

**ASSE 1037-2015/
ASME A112.1037-2015/
CSA B125.37-15**
(reaffirmed 2019)

Performance requirements for pressurized flushing devices for plumbing fixtures



Legal Notice for Harmonized Standard Jointly Developed by ASME, ASSE, and CSA

Intellectual property rights and ownership

As between The American Society of Mechanical Engineers ("ASME"), ASSE International Chapter of IAPMO, LLC. ("ASSE"), and Canadian Standards Association ("CSA") (collectively "ASME, ASSE, and CSA") and the users of this document (whether it be in printed or electronic form), ASME, ASSE, and CSA are the joint owners of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. The unauthorized use, modification, copying, or disclosure of this document may violate laws that protect the intellectual property of ASME, ASSE, and CSA and may give rise to a right in ASME, ASSE, and CSA to seek legal redress for such use, modification, copying, or disclosure. ASME, ASSE, and CSA reserve all intellectual property rights in this document.

Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document's fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party's intellectual property rights. ASME, ASSE, and CSA do not warrant the accuracy, completeness, or currency of any of the information published in this document. ASME, ASSE, and CSA make no representations or warranties regarding this document's compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL ASME, ASSE, and CSA, THEIR RESPECTIVE VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OF, OR USE OF, THIS DOCUMENT, EVEN IF ASME OR CSA HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, ASME, ASSE, and CSA are not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and ASME, ASSE, and CSA accept no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

ASME, ASSE, and CSA have no power, nor do they undertake, to enforce compliance with the contents of the standards or other documents they jointly publish.

Authorized use of this document

This document is being provided by ASME, ASSE, and CSA for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in print or paper form may be distributed only to persons who are authorized by ASME, ASSE, and CSA to have such copies, and only if this legal notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from ASME, ASSE, and CSA; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents hereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.



Update No. 1

ASSE 1037-2015/ASME A112.1037-2015/

CSA B125.37-15

September 2017

Note: For information about the **Standards Update Service**, go to **shop.csa.ca** or e-mail **techsupport@csagroup.org**.

Title: *Performance requirements for pressurized flushing devices for plumbing fixtures* — originally published February 2015

The following revisions have been formally approved and are marked by the symbol delta (Δ) in the margin on the attached replacement pages:

Revised	Preface
New	None
Deleted	None

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

Δ Preface

This is the first edition of ASSE 1037/ASME A112.1037/CSA B125.37, *Performance requirements for pressurized flushing devices for plumbing fixtures*. It supersedes the previous edition of ASSE 1037, published in 1990, and it replaces the requirements for flushometer valves in CSA B125.3, published in 2012.

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

This Standard was prepared by the ASSE/ASME/CSA Harmonization Task Group on Plumbing Fittings, under the jurisdiction of the ASME A112 Standards Committee on Plumbing Materials and Equipment, the ASSE Product Standards Committee, and the CSA Technical Committee on Plumbing Fittings. The CSA Technical Committee operates under the jurisdiction of the CSA Strategic Steering Committee on Construction and Civil Infrastructure.

This Standard has been formally approved by the ASME Standards Committee on Plumbing Materials and Equipment, the ASSE Product Standards Committee, and the CSA Technical Committee on Plumbing Fittings. This Standard was approved as an American National Standard by the American National Standards Institute on January 21, 2015.

ASME Notes:

- (1) This Standard was developed under procedures accredited as meeting the criteria for American National Standards and it is an American National Standard. The Standards Committee that approved the standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed 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.
- (2) ASME does not “approve,” “rate,” or “endorse” any item, construction, proprietary device, or activity.
- (3) ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable letters patent, nor assume any such liability. Users of a standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.
- (4) Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this standard.
- (5) ASME accepts responsibility for only those interpretations of this document issued in accordance with the established ASME procedures and policies, which preclude issuance of interpretations by individuals.
- (6) ASME issues written replies to inquiries concerning interpretation of technical aspects of this Standard. All inquiries regarding this Standard, including requests for interpretations, should be addressed to:
Secretary, A112 Standards Committee
The American Society of Mechanical Engineers Two Park Avenue
New York, NY 10016-5990
A request for interpretation should be clear and unambiguous. The request should
 - cite the applicable clause of the Standard for which the interpretation is being requested.
 - 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 which are necessary to explain the question; however, they should not contain proprietary names or information.ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee.
Interpretations are published on the ASME Web site under the Committee Pages at <http://cstools.asme.org/> as they are issued.

CSA Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- (2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.

- (3) This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.
- (4) To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include “Request for interpretation” in the subject line:
- (a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;
 - (b) provide an explanation of circumstances surrounding the actual field condition; and
 - (c) where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.
- Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.
- (5) This Standard is subject to review five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include “Proposal for change” in the subject line:
- (a) Standard designation (number);
 - (b) relevant clause, table, and/or figure number;
 - (c) wording of the proposed change; and
 - (d) rationale for the change.

ASSE Notes:

(1) Requests for interpretation

Requests for interpretation may be sent to any of the (3) standards organizations. All interpretations are reviewed and agreed upon by the ASSE International, ASME, and CSA prior to response. Requests for interpretations may be sent to:

Staff Engineering Group
ASSE International
18927 Hickory Creek Drive, Suite 220
Mokena, IL 60448-8399

Requests must include:

- Name and contact information of the individual requesting the interpretation;
- Name of organization the individual represents (if any);
- Appropriate references to the standard's clauses that have a bearing on the issue cited in the request;
- A concise explanation of the issue requiring a technical interpretation;
- Any supporting documentation that will assist in understanding or describing the issue;
- Any recommendations the requestor would like to make concerning a possible technical interpretation, along with appropriate justification or comments.

Forms for requests or general guidance can be obtained by emailing staffengineer@asse-plumbing.org.

(2) Endorsement vs. Listing

ASSE International does not endorse any product, but rather lists products that have successfully been applied for and meet the given standard. In exchange the manufacturer is allowed to place the ASSE Seal with the given standard number on their product for public recognition.

In order to apply for listing, visit www.asse-plumbing.org/seal/listing_instructions.html.

(3) Patent rights

ASSE International complies with Section 3.1 of ANSI Essential Requirements — Inclusion of Patents in American National Standards. To understand what is and is not covered, visit www.ansi.org/essentialrequirements.

(4) Committee or Working Group Membership

Each standard is developed by a working group and then approved by the Product Standards Committee and Board of Directors of ASSE International. In order to apply for membership on a working group or any committee, the applications are available at

www.asse-plumbing.org/standards/WorkingGroupApp.pdf.

Standards Update Service

*ASSE 1037-2015/
ASME A112.1037-2015/
CSA B125.37-15
February 2015*

Title: *Performance requirements for pressurized flushing devices for plumbing fixtures*

To register for e-mail notification about any updates to this publication

- go to store.csagroup.org
- click on **Product Updates**

The **List ID** that you will need to register for updates to this publication is **2422076**.

If you require assistance, please e-mail techsupport@csagroup.org or call 416-747-2233.

Visit CSA Group's policy on privacy at www.csagroup.org/legal to find out how we protect your personal information.

*ASSE 1037-2015/ASME A112.1037-2015/
CSA B125.37-15*

***Performance requirements for
pressurized flushing devices for
plumbing fixtures***



®A trademark of the Canadian Standards Association and CSA America Inc., operating as "CSA Group"

*Published in February 2015 by CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3*

*To purchase standards and related publications, visit our Online Store at store.csagroup.org
or call toll-free 1-800-463-6727 or 416-747-4044.*

ISBN 978-1-77139-026-2

© 2015 Canadian Standards Association
All rights reserved. No part of this publication may be reproduced in any form whatsoever
without the prior permission of the publisher.

Commitment for Amendments

This Standard is issued jointly by The American Society of Mechanical Engineers (ASME), the ASSE International Chapter of IAPMO, LLC. (ASSE), and CSA Group. Amendments to this Standard will be made only after processing according to the Standards development procedures of ASME, ASSE, and CSA Group.

The American Society of Mechanical Engineers
(ASME)
Two Park Avenue
New York, NY 10016-5990
USA
www.asme.org

ISBN 978-0-7918-7012-9
© 2015

The 2015 edition of this Standard is being issued with an automatic addenda subscription service. The use of addenda allows revisions made in response to public review comments or committee actions to be published as necessary.

Published in February 2015 by
CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard
Toronto, Ontario, Canada
M9W 1R3
1-800-463-6727 ext. 16-747-4044
Visit the CSA Group Online Store at
shop.csa.ca

ISBN 978-1-71139-026-2
© CSA Group — 2015

All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission of the publisher

ASSE International
18927 Hickory Creek Dr, Suite 220
Mokena, IL 60448
Tel: (708) 995-3019
Fax: (708) 479-6139

E-mail: general.info@asse-plumbing.org

www.asse-plumbing.org

© ASSE International— 2015

Contents

ASME A112 Standards Committee on Plumbing Materials and Equipment v

CSA Technical Committee on Plumbing Fittings vii

ASSE Product Standards Committee x

ASME/ASSE/CSA Harmonization Task Group on Plumbing Fittings xi

Preface xii

Section I 1

1 Scope 1

Section II 1

2 Reference publications and definitions 1

2.1 Reference publications 1

2.2 Definitions 2

Section III 3

3 Design and general requirements 3

3.1 Pressures 3

3.2 Temperatures 3

3.3 Backflow prevention 3

3.4 Accessible designs 3

3.5 Control stop 3

3.6 Connections to water supply and fixture 3

3.6.1 Inlet connections 4

3.6.2 Outlet connections 4

3.7 Coatings 4

3.8 PFDs incorporating electrical features 4

3.8.1 General 4

3.8.2 Testing 4

Section IV 4

4 Performance requirements and test methods 4

4.1 General 4

4.1.1 Preconditioning 4

4.1.2 Installation for testing 4

4.1.3 Test conditions 4

4.1.4 Order of tests 4

4.2 Pressure test 4

4.2.1 Purpose 4

4.2.2 Procedure 5

4.2.3 Performance criteria 5

4.3 Back siphonage test — Non-tank type PFDs 5

4.3.1 Purpose 5

4.3.2 Procedure 5

4.3.3	Performance criteria	5
4.4	Backflow test — Tank type PFDs	5
4.4.1	Purpose	5
4.4.2	Procedure	5
4.4.3	Performance criteria	6
4.5	Hydraulic performance tests	6
4.5.1	Purpose	6
4.5.2	Procedure	6
4.5.3	Performance criteria	6
4.6	Operating requirements	6
4.6.1	Purpose	6
4.6.2	Procedure	7
4.6.3	Performance criteria	7
4.7	Life cycle test	7
4.7.1	Purpose	7
4.7.2	Procedure	7
4.7.3	Performance criteria	8
4.8	Integral control stop life cycle test	8
4.8.1	Purpose	8
4.8.2	Procedure	8
4.8.3	Performance criteria	8
4.9	Hydrostatic pressure test for non-tank type PFDs	9
4.9.1	Purpose	9
4.9.2	Procedure	9
4.9.3	Performance criteria	9
4.10	Hydrostatic pressure test for tank type PFDs	9
4.10.1	Purpose	9
4.10.2	Procedure	9
4.10.3	Performance criteria	9

Section V 9

5 Markings, packaging, and installation instructions 9

5.1	Markings	9
5.2	Water consumption	10
5.3	Visibility of markings	10
5.4	Packaging	10
5.5	Installation instructions	10

Tables

1	— Sequence for hydraulic performance tests	6
---	--	---

Figures

1	— Backflow test set up for tank type PFDs	10
2	— Swing check	11
3	— Poppet type check nozzle type body	11
4	— Poppet type flat or level seat body	11

Preface

This is the first edition of ASSE 1037/ASME A112.1037/CSA B125.37, *Performance requirements for pressurized flushing devices for plumbing fixtures*. It supersedes the previous edition of ASSE 1037, published in 1990 and CSA B125.3, published in 2012.

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

This Standard was prepared by the ASSE/ASME/CSA Harmonization Task Group on Plumbing Fittings, under the jurisdiction of the ASME A112 Standards Committee on Plumbing Materials and Equipment, the ASSE Product Standards Committee, and the CSA Technical Committee on Plumbing Fittings. The CSA Technical Committee operates under the jurisdiction of the CSA Strategic Steering Committee on Construction and Civil Infrastructure.

This Standard has been formally approved by the ASME Standards Committee on Plumbing Materials and Equipment, the ASSE Product Standards Committee, and the CSA Technical Committee on Plumbing Fittings. This Standard was approved as an American National Standard by the American National Standards Institute on January 21, 2015.

ASME Notes:

- (1) *This standard was developed under procedures accredited as meeting the criteria for American National Standards and it is an American National Standard. 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 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.*
- (2) *ASME does not “approve,” “rate,” or “endorse” any item, construction, proprietary device, or activity.*
- (3) *ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable letters patent, nor assume any such liability. Users of a standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.*
- (4) *Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this standard.*
- (5) *ASME accepts responsibility for only those interpretations of this document issued in accordance with the established ASME procedures and policies, which precludes the issuance of interpretations by individuals.*
- (6) *ASME issues written replies to inquiries concerning interpretation of technical aspects of this Standard. All inquiries regarding this Standard, including requests for interpretations, should be addressed to:
Secretary, A112 Standards Committee
The American Society of Mechanical Engineers Two Park Avenue
New York, NY 10016-5990
A request for interpretation should be clear and unambiguous. The request should*
 - *cite the applicable edition of the Standard for which the interpretation is being requested.*
 - *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, which are necessary to explain the question; however, they should not contain proprietary names or information.*

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee.

Interpretations are published on the ASME Web site under the Committee Pages at <http://cstools.asme.org/> as they are issued.

CSA Notes:

- (1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
- (2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*

- (3) This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.
- (4) To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include “Request for interpretation” in the subject line:
- (a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;
 - (b) provide an explanation of circumstances surrounding the actual field condition; and
 - (c) where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.
- Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.
- (5) This Standard is subject to review five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include “Proposal for change” in the subject line:
- (a) Standard designation (number);
 - (b) relevant clause, table, and/or figure number;
 - (c) wording of the proposed change; and
 - (d) rationale for the change.

ASSE Notes:

(1) Requests for interpretation

Requests for interpretation may be sent to any of the (3) standards organizations. All interpretations are reviewed and agreed upon by the ASSE International, ASME, and CSA prior to response. Requests for interpretations may be sent to:

Staff Engineering Group
ASSE International
18927 Hickory Creek Drive, Suite 220
Mokena, IL 60448-8399

Requests must include:

- Name and contact information of the individual requesting the interpretation;
- Name of organization the individual represents (if any);
- Appropriate references to the standard's clauses that have a bearing on the issue cited in the request;
- A concise explanation of the issue requiring a technical interpretation;
- Any supporting documentation that will assist in understanding or describing the issue;
- Any recommendations the requestor would like to make concerning a possible technical interpretation, along with appropriate justification or comments.

Forms for requests or general guidance can be obtained by emailing staffengineer@asse-plumbing.org.

(2) Endorsement vs. Listing

ASSE International does not endorse any product, but rather lists products that have successfully been applied for and meet the given standard. In exchange the manufacturer is allowed to place the ASSE Seal with the given standard number on their product for public recognition.

In order to apply for listing, visit www.asse-plumbing.org/seal/listing_instructions.html.

(3) Patent rights

ASSE International complies with Section 3.1 of ANSI Essential Requirements — Inclusion of Patents in American National Standards. To understand what is and is not covered, visit www.ansi.org/essentialrequirements.

(4) Committee or Working Group Membership

Each standard is developed by a working group and then approved by the Product Standards Committee and Board of Directors of ASSE International. In order to apply for membership on a working group or any committee, the applications are available at

www.asse-plumbing.org/standards/WorkingGroupApp.pdf.

ASSE 1037-2015/ASME A112.1037-2015/ CSA B125.37-15

Performance requirements for pressurized flushing devices for plumbing fixtures

Section I

1 Scope

1.1

This Standard covers pressurized flushing devices (PFDs) intended to flush water closets, urinals, and other plumbing fixtures and specifies requirements for materials, design, methods of operation, test methods, and markings.

1.2

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard.

Notes accompanying sections do not include requirements or alternative requirements; the purpose of a note accompanying a section is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

1.3

SI units are the units of record in Canada. In this Standard the inch/pound units are shown in parentheses.

The values stated in each measurement system are equivalent in application; however, each system is to be used independently. Combining values from the two measurement systems can result in non-conformance with this Standard. All references to gallons are to U.S. gallons.

Section II

2 Reference publications and definitions

2.1 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.