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Rigid cellular plastics – Determination of linear 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 1923 was drawn up by Technical Committee ISO/TC 61, *Plastics*.

It was approved in May 1970 by the Member Bodies of the following countries:

Austria	Hungary	Romania
Belgium	India	South Africa, Rep. of
Canada	Italy	Sweden
Czechoslovakia	Japan	Switzerland
Egypt, Arab Rep. of	Netherlands	Turkey
France	New Zealand	United Kingdom
Germany	Poland	U.S.A.
Greece	Portugal	U.S.S.R.

No Member Body expressed disapproval of the document.

Rigid cellular plastics – Determination of linear dimensions

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the characteristics and the choice of the measuring equipment and procedure for determination of the linear dimensions of sheets, blocks or test pieces of rigid cellular plastics.

2 DEFINITION

For the purposes of this International Standard the following definition applies:

linear dimension : The shortest distance, measured with an instrument according to section 3, between two specific points, between two parallel lines or between two parallel planes, defined by corners, edges or surfaces of the cellular specimen.

3 MEASURING EQUIPMENT

According to the dimensions to be measured and the precision desired, choose the apparatus from the following :

3.1 Dial gauge with a measuring surface of about 10 cm².

The gauging pressure shall not exceed 250 N/m².

3.2 Micrometer having a measuring surface with a minimum diameter of 5 mm, but in any case not less than five times the average diameter of the cells.

3.3 Sliding caliper with a graduation permitting reading to an accuracy of 0.1 mm.

3.4 Metal rule or metal tape graduated in millimetres and permitting reading to an accuracy of 0.5 mm.

4 PROCEDURE

4.1 Choice of measuring equipment

- a) When an accuracy of 0.1 mm is required, a dial gauge or micrometer must be used. The micrometer shall be used for specimens with a shape not permitting the use of a dial gauge and for dimensions not exceeding 10 mm.

An accuracy of 0.1 mm shall not normally be required for dimensions of more than 10 mm.

- b) When an accuracy of 0.25 mm is required, a sliding caliper shall be used.

An accuracy of 0.25 mm shall not normally be required for dimensions of more than 100 mm.

NOTE – In this case, a dial gauge or micrometer can also be used, but then the accuracy need not be better than that of a sliding caliper.

- c) When an accuracy of 1 mm is required, a metal rule or metal tape shall be used.

NOTE – In this case, a sliding caliper can also be used but then the accuracy need not be better than that of a metal rule or metal tape.

TABLE – Choice of measuring equipment

Range of dimensions	Required accuracy	Instrument recommended		Reading rounded to the nearest
		For normal use	If the shape of the specimen permits	
mm	mm			mm
≤ 10	0.1	Micrometer or dial gauge		0.1
> 10 to ≤ 100	0.25	Sliding caliper	Micrometer or dial gauge	0.2
> 100	1	Metal rule or metal tape	Sliding caliper	1

4.2 Number and location of the measurements

The number of the measuring locations depends on the size and the shape of the specimen, but shall be at least five. The locations shall be as widely separated as possible, in order to give a good average.

4.3 Measurement with dial gauge

The measurement with a dial gauge shall normally be made on a base plate. The base plate must be larger than the largest dimension of the specimen that is supported by the base plate. The specimen must rest flat upon the base plate during the measurements.