SLOVENSKI STANDARD
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Plastične cevi - Merjenje dimenzij

Plastics pipes -- Measurement of dimensions

Tubes en matières plastiques -- Mesurage des dimensions

Ta slovenski standard je istoveten z: **ISO 3126:1974**

ICS:

23.040.20 Cevi iz polimernih materialov Plastics pipes

SIST ISO 3126:1996 **en**

INTERNATIONAL STANDARD 3126

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Plastics pipes — Measurement of dimensions

Tubes en matières plastiques — Mesurage des dimensions

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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 3126 was drawn up by Technical Committee ISO/TC 138, *Plastics pipes and fittings for the transport of fluids*, and circulated to the Member Bodies in April 1973.

It has been approved by the Member Bodies of the following countries :

Austria	Ireland	South Africa, Rep. of
Belgium	Israel	Spain
Bulgaria	Italy	Sweden
Czechoslovakia	Japan	Switzerland
Denmark	Netherlands	Thailand
Egypt, Arab Rep. of	New Zealand	Turkey
Finland	Norway	United Kingdom
France	Poland	U.S.S.R.
Germany	Portugal	
India	Romania	

The Member Body of the following country expressed disapproval of the document on technical grounds :

Canada

Printed in Switzerland

Plastics pipes — Measurement of dimensions

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the apparatus and procedure to be used for measuring the dimensions of plastics pipes. The reference temperature is 20 ± 2 °C.

The dimensions to be determined are the following :

- wall thickness at any point, e_i
- mean outside diameter, d_m
- outside diameter at any point, d_i

2 WALL THICKNESS AT ANY POINT (e_i)

2.1 Required precision

The precision required in each measurement of wall thickness is 0,05 mm (0.002 in).

2.2 Measuring apparatus

The wall thickness shall be measured with a dial gauge, in accordance with the figure below, or with any other measuring instrument giving the same accuracy.

The dial gauge shall comply with the following requirements :

a) permit a reading to 0,01 mm (0.000 4 in);

b) be equipped with a fixed rod, of minimum length 30 mm, forming a rigid unit with the apparatus in such a way that the pointer on the dial gives a deviation of less than 0,01 mm (0.000 4 in) if a force of 5 N (0,5 kgf) is exerted at its extremity in the direction of the axis of the plunger;

c) the extremity of the fixed rod (fixed contact point) shall be in the form of a disc perpendicular to the rod, of diameter between 6 and 8 mm and thickness between 1 and 2 mm. The edge of the disc shall have a rounded radius of 1 mm;

d) the extremity of the plunger (movable contact point) shall be hemispherical in shape with a radius of approximately 1 mm;

e) the force with which the movable contact point bears on the wall of the pipe shall be less than 2,5 N (0,25 kgf);

f) the surfaces of the fixed and movable contact points shall be made of hard steel.

Dimensions in millimetres

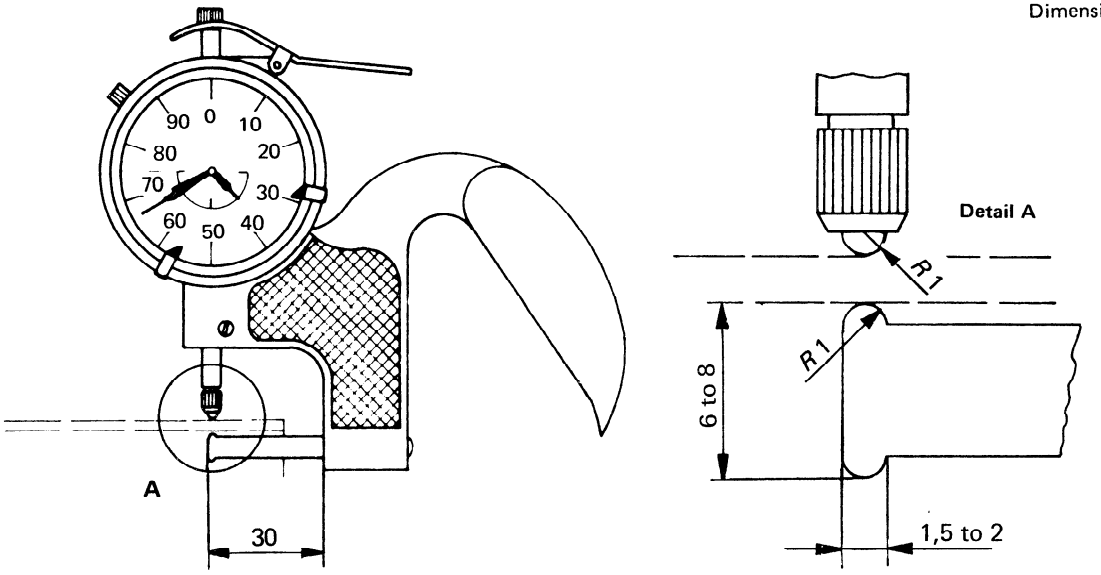

FIGURE — **Dial gauge**

2.3 Procedure

After introducing the fixed contact point inside and perpendicular to the axis of the pipe and applying it without force on to the internal surface of the wall, free the plunger and seek a position for the apparatus which provides the lowest reading.

2.4 Expression of result

Round off the lowest reading so obtained to the next higher 0,05 mm (0.002 in).

3 MEAN OUTSIDE DIAMETER (d_m)

3.1 Required precision

The precision required in each measurement is 0,1 mm (0.004 in).

3.2 Principle

Determination of the circumference of the pipe and division by 3,142.

3.3 Measuring apparatus

A circumference tape directly graduated in diameters[1], or other instruments giving the same accuracy. This tape shall comply with the following requirements :

a) be made of stainless steel or some other suitable material;

b) permit a reading to the nearest 0,05 mm (0.002 in);

c) be graduated in such a way that neither its own thickness nor the thickness of the graduation has any influence on the result of the measurement;

d) have a width in relation to the strength of the material of which it is made, such that a force of about 2,5 N (0,25 kgf) on its extremities does not cause a total elongation greater than 0,05 mm (0.002 in);

e) have sufficient flexibility to conform exactly to the circumference of the pipe.

3.4 Procedure

Apply the tape to the whole of the circumference perpendicular to the axis of the pipe. The reading shall only be taken under these conditions.

3.5 Expression of results

Round off the reading or the calculated mean outside diameter to the nearest 0,1 mm (0.004 in).

4 OUTSIDE DIAMETER AT ANY POINT (d_i)

4.1 Required precision

The precision required in each measurement is 0,05 mm (0.002 in).

4.2 Principle

Determination of the maximum and the minimum outside diameters of any cross-section, several outside diameters being measured, until the maximum and minimum values are found.

4.3 Measuring apparatus

Slide calipers permitting a reading to the nearest 0,05 mm (0.002 in).

4.4 Procedure

Place the fixed jaw of the slide calipers on one side of the pipe and the moving jaw on the other side, perpendicular to the axis of the pipe, and move the calipers along until both jaws make a clean contact with the surface of the pipe.

Take the reading after checking that the instrument is in the correct position in relation to the pipe.

Take measurements around the same cross-section, turning the calipers in the plane of this section until the maximum and minimum values are found.

4.5 Expression of results

Round off the readings to the nearest 0,1 mm (0.004 in) and note as the result the largest and the smallest value measured in the same cross-section.

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1) The measurement of diameters less than or equal to 40 mm may be obtained from the average of four uniformly distributed measurements of diameters, but the reference procedure shall be that described in this International Standard.