American National Standard

ASSE/ANSI 1017-2023

Performance Requirements for

Temperature Actuated Mixing Valves for Hot Water Distribution Systems

ASSE Board Approved: February 2023
ANSI Approved: April 2023
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Approved American National Standard ANSI

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General Information

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ASSE International
Mokena, Illinois

Foreword

This foreword shall not be considered a part of the standard; however, it is offered to provide background information.

ASSE standards are developed in the interest of consumer safety.

ASSE International considers product performance standards to be of great value in the development of improved plumbing systems.

The working group that developed this standard was set up within the framework of the Product Standards Committee of ASSE International.

In the interest of consumer safety, this standard was originally issued in April 1976; accepted by the American National Standards Institute (ANSI) in 1979 and revised in April 1986, 1998, 2003, 2009 and 2023.

Water mixing (also defined as tempering or blending) valves are used extensively in water service applications to mix hot and cold water to reduce high service water temperature to the building distribution piping system.

This class of valve is intended to be installed at the hot water source. These devices are designed for primary automatic control of the hot water distribution temperature within a reasonable degree of uniformity.

To provide final temperature control, ASSE 1017 devices should be supplemented by a point-of-use device or in-line device designed to control final temperature. High temperature limit alarms and/or temperature limiting devices may also be used to monitor or further control point of use water temperature.

Recognition is made of the time volunteered by members of this working group and of the support of manufacturers who also participated in 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.

It is recommended that these devices be installed consistent with local codes by qualified and trained professionals.

This standard was promulgated in accordance with the ASSE Procedures for Standards Development as approved by the American National Standards Institute (ANSI).

2022 Product Standards Committee

Tsan-Liang Su, PhD – Chairman
Stevens Institute of Technology
Hoboken, NJ, USA

Karl Abrahamson
Saint Paul Department of Safety and Inspections
Cottage Grove, MN, USA

John Bertrand
Watts Water Technologies
Cleveland, OH, USA

Julia Briggs
NSF International
Ann Arbor, MI, USA

William Briggs Jr.
TSF Engineering
New York, NY, USA

Terry Burger (non-voting)
ASSE International
Cleveland, OH, USA

William Chapin
Professional Code Consulting, LLC
Cullman, AL, USA

Mark E. Fish
Zurn Industries, LLC
Cary, NC, USA

Fernando Fernandez
Toto USA Inc.
Ontario, CA, USA

Ron George
Plumb-Tech Design & Consulting Services LLC
Newport, MI, USA

Mark Gibeault
Kohler Company
Kohler, WI, USA

Daniel Gleiberman
Sloan Valve Company
Los Angeles, CA, USA

Brandon Gunnell
Precision Plumbing Products
Portland, OR, USA

Chris Haldiman
Watts Water Technologies
Springfield, MO, USA

Kevin Hardwick
Precision Plumbing Products
Portland, OR, USA

John F. Higdon, P.E.
Merit Brass Company
Matthews, NC, USA

Mike Johnson
Delta Faucet
Indianapolis, IN, USA

Jim Kendzel
American Supply Association
Itasca, IL, USA

Ramiro Mata
ASPE
Mentor, OH, USA

Anthony Menafro
State of NY Department of Community Affairs
Trenton, NJ, USA

Bob Neff
Delta Faucet
Pendleton, IN, USA

David Orton
NSF International
Ann Arbor, MI, USA

Thomas Pitcherello
Self
Bordentown, NJ, USA

Daniel Rademacher
Viega, LLC
Butte, MT, USA

Shabbir Rawalpindiwala
Self
Kohler, WI, USA

Billy Smith
ASPE
Montgomery, AL, USA

Chris Wright
Ontario Pipe Trades Council
Dundalk, ON, Canada

Chris White (non-voting)
ASSE International
Mokena, IL, USA

1017 Working Group

Julius Ballanco
JB Engineering
Munster, IN

Terry Burger
ASSE International
Cleveland, OH

William Chapin
Professional Code Consulting, LLC
Cullman, AL

Rick Cota
Leonard Valve
Cranston, RI

Mahyar Esmaili
Watts Water Technologies
North Andover, MA

Ron George
Plumb-Tech Design & Consulting Services LLC
Newport, MI

Jim Graves
Morris Group International
Lake Bluff, IL

Misty Guard
Regulosity LLC
Wauwatosa, WI

Chris Haldiman
Watts Water Technologies
Springfield, MO

Paul Knight
Armstrong International – Hot Water Group
Three Rivers, MI

Ross Koirala
Reliance Worldwide Corp.
Toronto, ON Canada

Thomas Lentine
Holby Valve Inc.
Newark, NJ

Matt Lunn
Lawler Manufacturing
Indianapolis, IN

Mannan Mohammed
Reliance Worldwide Corp.
Toronto, ON, Canada

Sam Raymakers
Resideo Technologies/Honeywell Home
Golden Valley. MN

Dan Tomlinson
Armstrong International – Hot Water Group
Three Rivers, MI

Tim Weragoda
Reliance Worldwide Corp.
Atlanta, GA

Cameron West
Lawler Manufacturing
Indianapolis, IN

Mario Valentin
Vernet
Indianapolis, IN

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1.0 General

1.1 Application

Temperature Actuated Mixing Valves for Hot Water Distribution Systems are used for controlling water temperatures in hot water systems and shall be installed at the hot water source. They are not intended for point-of-use temperature limiting, control or end use applications including emergency eyewash and shower equipment.

1.2 Scope

1.2.1 Description

Temperature Actuated Mixing Valves for Hot Water Distribution Systems (herein referred to as "device") shall consist of a hot water inlet connection, a cold water inlet connection, a mixed water outlet connection, a thermal element or thermostatic sensor and a means for adjusting the mixed water outlet temperature. These devices can be either mechanically actuated or electronically controlled device.

1.2.2 Connections

Dimensions of pipe threads, flanges and other connections shall conform to appropriate industry standards.

1.2.3 Maximum Working Pressure

The maximum static pressure of the device shall have a minimum value of 125.0 psi (861.9 kPa).

1.2.4 Temperature Range

a) **Supply Water Temperature Range**
The hot water supply temperature range shall be 125.0 °F - 180.0 °F (51.7 °C - 82.2 °C) and the cold water supply temperature range shall be 35.0 °F - 80.0 °F (1.7 °C - 26.7 °C).

b) **Outlet Water Temperature Range**
The device shall be capable of supplying the hot water distribution system with a minimum adjustable range of 105.0 °F - 120.0 °F (40.6 °C - 48.9 °C), provided the hot water supply temperature is at least 20.0 °F (11.0 °C) greater than the outlet water temperature setting.