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METERS FOR COLD POTABLE WATER

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The following interests are represented on Committee WS/24:

Australian Electrical and Electronic Manufacturers Association

Confederation of Australian Industry

Department of Local Government, Queensland

Engineering and Water Supply Department, South Australia

Hunter District Water Board

Melbourne and Metropolitan Board of Works

Water Board, Sydney

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AUSTRALIAN STANDARD

METERS FOR COLD POTABLE WATER

AS 3565—1988

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PREFACE

This Standard was prepared by the Association's Committee on Meters for Cold Potable Water.

Attention is drawn to the fact that there may be legal requirements applying to water meters and that these requirements take precedence over the requirements of this Standard.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
METERS FOR COLD POTABLE WATER

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard specifies requirements for volumetric chamber-type meters and turbine-type meters used for measuring the volume of cold potable water in residential, commercial and industrial applications and which have nominal flow rates not greater than 40 kL/h and not greater than 250 kL/h, respectively.

The Standard is applicable to meters which are self-contained and capable of continuously determining, within the accuracy limits set out in the Standard, the volume of water which has flowed through them and which are continuously indicating the volume on a cumulative basis.

NOTE: Installation guidelines are given in Appendix A. Test methods and equipment guidelines are given in Appendix B.

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

AS
1722 Pipe threads of Whitworth form
Part 2: Fastening pipe threads (AS 1722.2)
2129 Flanges for pipes, valves and fittings
2345 An accelerated laboratory test method for assessment of the susceptibility of brass to dezincification

ISO
4064 Measurement of water flow in closed conduits—Meters for cold potable water
Part 1: Specification (ISO 4064/1)
Part 3: Test methods and equipment (ISO 4064/3)

BS
6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water

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

1.3.1 Flow rate (q)—the volume of water passing through the meter in unit time expressed in kilolitres per hour (kL/h).

1.3.2 Volume (V)—the quantity of water which has passed through the meter, expressed in kilolitres (kL).

1.3.3 Nominal flow rate (q_n)—the designated flow rate at which the meter will operate continuously, within the limits of maximum permissible error (see Clause 3.1), expressed in kilolitres per hour (kL/h). Designated values of q_n and corresponding nominal meter sizes are shown in Figures 1.1 and 1.2.

NOTE: The nominal flow rate is used for the purpose of designating the capacity of the water meter. At the nominal flow rate, water meters are required to have a maximum pressure loss not exceeding those specified in Table 4.1.

1.3.4 Maximum continuous flow rate (q_{cmax})—the flow rate at which the meter will operate continuously for 500 h, within the limits of maximum permissible error (see Clause 3.1), expressed in kilolitres per hour (kL/h), and always greater than or equal to the nominal flow rate (q_n).

1.3.5 Maximum intermittent flow rate (q_{imax})—the flow rate at which the meter will operate within the limits of maximum permissible error (see Clause 3.1) for a period of not less than 1 h without damage, expressed in kilolitres per hour (kL/h), and equal to at least twice that of the nominal flow rate (q_n).

1.3.6 Minimum flow rate (q_{min})—the lowest flow rate at which the meter is required to give indications within the maximum permissible error (see Clause 3.1), expressed in kilolitres per hour (kL/h).

NOTE: The relationship between q_{min} and q_n is used to determine the metrological class of water meters (see Clause 3.2 and Table 3.1).

1.3.7 Minimum registration flow rate (q_{reg})—the flow rate at which the meter will commence to register, regardless of meter accuracy.

1.3.8 Flow rate range (q_{min} to q_{imax})—the range established by the minimum and maximum (intermittent) flow rates.

1.3.9 Pressure loss—the reduction in pressure at a given flow rate caused by the presence of the water meter in the pipeline, expressed in kilopascals (kPa).

1.3.10 Working temperature—the water temperature immediately upstream of the water meter, expressed in degrees Celsius (°C).

1.3.11 Working pressure—the hydrostatic pressure immediately upstream of the water meter, expressed in kilopascals (kPa).

1.4 DESIGNATION OF SIZE. The size designation of a water meter shall be the same as that of the pipe for which it is intended, expressed in millimetres (mm).

1.5 DESIGNATION OF CAPACITY. The capacity of a water meter shall be designated by the nominal flow rate (q_n), expressed in kilolitres per hour (kL/h).

1.6 DIMENSIONS AND TOLERANCES.

1.6.1 General. Dimensions for the following meter characteristics are given in Figure 1.1 (for volumetric chamber-type meters and turbine-type meters) and in Figure 1.2 (for turbine-type meters with removable mechanisms):

(a) Overall height ..... h_1.
(b) Overall width ..... b.
(c) Height from base of meter to centreline of pipe connection threads or flange bore ..... h_2.
(d) Overall length (without connections) ..... L.