ASSE 1016-2017/ ASME A112.1016-2017/ CSA B125.16-17

Performance requirements for automatic compensating valves for individual showers and tub/shower combinations

ASME SETTING THE STANDARD

SANITARY ASSE ENGINEERING Prevention Rather Than Cure

CSA Group

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Performance requirements for automatic compensating valves for individual showers and tub/shower combinations

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Preface

This is the second edition of ASSE 1016/ASME A112.1016/CSA B125.16, *Performance requirements for automatic compensating valves for individual showers and tub/shower combinations*. It supersedes the previous edition published in 2011.

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 Main Committee, 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 will be submitted for formal approval by the ASME Standards Committee on Plumbing Materials and Equipment, the ASSE Product Standards Committee and the CSA Technical Committee. This Standard was approved as an American National Standard by the American National Standards Institute on January 6, 2017.

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ASSE Foreword

This Foreword is not part of the Standard; however, it is offered to provide background information.

Several suggestions received from persons having had a disturbing experience with shower valves which were potentially hazardous allowing sudden surges of high temperature water to flow from the shower head prompted the initiation of the ASSE 1016 standard in 1973. Documents and field experiences relating to the behavioural characteristics of different classes of devices were studied and evaluated, and from this, the standard text was developed. Since that time, extensive research has been conducted toward the development of this standard in its current form.

This harmonized Standard was developed in response to an industry request for a harmonized set of requirements between ASSE 1016-2005 and Clause 5.10 of ASME A112.18.1-2005/CSA B125.1-05. In recognition of energy and water efficiency requirements, which have further reduced the maximum flow rate requirements in certain areas, testing requirements to address the performance of shower valves rated for shower heads and body sprays rated at less than 9.5 L/min (2.5 GPM) flow rates were needed to be addressed.

In 2005 the CSA/ASME Joint Harmonization Task Group formed a task force FT-05-24 to accomplish this end. The TF was joined by members of ASSE and their historical 1016 Working Group. The first meeting was held on August 30, 2007.

The shower control valves covered by this Standard are only those which will, in cases of changes to the incoming water supply pressure or temperature, reduce the risk of scalding and thermal shock by protecting the bather from exposure to such changes in water temperature that produce these effects.

These devices generally have one cold water inlet connection, one hot water inlet connection, and a mixed water outlet connection(s).

This Standard provides engineers, designers, manufacturers, health authorities, inspection agencies and others with a set of minimum performance requirements for such individual automatic compensating valves.

Recognition is made of the time volunteered by members of the Joint Harmonization Task Group and Task Force, the ASME members, ASSE members and CSA members and of the support of the manufacturers who also participated in the meetings for this standard.

The Standard does not imply ASME, ASSE, or CSA's endorsement of a product which conforms with these requirements.

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

It is recommended that these devices be installed consistent with local codes.

ASSE 1016-2017/ ASME A112.1016-2017/ CSA B125.16-17 Performance requirements for automatic compensating valves for individual showers and tub/shower combinations

Section I

1 Scope

1.1

This Standard applies to automatic compensating valves intended to be installed at the point of use, where the user has access to flow or final temperature controls, and where no further mixing occurs downstream of the device.

Note: *In this Standard, automatic compensating valves are also referred to as devices.*

1.2

This Standard covers automatic compensating valves intended to control the water temperature to wall or ceiling mounted

a) hand-held showers;
b) shower heads;
c) body sprays either in individual shower or tub/shower combination fittings; and
d) tub spouts when part of tub/shower combination fittings.

1.3

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 clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause 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.

1.4

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.

ASME (The American Society of Mechanical Engineers)/CSA Group

ASME A112.18.1-2012/CSA B125.1-12
Plumbing supply fittings

ASSE International

Plumbing Dictionary Sixth Edition — 2007

2.2 Definitions

In addition to the definitions in ASME A112.18.1/CSA B125.1 and in the ASSE *Plumbing Dictionary*, the following definitions shall apply in this Standard:

Automatic compensating valve — a water-mixing valve that is supplied with hot and cold water and that provides a means of automatically maintaining the water temperature selected for an outlet.
Note: *Automatic compensating valves are used to reduce the risk of scalding and thermal shock.*

Combination pressure-balancing and thermostatic compensating valve (Type T/P) — a compensating valve that senses inlet supply hot and cold water pressures before mixing, senses the water temperature at the outlet, and compensates for pressure and thermal variations to maintain the water temperature at the outlet.

Pressure-balancing compensating valve (Type P) — a compensating valve that senses inlet supply hot and cold water pressures and compensates for variations in the inlet supply pressures to maintain the water temperature at the outlet.

Thermostatic compensating valve (Type T) — a compensating valve that senses the water temperature at the outlet and compensates for thermal variations to maintain the water temperature at the outlet.

Initial outlet set temperature — the average of the values of the mixed temperature measured at the outlet for the 10 s immediately preceding the temperature change measured at the outlet resulting from a pressure or temperature change.