flow rate

**3.6.2 Performance Requirements.** At the completion of the above test, the valve shall be tested in accordance with para. 3.2 and meet the requirements of para. 3.2.3.

### 3.7 Cyclic Fatigue

**3.7.1 Test Requirement.** The valve shall complete the following cyclic fatigue test procedure allowing 60 sec for draining between cycles: 1,500 cycles of 60 sec  $\pm$  2 sec duration, at a temperature of  $200^{\circ}\text{F} \pm 4^{\circ}\text{F}$  ( $93^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ) followed by 60 sec at a temperature of  $59^{\circ}\text{F} \pm 10^{\circ}\text{F}$  ( $15^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ), flow rate 7.9 gpm  $\pm$  0.1 gpm (30 L/min  $\pm$  0.5 L/min).

**3.7.2 Performance Requirements.** At the completion of the above test, the valve shall be tested in accordance with para. 3.2 and meet the requirements of para. 3.2.3.

### 3.8 Resistance to Household Substances

**3.8.1 Test Apparatus.** The valve shall be attached to a sink fitted with a standard crosspiece outlet.

**3.8.2 Substances to Be Tested.** Each test shall be carried out separately using a quantity of 1.5 oz (43 g) or 1.5 fl oz (44 mL) of one of the following materials:

- (a) material 1: food — uncooked long-grain rice
- (b) material 2: food — diced vegetable of size  $\frac{1}{4}$  in.  $\times$   $\frac{1}{4}$  in.  $\times$   $\frac{1}{4}$  in. (6 mm  $\times$  6 mm  $\times$  6 mm)
- (c) material 3: cleaners — liquid soaps
- (d) material 4: solids — kiln-dried sand
- (e) material 5: lard — 95% water, 5% melted lard, each at  $150^{\circ}\text{F}$  ( $65.6^{\circ}\text{C}$ )

**3.8.3 Test Method.** The material shall be placed on or around the sink outlet. Four pints (64 fl oz or 1.9 L) of water will then be poured onto the item to flush the material from the sink. For Materials 1 through 4, cold water shall be used; for Material 5, warm water at  $150^{\circ}\text{F}$

( $65.6^{\circ}\text{C}$ ) shall be used. The system will then be left for 24 hr.

**3.8.4 Performance Requirements.** At the completion of the above test, the valve shall be tested in accordance with para. 3.2 and meet the requirements of para. 3.2.3.

### 3.9 Resistance to Chemicals and Solvents

**3.9.1 Test Requirement.** The valve shall be attached to a sink fitted with a standard crosspiece outlet.

**3.9.2 Substances to Be Tested.** Each test shall be carried out separately using a quantity of  $\frac{3}{4}$  pt (12 fl oz or 0.35 L) of one of the following solvents:

- (a) solvent 1: liquid drain cleaner containing sulfuric acid
- (b) solvent 2: mineral spirits
- (c) solvent 3: kerosene

**3.9.3 Test Method.** The material shall be poured into the sink outlet. After one minute, pour 4 pt (64 fl oz or 1.9 L) of cold water into the sink outlet to flush the solvent from the sink. The system will then be left for 24 hr.

**3.9.4 Performance Requirements.** At the completion of the above test, the valve shall be tested in accordance with para. 3.2 and meet the requirements of para. 3.2.3.

### 3.10 Drop

**3.10.1 Test Method.** The test shall be conducted over a clean concrete surface. Hold the valve with the lowest point upside down, 3 ft (0.91 m) above the surface and release the valve. Pick up the valve and change orientation (top uppermost) and release onto concrete again. Pick up the valve one final time and change orientation (sideways) and release onto concrete. Observe the valve for any changes.

**3.10.2 Performance Requirements.** The valve shall show no signs of deformation or breakage that may affect its function.

### 3.11 Life Cycle

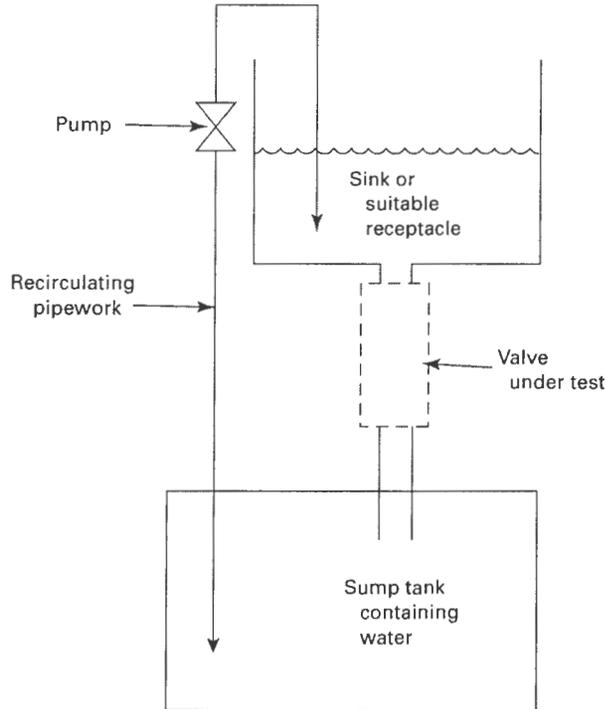
**3.11.1 Test Requirement.** Resistance of the valve to cyclic fatigue under ambient conditions shall be tested using the apparatus shown in Fig. 4.

**3.11.2 Test Method.** The valve under test shall undergo 20,000 cycles. A cycle comprises 10 sec exposure to the solution, followed by 10 sec of draining.

**3.11.3 Performance Requirements.** At the completion of the above test, the valve shall be tested in accordance with para. 3.2.



**Fig. 4 Life-Cycle Test Apparatus**



**4 MARKING, IDENTIFICATION, AND INSTRUCTIONS**

**4.1 Marking and Identification**

The valve shall be permanently and legibly marked with the following:

- (a) manufacturer's name
- (b) product name/brand name
- (c) nominal size of inlet and outlet
- (d) date of manufacture
- (e) predominant material

- (f) direction of flow indicator
- (g) indication of the orientation of the installation of the device

**4.2 Instructions**

The manufacturer shall provide instructions on packaging or accompanying literature indicating, where appropriate, both of the following:

- (a) the orientation of the installation of the device
- (b) limitations on the use and type of drain-cleaning chemicals and tools



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# Hep<sub>v</sub>O™



## Sanitary Waste Valve

– A HYGIENIC ALTERNATIVE TO CONVENTIONAL TRAPS

**Hep<sub>v</sub>O** is a self sealing valve designed to close the waste connection below a sanitary fixture to prevent the escape of foul sewer air into the dwelling.

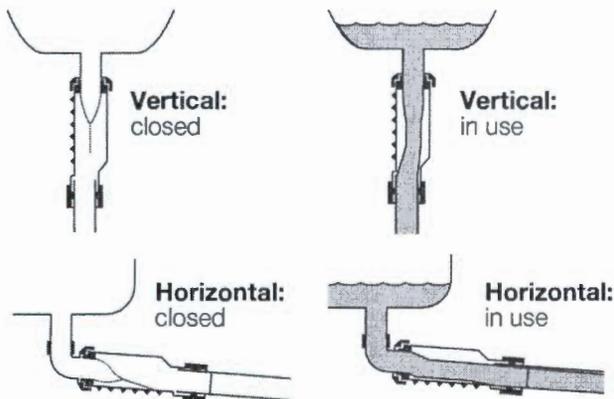
**Hep<sub>v</sub>O** unlike conventional waste traps, does not rely on trapped water to create a seal. Instead, **Hep<sub>v</sub>O** uses a self-sealing membrane which performs the same function as a water seal trap but without the risk of evaporation, siphonage, or cracking under freezing conditions.

The **Hep<sub>v</sub>O** Sanitary Waste Valve means enhanced plumbing design and system efficiency, without compromising performance or risking the escape of foul air into the living space from the drain or sewer.

### Hep<sub>v</sub>O – Operation

#### Hep<sub>v</sub>O a Barrier between Living Space and the Drainage System.

Foul sewer gas must be prevented from entering the building. The loss of the water seal in a conventional trap can cause gurgling noises, objectionable smells, allow insect ingress, and has the potential to allow the spread of health hazards (such as SARS).



The **Hep<sub>v</sub>O** Sanitary Waste Valve opens under the water pressure of a fixture emptying and closes to form a tight seal after the fixture has discharged.

# NEW



### Hep<sub>v</sub>O – Product Features

- **Dry Seal Technology** – cannot fail by evaporation or siphonage
- **Admits Air** – Relieves negative pressure in drain system
- **One Way Valve** – Prevents Foul Odors

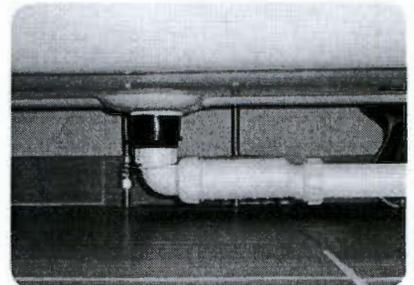
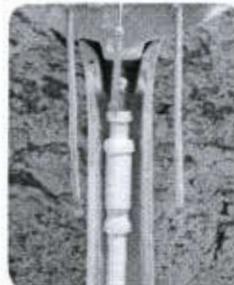
**Hep<sub>v</sub>O** will out-perform a conventional trap by preventing the escape of foul air under excessive operating conditions up to 10 times greater than those normally experienced in a correctly designed Soil & Waste system. By comparison, conventional traps allow foul sewer air to bubble-through the seal at relatively low positive pressures.

In addition because **Hep<sub>v</sub>O** does not trap water that may contain food scraps or other waste, microbiological growth of a fungal, bacterial or viral nature is less likely.

**Hep<sub>v</sub>O** fully meets the requirements of ASME A112.18.8 – as an alternate to a tubular p-trap.

### Hep<sub>v</sub>O – Applications

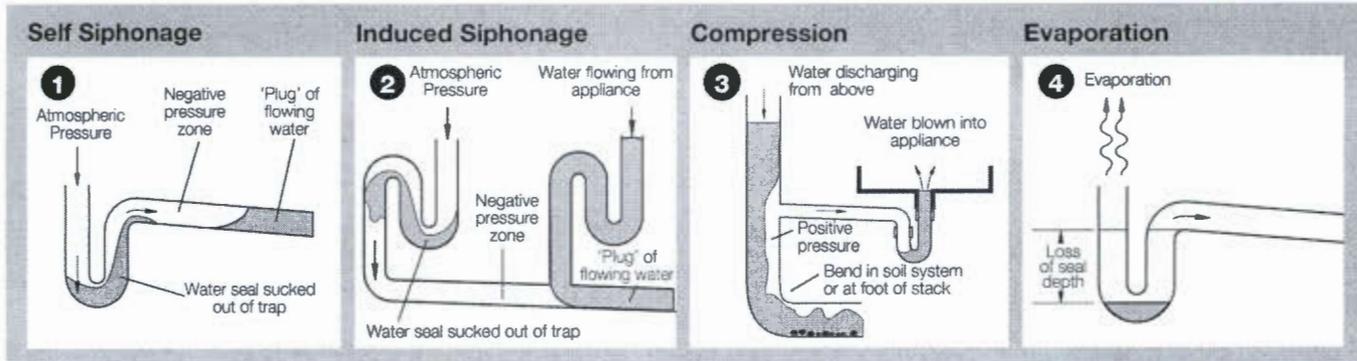
- Lavatories
- Bath Tubs
- Sink
- Bidet
- Washing Machine
- Garbage Disposal (Vertical Only)
- Overflow
- Dishwasher
- Shower



Minimizes the space required behind a lavatory or beneath a bath tub/shower tray.

# Hep<sub>v</sub>O - Design and Performance

**The PROBLEM:** Conventional waste traps work by having a water seal to prevent foul odors entering buildings. However a water trap can fail under a number of conditions. The following diagrams show several problems that result in loss of water seal, gurgling and foul smells.

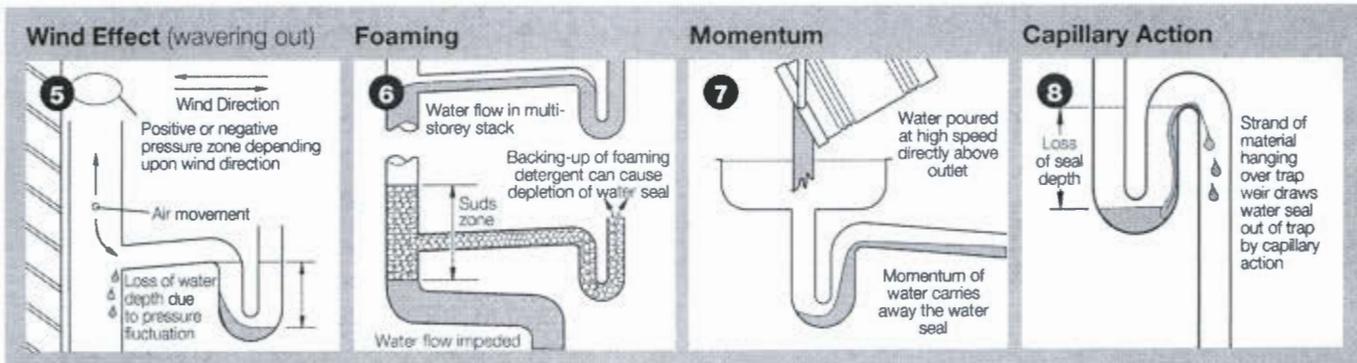


**Self Siphonage:** water flowing down the discharge pipe draws the water from the trap.

**Induced Siphonage:** the water seal is drawn out of the trap by water discharging from a fixture downstream (e.g. washing machine).

**Compression:** water is pushed out of the trap by a positive pressure caused by discharging of fixtures located above (e.g. WC).

**Evaporation:** water in the trap evaporates during periods of non-use (e.g. during vacation or when fixtures are not being used).

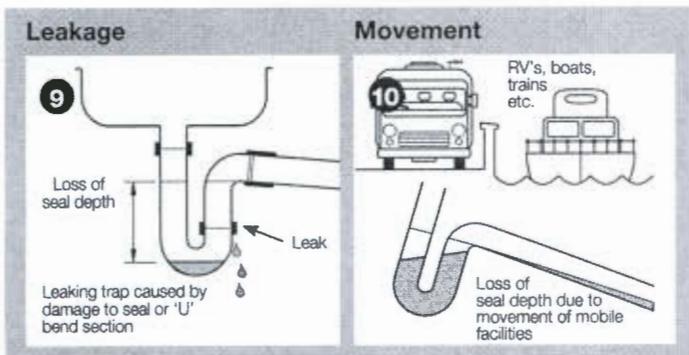


**Wind Effect:** air movement across the top of the Soil & Vent Pipe causes reciprocation of water in the trap and potential for loss of seal depth.

**Foaming:** agitation of waste water containing detergents in the Soil and Vent pipe creates foaming which pushes water out of the trap.

**Momentum:** waste water from a bowl or pail poured directly in to the waste outlet carries water out of the trap due to speed of discharge. This is also common with modern, funnel shaped basin designs.

**Capillary Action:** fibrous material retained in the trap and hanging over the weir draws water out of the trap.



**Leakage:** badly fitting or loose components and/or damaged seals can allow water to leak causing loss of seal depth.

**Movement:** In mobile facilities such as RV's and boats movement can cause potential for loss of water in the trap.

## Hep<sub>v</sub>O - The SOLUTION

When installed in accordance with manufacturer's instructions the unique Hep<sub>v</sub>O Sanitary Waste Valve is the solution to all these problems.

Hep<sub>v</sub>O provides a constant seal against sewer gas ingress, which is maintained under all normal operating conditions.

Hep<sub>v</sub>O Sanitary Waste Valve actively eliminates negative pressure within the waste system by opening and allowing in fresh air until a state of equilibrium with atmosphere is reached.

Hep<sub>v</sub>O Sanitary Waste Valve resists blockages, prevents nasty smells, gurgling sounds and stagnant water under all circumstances.

## Hep<sub>o</sub> – Installation Benefits

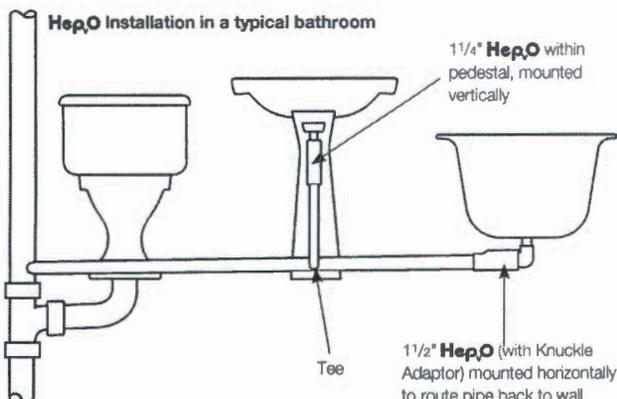
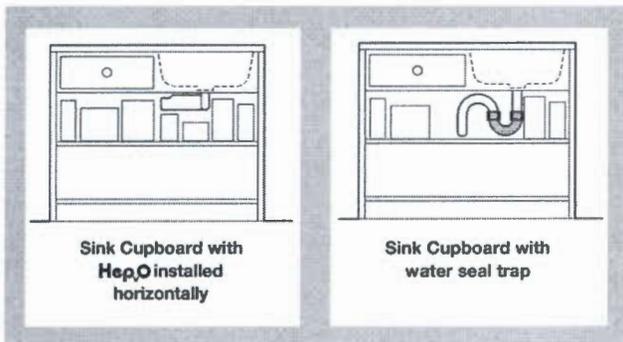
**Hep<sub>o</sub>** is a new concept in the prevention of foul air escaping into the building while actively eliminating negative pressure in soil and waste installations. It allows the designer greater flexibility on fixture and venting installation without compromising the performance of their sanitary seals.

### System Simplification - Design Freedom and Economic Benefits

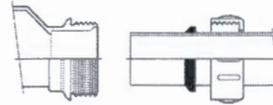
Regulations for waste system design set limits on length and slope of pipes and the number of fixtures which can be connected to a waste pipe in order to keep pressure fluctuations to a minimum. This may be rectified by the incorporation of vent pipes at appropriate design locations.

The incorporation of **Hep<sub>o</sub>** provides a good sanitary system offering minimum resistance to flow.

- 1 Compact design, flexibility of location and ability to actively eliminate negative pressure improves system performance.
- 2 A typical fixture will drain more quickly when a **Hep<sub>o</sub>** is installed compared to a p-trap installation. This helps keep downstream piping cleaner and reduces maintenance requirements.
- 3 There is no trap to vent distance limitations based on the slope of the pipe and the elevation of the vent connection.
- 4 Where necessary tight radius bends can be used, without fear of siphonage or compression.



## Hep<sub>o</sub> – Installation & Maintenance



Slip-nut and sealing cone on tube end ready for insertion of tube into compression socket.

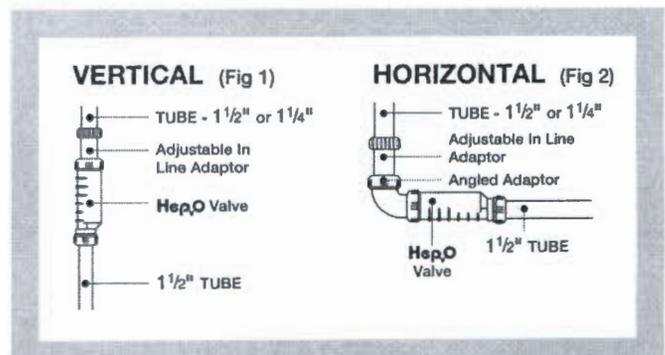
### INSTALLATION

- 1 Cut the tube to length, allowing for the full compression socket depth, (preferably using an appropriate tube cutter).
- 2 If using plastic tube remove any loose material from the inside and the outside of the end of the tube. If using metallic tube remove any burrs or sharp edges from the inside or the outside of the tube and file if necessary. Mark the socket depth on the tube, and check that the tube section to be joined is free of any damage which may affect the joint seal.
- 3 Unscrew the slip-nut from the **Hep<sub>o</sub>** outlet/inlet adaptor and slide the slip-nut, slip washer and rubber seal onto the tube.
- 4 Insert the tube end fully into the socket.
- 5 Slide the rubber seal, slip washer and screw slip-nut against the face of the socket, and tighten the slip-nut by hand, (check that the slip-nut is square to the body and does not 'cross-thread'), hand tight should be adequate to form a proper seal.
- 6 Threaded connections can be made to the inlet or outlet of the **Hep<sub>o</sub>** valve. At the outlet it is first necessary to remove the slip-nut and rubber seal. If making connections to threaded components that do not have an integral seal (for example connection to DWV adaptors) PTFE/TEFLON tape should be applied to the thread prior to assembly.

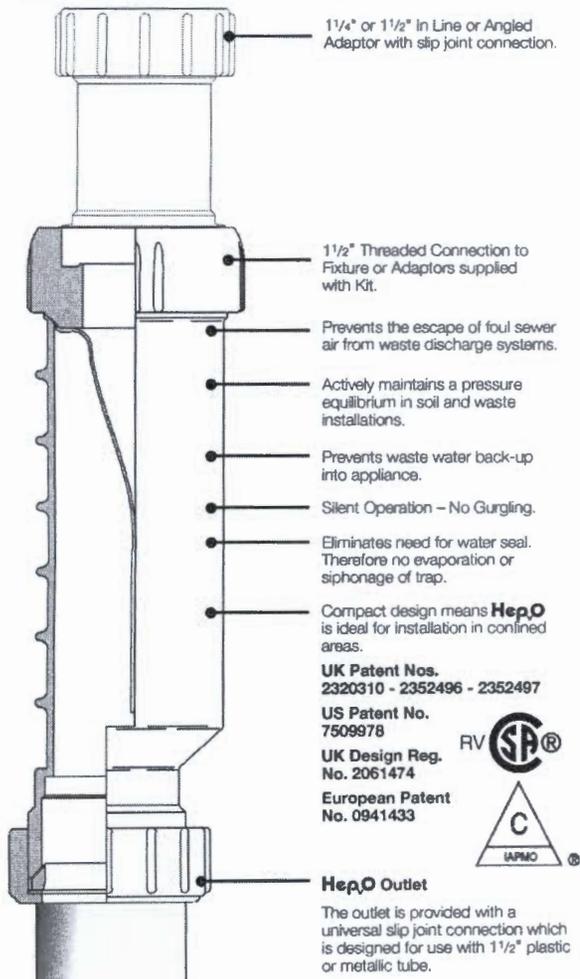
### MAINTENANCE

If mechanical devices such as spiral cables, rippers or water jetters are required to clear blockages in the waste system, the **Hep<sub>o</sub>** valve must be removed first.

It is good practice to rinse the **Hep<sub>o</sub>** valve with a little clean water before replacing it in the system.



## Hep<sub>v</sub>O Valve Components



For further information on Hep<sub>v</sub>O and other Hepworth products visit:  
[www.hepworth.co.uk](http://www.hepworth.co.uk)

For all Hep<sub>v</sub>O enquiries email:  
[sales@a-s-m.com](mailto:sales@a-s-m.com)

**Hepworth**   
PLASTICS

EDLINGTON LANE EDLINGTON  
DONCASTER DN12 1BY ENGLAND UK  
TEL +44 (0)1709 856300 FAX +44 (0)1709 856301

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TM Hep<sub>v</sub>O is a trademark of Wavin Limited.

Our policy is one of constant development.

Whilst this publication is accurate at the date of printing, specification/approvals may be changed in the interest of continued improvement.

## Frequently Asked Questions

### 1 Is Hep<sub>v</sub>O used in addition to a conventional trap?

*NO, unlike other products which prevent foul odors entering the living space, Hep<sub>v</sub>O is used instead of a conventional water-seal trap.*

### 2 Will I still need to install auxiliary venting on waste pipe branches?

*NO, Hep<sub>v</sub>O acts as a highly effective local air admittance device, removing the need for secondary venting.*

### 3 Can I use acidic drain cleaning chemicals?

*YES, the Hep<sub>v</sub>O valve is manufactured from a highly inert material and has passed extensive testing with a very wide range of chemicals including both acid and alkaline products.*

### 4 Do I still need to connect each fixture on its own dedicated waste branch?

*NO, Hep<sub>v</sub>O prevents induced siphonage between adjacent fixture traps so it is now possible to make multiple connections on the same branch. This can save yards of tubing or piping and gives great flexibility for locating fixtures and designing waste systems.*

### 5 Hep<sub>v</sub>O is a new product to me - how can I be confident that it will give a good installed performance?

*Hep<sub>v</sub>O is new to the North American market but it is not a new product. It has been in volume production in the UK since 1997 and it is widely used in Europe, Australia and the Far East. It has attained numerous international approvals against very demanding standards and has achieved an enviable track record of trouble-free performance.*

### 6 Will Hep<sub>v</sub>O promote better hygiene by stopping the escape of foul sewer air into habitable spaces?

*YES - The valve has been proven to perform under conditions in which traditional water seal traps are vulnerable to failure. It will continue to perform under back pressures 10 times greater than those experienced in correctly designed soil and waste systems.*

### 7 Does the air tight seal break down if a strand of cloth or hair collects in the strainer and falls down between the faces of the valve?

*NO - Hep<sub>v</sub>O has undergone extensive foreign body testing (ASME A112.18.8). Tests show that the valve will maintain an air tight seal around an obstruction such as hair, fabric strands or spaghetti.*

### 8 What is the life expectancy of Hep<sub>v</sub>O ?

*Installed correctly Hep<sub>v</sub>O can be expected to have a life expectancy at least equivalent to current water sealed traps. In addition Hep<sub>v</sub>O is guaranteed against defects in materials or manufacturing for a period of 3 years.*

### 9 Will Hep<sub>v</sub>O block easily for example if fat is discharged through it?

*NO - Extensive testing has shown that Hep<sub>v</sub>O is less prone to blockage than traditional water seal traps. Note: because the 'straight through' design of Hep<sub>v</sub>O does not trap debris discharged through the waste fixture care should be taken with jewelry and other valuables.*

### 10 Will the seal be maintained even when the fixture hasn't been used for some time?

*YES - Hep<sub>v</sub>O does not depend on a water seal and so it will continue to maintain a seal whether a fixture never gets used or is used very infrequently.*

### 11 Does the valve make a noise?

*Under normal conditions Hep<sub>v</sub>O operates silently, unlike normal traps that are prone to 'gurgle'*

### 12 Will Hep<sub>v</sub>O support microbiological growth?

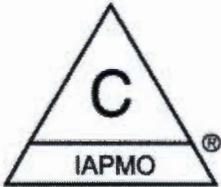
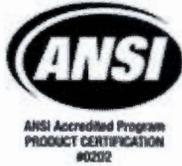
*NO - The materials used to manufacture Hep<sub>v</sub>O will not support microbiological growth for example mold and mildew.*

**TOLL FREE HELPLINE**  
**800-241-5236**

Hep<sub>v</sub>O USA/7/13/3732

# IAPMO RESEARCH AND TESTING, INC.

5001 East Philadelphia Street, Ontario, California 91761-2816 • (909) 472-4100 Fax (909) 472-4244 • www.iapmo.org



## CERTIFICATE OF LISTING

IAPMO Research and Testing, Inc. is a product certification body which tests and inspects samples taken from the supplier's stock or from the market or a combination of both to verify compliance to the requirements of applicable codes and standards. This activity is coupled with periodic surveillance of the supplier's factory and warehouses as well as the assessment of the supplier's Quality Assurance System. This listing is subject to the conditions set forth in the characteristics below and is not to be construed as any recommendation, assurance or guarantee by IAPMO Research and Testing, Inc. of the product acceptance by Authorities Having Jurisdiction.

Effective Date: February 2014

Void After: February 2015

Product: Sanitary Waste Valves

File No. C-6606

Issued To: Hepworth Building Products (a Trading Division Of Wavin Uk Holdings) Ltd.  
Edlington Lane  
Edlington, DO SOUTH YORKSHIRE DN12 1BY  
United Kingdom

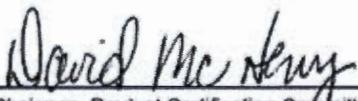
Identification: The product shall be permanently and legibly marked with the following: manufacturer's name, product name (brand), normal size of inlet and outlet, date of manufacture/traceability information, predominant material, direction of flow indicator, and indication of the orientation installation of the device. Product shall also bear the C/IAPMO® triangular certification mark.

Characteristics: Self sealing waterless waste valves to be installed per the manufacturer's installation instructions.

Products listed on this certificate have been tested by an IAPMO R&T recognized laboratory. This recognition has been granted based upon the laboratory's compliance to the applicable requirements of ISO/IEC 17025.

Products are in compliance with the following standard(s):

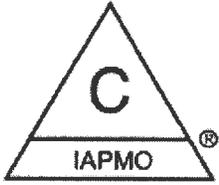
ASME A112.18.8-2009

  
Chairman, Product Certification Committee

  
CEO, The IAPMO Group



This listing period is based upon the last date of the month indicated on the Effective Date and Void After Date shown above. Any change in material, manufacturing process, marking or design without having first obtained the approval of the Product Certification Committee, or any evidence of non-compliance with applicable codes and standards or of inferior workmanship, may be deemed sufficient cause for revocation of this listing. Production of or reference to this form for advertising purposes may be made only by specific written permission of IAPMO Research and Testing, Inc. Any alteration of this certificate could be grounds for revocation of the listing.



# IAPMO RESEARCH AND TESTING, INC. CERTIFICATE OF LISTING

Page 2

Void After: February 2015

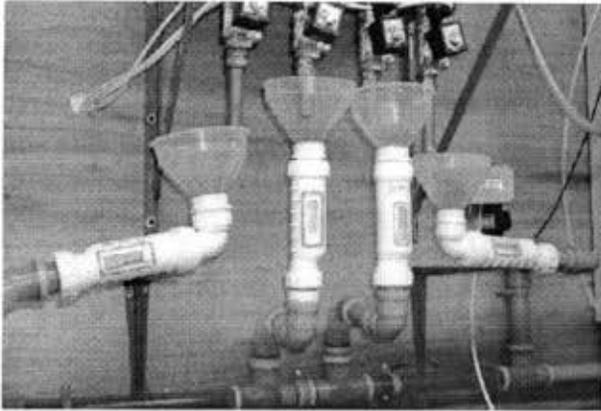
Product: Sanitary Waste Valves

File No. C-6606

Issued To: Hepworth Building Products (a Trading Division Of Wavin Uk Holdings) Ltd.

MODELS:

BV1B/U with adapters CV7A/U, CV7B/U, CV11/U



## **HepvO Waste Valve Long-term cycling tests**

**Status Report – September 5th, 2014**

The test rig completes 36 cycles per day and has run for a total of 3533 days.  
Total complete cycles is **127,188**

A cycle comprises:-

Flushing water of varying durations –	This opens the valve
Negative air of varying pressures –	This opens the valve
Positive air pressure -	This tightly closes the valve.

There are 4 valves 2 x 32mm(1 ¼") and 2 x 40mm(1 ½") installed horizontally and vertically.

The rig runs 24 hours per day and has periods of high/medium/low/no activity to simulate typical operating conditions in a 3 storey building.

It has been running continuously for more than 8 years.

### **1. SUBJECT TO FLUSHING WATER**

32mm(1 ¼") Horizontal & Vertical - 15 times per cycle - 1,907,820 openings to date

40mm(1 ½") Horizontal & Vertical - 9 times per cycle - 1,144,692 openings to date

### **2. SUBJECT TO AIR PRESSURE ( both + and - )**

**Negative Pressure - Opens Valve**

All Valves - 15 per cycle – 1,907,820 times to date

**Positive Pressure - Closes Valve**

All Valves – 15 per cycle – 1,907,820 times to date

### **3. EACH VALVE HAS OPENED IN TOTAL (BY WATER OR AIR)**

32mm(1 ¼") Horizontal & Vertical – 3,815,640 times to date

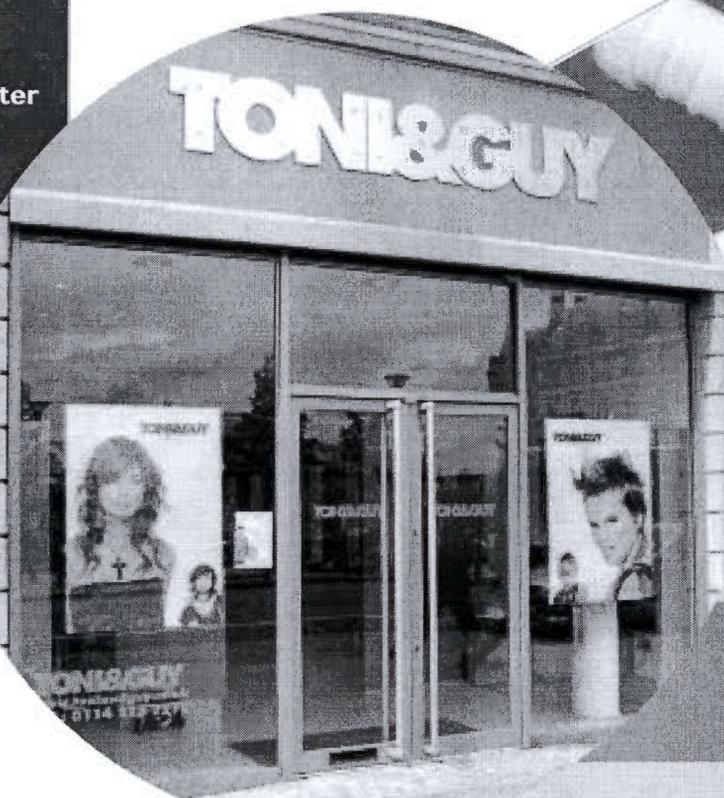
40mm(1 ½") Horizontal & Vertical – 3,052,512 times to date

# Hep<sub>v</sub>O<sup>®</sup>

Hepworth Plumbing Products offers a hygienic self-sealing waste valve that provides an alternative to traditional water seal traps or 'U' bends. It provides simplified installation and greater freedom in room layout.

**Toni & Guy Add Style And Performance To Salon Wash Basins**

# Case Study



## Specification

Hep<sub>v</sub>O<sup>®</sup> complies with the requirements of BS5572:1994 Code of Practice for Sanitary pipework and Document H of the Building Regulations 1985 'Drainage and Waste Disposal'.

**Hep<sub>v</sub>O<sup>®</sup> Self-sealing Waste Valves**

Above Ground Plastics and Hep<sub>v</sub>O\*

Pressure Pipe & Duct

Orders & Enquiries

Technical Support

Literature

Orders & Enquiries

Telephone 01709 856400 Fax 01709 856401

Telephone 01709 856406 Fax 01709 856407

Telephone 01709 856408 Fax 01709 856409

Telephone 01709 856402 Fax 01709 856403



# Hep<sub>v</sub>O<sup>®</sup>



Hep<sub>v</sub>O\* Chris Story at work



Hep<sub>v</sub>O\* The wash basins



Hep<sub>v</sub>O\* The valve and flexible waste pipe

## Toni & Guy Add Style And Performance To Salon Wash Basins

The Toni & Guy hairdressing salon in Sheffield has become the latest 'convert' to the advanced pipe systems manufactured by Hepworth Plumbing Products, part of Hepworth Building Products which has its headquarters in the city. Innovations from Hepworth, including the Hep<sub>v</sub>O\* waste valve, have proved the ideal solution to dealing with the colorants, perming solutions and other chemicals used, whilst avoiding wash basin blockages.

### 700 Customers A Week

The salon washes, cuts and styles some 700 customers in an average week. With around 40 per cent of UK women using hair colorants, the basin waste systems have to handle not only shampoo and conditioner but a variety of strong and viscous chemicals, some of which have high alkaline or acid contents.

The basins were previously fitted with standard 'U' bends or water seal traps. However, they had to be unblocked every month as hair and treatments accumulated in the traps, hindering the free flow of waste water. By contrast the Hep<sub>v</sub>O\* valve makes use of a special membrane which opens to allow water to flow through it but closes to create an air tight seal when the flow ceases. In the open position it is, in effect, a straight tube which, therefore, assists free passage of waste.

### Blockages Eliminated

Fitted neatly under each of the salon's basins, the valves have eliminated blockages, contributing not only to reduced maintenance costs but also to the high standards of hygiene demanded by Toni & Guy.

At the salon, the Hep<sub>v</sub>O\* valves are used in conjunction with another Hepworth system - HepFlex\* Waste. This flexible pipe system simplifies installation where access is limited or wherever using rigid pipe and bends would be unnecessarily complex.

Says Chris Story, Toni & Guy franchisee in Sheffield: "There are probably few applications which demand so much of the wash basin systems but Hep<sub>v</sub>O\* seems to handle the challenge with ease, leaving us to get on with looking after our clients."

# Case Study



**Hepworth**  
PLUMBING PRODUCTS

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## HepvO In-Line Sanitary Waste Valve

August 5, 2013

I'm drafting this letter based on over 5 years' experience using the HepvO in-line sanitary waste valve in high volume RV production with industry-leading manufacturers. It has clearly brought multiple values to our industry and enhanced our plumbing systems for our customers.

The first value the HepvO valve brings is the design and quality. The valve itself is made very durable with thick material and appears very much like a device that is constructed to endure the constant movement of the RV while traveling down the road.

The next value is the permanent odor protection the HepvO valve allows the RV owner due to holding tank odor. Commonly, RV's are stored for periods of time which may allow the normal water seal P-trap to evaporate the water, losing its seal, and allowing tank odors into the RV. Often times, even fulltime RV'ers complain of tank odors with water seal P-traps due to the negative pressure that can exist along with sloshing around again pulling water from the traps while traveling down the road and allowing the odors to be very much present. The HepvO valve does not count on a water seal and therefore, does not allow the tank odor back into the RV.

Another value of the HepvO valve is the ability to free up room during installs due to the design as it can be used either vertically or horizontally. Current P-traps due to design take much more room under showers, inside lav cabinets, under the kitchen sink and within general storage areas with plumbing needed to maintain slope for trap arm plumbing. The HepvO allows installs that can allow the piping to be in the very corner of a storage area giving much more space and is very unnoticeable to the consumer when first opening a cabinet door under a sink.

The HepvO valve is very widely used and continues to grow as more and more installs are incorporating the flexibility into their product during design. The HepvO valve meets the required listing approvals for the RV industry from ASME-ANSI, CSA, and NFPA. I have had five years of experience with the HepvO valve and would certainly recommend the use during plumbing installations.

The HepvO valve can also save the consumer money while considering it does not have water and will not need to be anti-freeze protected while in storage during winter months.

With all the advantages the HepvO valve gives to the consumer and design engineers along with meeting all of our performance expectations including the "no odor," during infrequent and/or frequent use, RV motion while in use, and overall drainage abilities, I have no problems or hesitation recommending HepvO in-line sanitary waste valve in all areas of the plumbing system.

The operating conditions of an RV plumbing system can be even more demanding than in residential housing so, I would be equally happy to recommend its use on all regular plumbing installations in the home.

Jeff Christner  
Compliance Manager



REG NO: 2007/145307/23  
VAT REG NO: 4220242384

## GOLDSMITH PLUMBING CONSULTANTS

TEL: 011 728 8066  
FAX: 011 728 8481  
EMAIL: info@gpc.co.za

1st FLOOR, LEE ANN HOUSE  
75 DOROTHY ROAD, CNR GRANT AVE  
NORWOOD, JOHANNESBURG 2192

13 May 2013

### Report on HepVo waterless waste valves

HepVo Waste Valves were selected for the wastewater, condensate and urinal installations during the rebuild of the Soccer City Stadium in Johannesburg, South Africa, ahead of the 2010 Soccer World Cup Final and for ongoing usage of the stadium.

The products had to meet the requirements of sporadic usage between match days, high peak demands and product longevity.

HepVo was used on all urinals and basins in the public bathrooms. Due to the nature of the installation, all sanitary fittings are vandal proof with the valves installed in a duct directly behind the fitting allowing for service access but keeping them away from the public. Flushing of the urinals is controlled with a solenoid system during matches to ensure clean facilities but saving water, as there is not excessive flushing by the public. On the basins demand taps are installed to prevent water wastage.

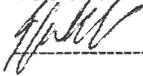
HepVo was used on the sinks and washrooms in the catering areas and suites as the sporadic usage of these facilities meant that a traditional trap would dry out between matches. HepVo was also used on the air con condensate lines in the suites to enable the discharge to be connected into the sewer line without risk of odour ingress from dried out p-traps

The HepVo valve was selected for all of the listed applications for the following reasons. It cannot dry out between usages. It can cope with large flow rates and will prevent any chance of odours being released into the public and catering areas.

The stadium has now been operational for four years having hosted the soccer world cup final, numerous soccer games, rock concerts and several large rugby internationals. To date we have had no reported problems with the valves and all are still working perfectly.

I have also since then specified them on a shopping centre's retrofit to prevent odours on a traditional installation and in a hotel where we also used them with a tundish to collect geyser/boilercondensate discharges. Based on my experience I would have no hesitation to recommend the use of HepvO in all waste and condensate applications.

Yours faithfully,



---

**Ivan Goldsmith**



**Redrow Homes Ltd**

Redrow House

St. David's Park

Flintshire

CH5 3RX

Tel: 01244 520044

Fax: 01244 527428

DX: 708570 ST. DAVID'S PARK

Email: [groupservices@redrow.co.uk](mailto:groupservices@redrow.co.uk)

Website: [www.redrow.co.uk](http://www.redrow.co.uk)

30 September 2013

Ref: SN/Team7795

To Whom it may concern:

On behalf of Redrow Homes plc I am pleased to confirm that we have been using the HepVo Sanitary Waste Valve in our properties for more than seven years and have been happy with the performance of this high quality plumbing fitting. It provides a reliable long term solution and its proven benefits of permanent sewer odour protection and space saving are appreciated by ourselves and our customers. I would have no hesitation in recommending its use in all residential housing waste systems.

Regards,

Roy Jones  
Group Technical Manager

## IPC AMENDMENT STATUS LOG

### PENDING

G:\Commission\plumbhlth\009

Section to Amend	Proponent & Agency	Approved/Denied by Committee	Commission Appr/Deny for Hearing	PUBLIC HEARING	BUSINES S & LABOR INTERIM		Effective Date
IPC 605.2 IRC 2905.2	Murray City Gilbert Gonzales	5-1-14 denied	6-11-14 denied				
312	Jeff Park	5-1-14 approved	6-11-14 approved	9-10-14	10-15-14		
307.5		8-7-14 committee approved the deletion of new section					
403.1		9-4-14 modify					
412.5		9-4-14 modify					
502.4		9-4-14 modify					
608.1.2 & 608.1.3	Michael Moss	12-4-14 approved					
314.2.4.1 and .2	Ray Moore	Tabled					
1002.1, .3 and .4 15A-3-314	Plumb-Tech Design						