ANSI/CAN/ASSE/IAPMO 1055-2020

Performance Requirements for

Chemical Dispensers with Integral Backflow Protection

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National Standard of Canada

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ASSE International Foreword

This foreword is not part of the standard. However, it is offered to provide background information.

ASSE International is dedicated to the preservation of public health and safety through “Prevention Rather Than Cure.”

Prevention of contamination or pollution of potable water in plumbing systems is one of the major objectives of ASSE’s standards program, which is addressed to the development and promulgation of standards embracing performance criteria.

In industrial and institutional cleaning operations, it is desirable and convenient to dispense cleaning solutions derived from potable water and concentrated products. A dispensing device connected to potable supply constitutes a cross-connection, which could be a source of contamination to the potable water. Devices providing this function often contain features that are intended to prevent this contamination. This standard identifies accepted methods of backflow protection, as well as test methods for evaluating backflow systems incorporated into a chemical dispensing system.

Many chemical dispensing systems utilize a means of backflow protection known as an elastomer gap. This device is a backflow preventer with integral air inlet valve behaving similarly to a pressure vacuum breaker (PVB). As such, the appropriate tests from ASSE 1020 and the CSA B64 series have been integrated into the 2020 revision for further rigor.

Recognition is made of the time volunteered by members of this working group and the support of manufacturers, who also participated meetings for this standard.

This standard does not imply ASSE International’s endorsement of a product which conforms to these requirements. Compliance with this standard does not imply acceptance by any code body.

This standard was promulgated in accordance with procedures developed by the American National Standards Institute (ANSI).

This edition of the standard was approved by the ASSE Board of Directors on April 14, 2020 as an ASSE International Standard.

IAPMO Preface

This is the first edition of ASSE/IAPMO 1055-2020. This Standard supersedes ASSE 1055-2018.

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

This Standard was developed by the ASSE Technical Subcommittee. This standard was approved by the ASSE Product Standards Committee in accordance with the *ANSI Essential Requirements: Due process requirements for American National Standards* and the IAPMO Plumbing Standards Committee in accordance with *SCC Requirements and Guidance - Accreditation of Standards Development Organizations* and *IAPMO Policies and Procedures for Development of National Standards of Canada*. This Standard was approved as an American National Standard on 2020-09-17 and as a National Standard of Canada on 2020-12-24 it will be reviewed before 2024-12-24.

Notes:

(1) The use of the singular does not exclude the plural (and vice versa) when the sense allows.

(2) This standard was developed in accordance with the IAPMO procedures accredited as meeting the criteria for Canadian National Standard. The IAPMO Standards Committee that approved this Standard was balanced to assure that individuals from competent and concerned interests had an opportunity to participate. During its development, this Standard was made available for public review, thus providing an opportunity for additional input from industry, academia, regulatory agencies, and the public at large.

(3) This Standard was developed by consensus, which is defined as substantial agreement; consensus implies much more than a simple majority, but not necessarily unanimity. It is consistent with this definition that a member of the relevant IAPMO Standards Committee can be included in the committee roster and yet not be in full agreement with all sections of this Standard.

(4) 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.

(5) The significant portion of the subject matter in this standard can be grouped in the International Classification for Standards (ICS 23.060.99 Valves: Other valves)

(6) IAPMO Standards are subject to periodic review at a minimum of 4 years from date of approval. Suggestions for their improvement will be referred to the relevant IAPMO Standards Committee. To submit a proposal for change to this Standard, you may send the following information to the International Association of Plumbing and Mechanical Officials, Attention Standards Department, at standards@IAPMOstandards.org or, alternatively, at 4755 East Philadelphia Street, Ontario, California, 91761, and include "Proposal for change" in the subject line:

- *(a) standard designation (number);*
- *(b) relevant section, table, or figure number, as applicable;*
- *(c) wording of the proposed change, tracking the changes between the original and the proposed wording; and*
- *(d) rationale for the change.*

(7) Requests for interpretation should be clear and unambiguous. To submit a request for interpretation of this Standard, you may send the following information to the International Association of Plumbing and Mechanical Officials, Attention Standards Department, at standards@IAPMOstandards.org or, alternatively, at 4755 East Philadelphia Street, Ontario, California, 91761, and include "Request for interpretation" in the subject line:

(a) the edition of the standard for which the interpretation is being requested;
(b) the definition of the problem, making reference to the specific section and, when appropriate, an illustrative sketch explaining the question;
(c) an explanation of circumstances surrounding the actual field conditions; and
(d) the request for interpretation phrased in such a way that a "yes" or "no" answer will address the issue.

(8) Interpretations are processed in accordance with IAPMO's accredited standards development procedures. IAPMO issues written replies to inquiries concerning interpretation of technical aspects of this Standard.

(9) IAPMO accepts responsibility only for those interpretations of this Standard issued in accordance with the accredited IAPMO policies and procedures, which precludes the issuance of interpretations by individuals.

(10) IAPMO does not "approve," "rate," or "endorse" any item, construction, proprietary device, or activity.

(11) Attention is drawn to the possibility that some of the elements of this Standard may be the subject of patent rights. IAPMO is not to be held responsible for identifying any or all such patent rights. Users of this Standard are expressly advised that determination of the validity of any such patent rights is entirely their responsibility.

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(13) Participation by federal or state agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this Standard.

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Performance Requirements for **Chemical Dispensers with Integral Backflow Protection**

Section I

1.0 General

1.1 Application

Chemical dispensing systems (herein referred to as the “device”) provide a means of mixing potable water with chemicals to provide the user with a chemical solution which is ready for use. The amount of dilution shall be fixed or adjustable. Devices covered by this standard are intended for stationary installations, mobile devices where the orientations are fixed, and hand-held devices.

1.2 Scope

1.2.1 Description

This standard applies to those devices classified as chemical dispensing systems and shall be protected by an air gap complying to ASME A112.1.3-2000 (R2015), an integral elastomer gap, or an Atmospheric Vacuum Breaker (AVB). If an AVB is used as its method of backflow protection, it must conform with ASSE 1001 or CSA B64.1.1.

1.2.2 Pressure Range

Devices covered by this standard are designed to withstand a water supply pressure of at least 861.9 kPa (125.0 psi) and operate within the full pressure range as indicated by the manufacturer.

1.2.3 Temperature Range

Cold water devices covered by this standard are designed to withstand temperatures up to 48.9 °C (120 °F) and operate within the full temperature range as indicated by the manufacturer.

Hot water devices covered by this standard are designed to withstand temperatures up to 82.2 °C (180 °F) and operate within the full temperature range as indicated by the manufacturer.

1.3 Mechanical Function

1.3.1 Elastomeric Gap

The elastomeric gap shall be loaded to a normally closed position under static conditions.

1.3.2 Air Inlet

The air inlet shall be force loaded (biased) to a normally open position when the line pressure is atmospheric. It shall be located above the pipeline so that water can drain from it by gravity.

1.3.3 Locations

Devices shall have an air inlet that opens to atmosphere. The air inlet and the atmospheric vent shall be located at or downstream of the air gap or integral elastomer gap and upstream of the outlet so that water can drain from the vent by gravity.