

INTERNATIONAL STANDARD

ISO
161-1

Third edition
1996-12-15

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



Reference number
ISO 161-1:1996(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 161-1 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*.

This third edition cancels and replaces the second edition (ISO 161-1:1978), which has been technically revised.

ISO 161 consists of the following parts, under the general title *Thermoplastics pipes for the conveyance of fluids — Nominal outside diameters and nominal pressures*:

- *Part 1: Metric series*
- *Part 2: Inch-based series*

Annex A of this part of ISO 161 is for information only.

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Case Postale 56 • CH-1211 Genève 20 • Switzerland
Printed in Switzerland

Introduction

In this part of ISO 161, some of the abbreviations used have been derived from the French language and others from English. It has been agreed to maintain the same abbreviations in both the French and English versions of the document.

For reference, the abbreviations are listed below with the originating language given first and the translation second:

- PN: Pression nominale (F)
Nominal pressure (E)
- PMS: Pression maximale de service (F)
Maximum allowable operating pressure (E)
- MRS: Minimum required strength (E)
Résistance minimale requise (F)
- σ_s : Design stress (E)
Contrainte de calcul (F)

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

Part 1: Metric series

1 Scope

This part of ISO 161 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, minimum required strengths and overall service (design) coefficients for thermoplastics pipes 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.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 161. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 161 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3:1973, *Preferred numbers — Series of preferred numbers*.

ISO 12162:1995, *Thermoplastics materials for pipes and fittings for pressure applications — Classifi-*

cation and designation — Overall service (design) coefficient.

3 Definitions

For the purposes of this part of ISO 161, the following definitions apply.

3.1 nominal outside diameter, d_n : A numerical designation of size which is common to all components in a thermoplastics piping system other than flanges and components designated by thread size. It is a convenient round number for reference purposes.

NOTE — For metric pipes conforming to this part of ISO 161, the nominal outside diameter, expressed in millimetres, is the minimum mean outside diameter $d_{em,min}$ specified in the applicable pipe standard.

3.2 Outside diameter, d_e

3.2.1 mean outside diameter, d_{em} : The measured length of the outer circumference of the pipe divided by π ¹⁾, rounded up to the nearest 0,1 mm.

3.2.2 minimum mean outside diameter, $d_{em,min}$: The minimum value of the mean outside diameter specified in the applicable pipe standard. It is equal to the nominal outside diameter d_n , expressed in millimetres.

1) The value of π is taken to be 3,142.