



# **Valves primarily for use in heated water systems**

## **Part 1: Protection valves**



## AS 1357.1:2019

This Australian Standard® was prepared by WS-026, Valves primarily for use in Warm and Hot Water Systems. It was approved on behalf of the Council of Standards Australia on 10 December 2019.

This Standard was published on 20 December 2019.

The following are represented on Committee WS-026:

- Australian Building Codes Board
- Australian Chamber of Commerce and Industry
- Australian Industry Group
- Gas Appliance Manufacturers Association of Australia
- Institute of Healthcare Engineering
- Master Plumbers Association of NSW
- Master Plumbers Australia
- Plumbing Products Industry Group

This Standard was issued in draft form for comment as DR AS 1357.1:2018.

### **Keeping Standards up-to-date**

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:

[www.standards.org.au](http://www.standards.org.au)



# **Valves primarily for use in heated water systems**

## **Part 1: Protection valves**

Originated as AS B271—1968.  
Revised and redesignated as AS 1357—1972.  
Revised in part and redesignated as AS 1357.1—1988.  
Previous edition 2009.  
Fifth edition 2019.

### **COPYRIGHT**

© Standards Australia Limited 2019

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth).

## 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, to supersede AS 1357.1—2009, *Valves for use in heated water systems, Part 1: Protection valves*.

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 design, materials and performance requirements for the protection of valves.

Other Standards covering heated water system valves include the following:

AS 1357.2, *Valves primarily for use in heated water systems, Part 2: Control valves*

AS 4032.1, *Water supply — Valves for the control of heated water supply temperatures, Part 1: Thermostatic mixing valves — Materials design and performance requirements*

AS 4032.2, *Water supply — Valves for the control of heated water supply temperatures, Part 2: Tempering valves and end-of-line temperature-actuated devices*

AS 4032.3, *Water supply — Valves for the control of heated water supply temperatures, Part 3: Requirements for field testing, maintenance or replacement of thermostatic mixing valves, tempering valves and end-of-line temperature control devices*

AS 4032.4, *Water supply — Valves for the control of heated water supply temperatures, Part 4: Thermostatically controlled taps for the control of heated water supply temperatures*

The terms “normative” and “informative” are used in Standards 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.

# Contents

|                                                                                                                                                                     |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Preface</b>                                                                                                                                                      | <b>ii</b> |
| <b>Section 1 Scope and general</b>                                                                                                                                  | <b>1</b>  |
| 1.1 Scope and application                                                                                                                                           | 1         |
| 1.1.1 Scope                                                                                                                                                         | 1         |
| 1.1.2 Application                                                                                                                                                   | 1         |
| 1.2 Normative references                                                                                                                                            | 1         |
| 1.3 Terms and definitions                                                                                                                                           | 2         |
| 1.4 Instrumentation                                                                                                                                                 | 4         |
| 1.5 Marking                                                                                                                                                         | 4         |
| <b>Section 2 Materials</b>                                                                                                                                          | <b>5</b>  |
| 2.1 General                                                                                                                                                         | 5         |
| 2.2 Contamination of water                                                                                                                                          | 5         |
| 2.3 Corrosion-resistant metallic materials                                                                                                                          | 5         |
| 2.4 Copper                                                                                                                                                          | 5         |
| 2.5 Copper alloy                                                                                                                                                    | 5         |
| 2.6 Dezincification-resistant (DR) copper alloy                                                                                                                     | 5         |
| 2.7 Stainless steel                                                                                                                                                 | 6         |
| 2.8 Diaphragm materials, and valve seats                                                                                                                            | 6         |
| 2.9 Temperature-sensing probe                                                                                                                                       | 6         |
| 2.10 Other components                                                                                                                                               | 6         |
| 2.10.1 General                                                                                                                                                      | 6         |
| 2.10.2 Plastics materials                                                                                                                                           | 7         |
| <b>Section 3 General design and construction</b>                                                                                                                    | <b>8</b>  |
| 3.1 General                                                                                                                                                         | 8         |
| 3.2 Strength                                                                                                                                                        | 8         |
| 3.2.1 Torque test                                                                                                                                                   | 8         |
| 3.2.2 Leakage test                                                                                                                                                  | 8         |
| 3.3 End connections                                                                                                                                                 | 8         |
| 3.4 Components and valve seats                                                                                                                                      | 8         |
| 3.5 Remanufactured valves                                                                                                                                           | 8         |
| 3.5.1 General                                                                                                                                                       | 8         |
| 3.5.2 Critical components                                                                                                                                           | 8         |
| 3.5.3 Remanufacturing process                                                                                                                                       | 9         |
| 3.5.4 Packaging                                                                                                                                                     | 9         |
| 3.6 Insulation of temperature/pressure-relief valves, temperature-relief valves, expansion control valves and combination high-pressure expansion non-return valves | 9         |
| 3.7 Installation instructions                                                                                                                                       | 10        |
| <b>Section 4 Temperature/pressure-relief valves</b>                                                                                                                 | <b>11</b> |
| 4.1 General                                                                                                                                                         | 11        |
| 4.2 Inlet and drain connections and flow dimensions                                                                                                                 | 11        |
| 4.2.1 Size of connections                                                                                                                                           | 11        |
| 4.2.2 Inlet and drain connections                                                                                                                                   | 11        |
| 4.2.3 Provision for drainage                                                                                                                                        | 12        |
| 4.2.4 Total flow area                                                                                                                                               | 12        |
| 4.2.5 Width of passages                                                                                                                                             | 12        |
| 4.2.6 Minimum orifice                                                                                                                                               | 12        |
| 4.3 Valve seat and disc assemblies                                                                                                                                  | 13        |
| 4.4 Springs pressure-relief function                                                                                                                                | 13        |
| 4.5 Testing                                                                                                                                                         | 15        |
| 4.5.1 Selection of valves for type testing                                                                                                                          | 15        |
| 4.5.2 Test schedule                                                                                                                                                 | 15        |
| 4.5.3 Drain lines                                                                                                                                                   | 16        |

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-