



BSI Standards Publication

Thermoplastics pipes for the conveyance of fluids — Nominal outside diameters and nominal pressures

Part 1: Metric series

National foreword

This British Standard is the UK implementation of ISO 161-1:2018+A1:2023. It supersedes BS ISO 161-1:2018, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to ISO text carry the number of the ISO amendment. For example, text altered by ISO amendment 1 is indicated by A1 A1.

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**Thermoplastics pipes for
the conveyance of fluids —
Nominal outside diameters and
nominal pressures —**

**Part 1:
Metric series**

*Tubes en matières thermoplastiques pour le transport des fluides —
Diamètres extérieurs nominaux et pressions nominales —*

Partie 1: Série métrique



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*.

This fourth edition cancels and replaces the third edition (ISO 161-1:1996), which has been technically revised.

The significant changes are:

- Nominal diameters are extended up to 3 000 mm;
- Nominal pressure PN 25 bar is added;
- Nominal pressure PN 6 shall be designed using 6,3 bar; designation based on 6,0 bar is deleted;
- MRS values up to 20 are based on R 10 increments. MRS values above 20 are based on R 20 increments;
- Definitions are updated to follow modern plastics piping terminology.

A list of all the parts in the ISO 161 series, can be found on the ISO website.

Thermoplastics pipes for the conveyance of fluids — Nominal outside diameters and nominal pressures —

Part 1: Metric series

1 Scope

This document specifies the nominal outside diameters for metric thermoplastics pipes for the conveyance of fluids in pressure and non-pressure applications. It also specifies nominal pressure ratings and minimum required strengths for pressure applications.

It is applicable to smooth thermoplastics pipes of constant circular cross-section along the whole length of the pipe, whatever their method of manufacture or material of construction.

It is not applicable to pipes designated according to the nominal inside diameter DN/ID.

This document is a basis for standards writers for the selection of nominal diameters and nominal pressures in the drafting of product standards.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3, *Preferred numbers — Series of preferred numbers*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1 nominal diameter

3.1.1 nominal size DN

numerical designation of the size of a component, other than a component designated by thread size, which is approximately equal to the manufacturing dimension

Note 1 to entry: Nominal size is expressed in millimetres (mm).