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CAST IRON NON-RETURN VALVES FOR GENERAL PURPOSES

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The following interests are represented on Committee WS/22:

Association of Consulting Engineers Australia
Australian Valve Manufacturers Association
Brisbane City Council
Confederation of Australian Industry
A.C.T. Electricity and Water
Department of Local Government, Qld
Engineering and Water Supply Department, S.A.
Hunter District Water Board
Public Works Department, N.S.W.
Melbourne and Metropolitan Board of Works
Rural Water Commission of Victoria
Society of Mechanical Engineers of Australasia
Victorian Chamber of Manufacturers
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AUSTRALIAN STANDARD

CAST IRON NON-RETURN VALVES FOR GENERAL PURPOSES

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PREFACE

This Standard was prepared by the Association's Committee on Valves for Water Supply Purposes at the request of the Australian Valve Manufacturers' Association.

In the past, cast iron non-return valves have generally been manufactured to BS 4090, *Cast iron check valves for general purposes*, which was subsequently superseded in 1980 by BS 5153 using the same title. (The former covered imperial sizes whereas the latter covers both metric and imperial sizes.) Features of both these Standards have been incorporated within this Standard and assistance gained from these sources is acknowledged.

The committee agreed to exclude tilting disc check valves as a literary search revealed that neither the British Standards Institute nor the American Water Works Association had Standards referring to such valves.

The Standard will be further revised to add performance requirements while retaining essential references of deemed-to-satisfy dimensions.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
CAST IRON NON-RETURN VALVES FOR GENERAL PURPOSES

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard specifies requirements for flanged end, cast iron non-return valves, copper alloy faced, stainless steel faced, or all-iron for general water industry purposes in both buried and above-ground installations, in nominal sizes DN 50 to DN 600. The valves can be installed in either a horizontal or vertical position.

NOTE: Guidelines for purchasers on requirements that must or may need to be agreed upon at time of enquiry or order are given in Appendix A.

1.2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard.

AS
1111 ISO metric hexagon commercial bolts and screws
1112 ISO metric hexagon nuts, including thin nuts, slotted nuts and castle nuts
1204 Structural steels—Ordinary weldable grades
1565 Copper and copper alloys—Ingots and castings
1567 Copper and copper alloys—Wrought rods, bars and sections
1722 Pipe threads of Whitworth form
Part 2: Fastening pipe threads (AS 1722.2)
1830 Iron castings—Grey cast iron
1831 Iron castings—Spheroidal or nodular graphite cast iron
1833 Iron castings—Austenitic cast iron
2129 Flanges for pipes, valves and fittings
2317 Collared eyebolts
2345 An accelerated laboratory test method for assessment of the susceptibility of brass to dezincification
2837 Wrought alloy steels—Stainless steel bars and semi-finished products

BS
1256 Specification for malleable cast iron and cast copper alloy threaded pipe fittings
5292 Specification for jointing materials and compounds for installations using water, low-pressure steam or 1st, 2nd and 3rd family gases

1.3 DEFINITIONS. For the purpose of this Standard, the following definitions apply.

1.3.1 Non-return valve—a valve which prevents reversal of flow by means of a flap or other mechanism.

1.3.2 Class—the maximum working pressure of the valve expressed in hundreds of kilopascals.

1.3.3 Maximum working pressure—the maximum internal working pressure which may be applied to the valve either as a continuous or transient peak pressure.

1.3.4 Maximum working temperature—the maximum internal or external temperature to which the valve is exposed in service.

1.3.5 Face-to-face dimensions—the distance between the two planes perpendicular to the valve axis located at the extremities of the body end ports.

1.3.6 Nominal size (DN). A numerical designation of size which is common to all components in a piping system other than components designated by outside diameters or by thread size. It is a convenient round number for reference purposes and is loosely related to an internal bore diameter.

1.4 VALVE TYPE. Valves shall be of the full bore type, swing action, straight pattern. (For use with the axis of the body end ports horizontal or vertical.)

1.5 DESIGNATION OF SIZE. Valve size shall be designated by the nominal size as follows: DN 50, DN 65, DN 80, DN 100, DN 125, DN 150, DN 200, DN 225, DN 250, DN 300, DN 375, DN 400, DN 450, DN 500, DN 600.

1.6 CLASSIFICATION AND RATING. Cast iron non-return valves shall be classified according to maximum working pressure and working temperatures as given in Table 1.1.

TABLE 1.1
CLASSIFICATION AND RATING

Class	Maximum working pressure kPa	Working temperature °C
14	1 400	−10 to 95
21	2 100	−10 to 95

1.7 TEMPERATURE RATINGS. Restrictions on temperature may be placed by the manufacturer on valves in accordance with this Standard by reason of valve type, trim materials, or other factors, in which case the valves shall be marked with the limiting temperature.