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Water meters - Additional requirements for meters with polymer main casings

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Summary of pages
This document comprises a front cover, and inside front cover, pages i to ii, pages 1 to 10, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 August 2017. It was prepared by Subcommittee CPI/30/7, *Volume flow-rate methods*, under the authority of Technical Committee CPI/30, *Measurement of fluid flow in closed conduits*. A list of organizations represented on this committee can be obtained on request to its secretary.

Information about this document

With the increased importance of product environmental life cycle analysis, the move to reduce sources of lead in water networks and cost reduction initiatives, water meters are increasingly being specified with a polymer main casing, particularly for domestic applications.

The current standards for water meters, BS EN ISO 4064 (all parts) and OIML R49 2013, were developed prior to the extensive conversion to polymer main casings and therefore contain no specific requirements for these.

Polymer main casings do not display the same mechanical properties as more traditionally used brass alloys and many formulations, compounds and grades are available. This standard is intended to complement BS EN ISO 4064 (all parts) by offering additional technical specifications and type approval procedures for meters with polymer main casings.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of The Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This British Standard specifies additional requirements for water meters with polymer main casings used to meter the actual volume of clean, cold potable water or heated water flowing through a fully charged, closed conduit which are not already described in BS EN ISO 4064 (all parts).

It applies to meters where the main casing of the meter, which is subject to the water pressure, is manufactured from a polymer material and where the strength of the casing to withstand that water pressure is reliant on the strength of the polymer. It does not include the use of polymer coatings on the wetted surfaces of metal main casings, where the coating is not considered structural.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN ISO 228-1:2003, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

BS EN ISO 1302, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*

ISO 11423-1:1997, *Water quality – Determination of benzene and some derivatives – Part 1: Head-space gas chromatographic method*

3 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

3.1 additive

any substance that is added to a synthetic polymer during manufacture

NOTE For example, plasticizers to change the melting point and make them softer; colorants, reinforcements and fillers to improve mechanical properties such as stiffness and stabilizers; and antioxidants to protect against ageing, light or biological agents.

3.2 main casing

outer components of the water meter that are wetted and contain the water supply under pressure

3.3 permanent flow rate

Q_3, highest flow rate within the rated operating conditions at which the meter is to operate within the maximum permissible errors

NOTE Flow rate is expressed in m^3/h.

[SOURCE: BS EN ISO 4064-1:2014, **3.3.2**]

3.4 polymer

one of the family of synthetic materials which are chemically manufactured, having large molecules of simple repeated units, commonly referred to as “plastic”

NOTE There are two types of synthetic polymer – thermoplastic and thermoset.

