Australian Standard™

# Water supply—Valves for the control of hot water supply temperatures

# Part 2: Tempering valves and end-of-line temperature-actuated devices

This Australian Standard was prepared by Committee WS-026, Valves Primarily for Use in Warm and Hot Water Systems. It was approved on behalf of the Council of Standards Australia on 13 July 2001 and published on 8 February 2002.

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The following interests are represented on Committee WS-026:

AUSTAP

Australian Industry Group

Business New Zealand

Consumers Federation of Australia

Gas Appliance Manufacturers Association of Australia

Housing Industry Association

Institute of Hospital Engineering Australia

Master Plumbers and Mechanical Contractors Association of NSW

Master Plumbers, Gasfitters and Drainlayers New Zealand

NSW Health Department

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# Water supply—Valves for the control of hot water supply temperatures

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# PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee WS-026, Valves Primarily for Use in Warm and Hot Water Systems. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide manufacturers with requirements for tempering valves and end-of-line temperature-actuated devices that give reasonable protection to users against exposure to high or excessive fluctuations in mixed water temperatures caused by the following:

(a) Maintaining an outlet temperature within specified limits, including shut-off of the cold water supply.

(b) Closing the outlet when the mixed water temperature exceeds a specified maximum.

This Standard is Part 2 of a suite of Standards that covers valves for the control of hot water temperatures, as follows:

| | |
|---|---|
| AS | |
| 4032 | Water supply — Valves for the control of hot water supply temperatures |
| 4032.1 | Part 1: Thermostatic mixing valves—Materials, design and performance requirements |
| 4032.2 | Part 2: Tempering valves and end-of-line temperature-actuated devices (this Standard) |

Upon completion, the suite will include the following:

Part 3: Mandatory field testing, maintenance and replacement of thermostatic elements

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

This Standard necessarily deals with existing conditions, but is not intended to discourage innovation or to exclude materials, equipment and methods that may be developed in the future. Revisions will be made from time to time in view of such developments, and amendments to this edition will be made only when absolutely necessary.

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FOREWORD

The type and nominal size of tempering valves and ancillary equipment (if any) are selected with consideration of factors that include the following:

**Tempering valves**

*General*

(a) Nominal size (DN).

(b) Number and size of water inlets and outlets.

(c) Number and size of connections.

(d) Minimum and maximum dynamic pressures and cooperating temperatures for hot and cold water.

(e) Minimum and maximum flow rates.

(f) Whether provided with integral cross–flow prevention devices

*Ancillary equipment—Pressure control devices*

Maximum pressure ratio (cold to hot or hot to cold)

Maximum continuous working pressures for hot and cold water

**End-of-line temperature-actuated devices**

*General*

(i) Minimum and maximum dynamic pressures and operating temperatures for hot and cold water

(ii) Flow rates

STANDARDS AUSTRALIA

# Australian Standard

# Water supply—Valves for the control of hot water supply temperatures

## Part 2: Tempering valves and end-of-line temperature-actuated devices

## SECTION 1 SCOPE AND GENERAL

### 1.1 SCOPE

This Standard specifies requirements for the design, construction, testing and performance of—

(a) tempering valves of nominal sizes not larger than DN 32; and

(b) end-of-line temperature-actuated devices of nominal size DN 15,

for use with hot water at—

(i) continuous operating temperature not exceeding 85°C;

(ii) temperature under emergency conditions, not exceeding 99°C; and

(iii) continuous working pressure not exceeding 1400 kPa.

The major requirement of the testing procedures is that the device under test does not permit the continuous discharge of water from the outlet in excess of 50°C.

Discharges of water with a temperature in excess of this figure, which comply with the specified cumulative time/temperature factors, are acceptable.

### 1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS
1349 Bourdon tube pressure and vacuum gauges
1432 Copper tubes for plumbing, gasfitting and drainage applications
1722 Pipe threads of Whitworth form
1722.1 Part 1: Sealing pipe threads
1722.2 Part 2: Fastening pipe threads
2345 Dezincification resistance of copper alloys
1837 Wrought alloy steels—Stainless steel bars and semi-finished products
3688 Water supply—Copper and copper alloy body compression and capillary fittings and threaded-end connectors

AS/NZS
3500 National plumbing and drainage code
3500.0 Part 0: Glossary of terms
4020 Products for use in contact with drinking water