188

INTERNATIONAL STANDARD ISO 3609

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Polypropylene (PP) pipes — Tolerances on outside diameters and wall thicknesses

Tubes en polypropylène (PP) — Tolérances sur le diamètre extérieur et l'épaisseur de paroi

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3609 was developed by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, and was circulated to the member bodies in December 1974.

It has been approved by the member bodies of the following countries :

Austria	Italy	Sweden
Belgium	Mexico	Switzerland
Finland	Norway	Turkey
France	Poland	U.S.A.
Germany	Portugal	U.S.S.R.
India	Romania	Yugoslavia
Ireland	South Africa, Rep. of	
Israel	Spain	

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Netherlands
United Kingdom

Printed in Switzerland

Polypropylene (PP) pipes — Tolerances on outside diameters and wall thicknesses

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the permissible deviations of the outside diameters and the wall thicknesses of pipes with outside diameters not exceeding 630 mm and complying with ISO 161/I and ISO 161/II.

This International Standard applies to polypropylene (PP) pipes of circular section for the transport of fluids.

Attention is drawn to ISO 3126.

2 REFERENCES

ISO 161/I, *Thermosplastics pipes for the transport of fluids — Nominal outside diameters and nominal pressures — Part I : Metric series.*

ISO 161/II, *Thermoplastics pipes for the transport of fluids — Nominal outside diameters and nominal pressures — Part II : Inch series.*

ISO 3126, *Plastics pipes — Measurement of dimensions.*

3 TOLERANCES ON OUTSIDE DIAMETERS

3.1 Definitions

3.1.1 nominal outside diameter (d_e) : The outside diameter of the pipe stated in table 1 of either ISO 161/I or ISO 161/II, as appropriate.

3.1.2 mean outside diameter (d_m) : The quotient of the measurement of the outside circumference of the pipe and 3,142, rounded to the next higher 0,1 mm.

3.2 Tolerances

3.2.1 *Mean outside diameter*

3.2.1.1 PIPES IN ACCORDANCE WITH ISO 161/I[1)]

The permissible variation ($d_m - d_e$) between the mean outside diameter (d_m) and the nominal outside diameter (d_e) of a pipe as given in ISO 161/I shall be positive, in the form $^{+\,x}_{0}$, where x is less than or equal to the greater of the two following values :

a) 0,3 mm;

b) 0,009 d_e rounded off to the next higher 0,1 mm.

3.2.1.2 PIPES IN ACCORDANCE WITH ISO 161/II

The permissible variation is identical to that given in 3.2.1.1; however, the tolerance may be applied positively and/or negatively, depending upon size. The precise figures would normally be quoted in the appropriate national standards or International Standards.

4 TOLERANCES ON WALL THICKNESSES

4.1 Definitions

4.1.1 nominal wall thickness (e) : The wall thickness of the pipe calculated from the formula given in clause 6 of ISO 161/I and clause 6 of ISO 161/II, rounded off to the next higher 0,1 mm.

4.1.2 wall thickness at any point (e_i) : The result of the measurement of the wall thickness of the pipe at any point, rounded off to the next higher 0,05 mm.

4.2 Tolerances[2)]

The permissible variation ($e_i - e$) between the nominal wall thickness (e) and a wall thickness at any point (e_i) shall be positive, in the form $^{+\,y}_{0}$, where y is calculated as follows :

— for pipe with an outside diameter less than 400 mm : $y = 0{,}1\,e + 0{,}2$ (mm)

— for pipe with an outside diameter equal to or greater than 400 mm but not greater than 630 mm : $y = 0{,}15\,e + 0{,}2$ (mm)

The result of this calculation shall be rounded off to the next higher 0,1 mm.

1) Further studies are being undertaken to determine the possibility of reducing the values a) and b).

2) Further studies are being undertaken to determine the need to increase tolerances for wall thicknesses over 6 mm.