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# INTERNATIONAL STANDARD



# 2796

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Rigid cellular plastics — Test for dimensional stability

*Matières plastiques alvéolaires rigides — Détermination de la stabilité dimensionnelle*

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Descriptors : plastics, rigid cellular plastics, tests, physical tests, measurement, dimensions, dimensional stability.

## 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 2796 was drawn up by Technical Committee ISO/TC 61, *Plastics*, and circulated to the Member Bodies in July 1972.

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

|                     |             |                       |
|---------------------|-------------|-----------------------|
| Austria             | Iran        | South Africa, Rep. of |
| Belgium             | Ireland     | Spain                 |
| Brazil              | Israel      | Sweden                |
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| India               | Romania     |                       |

No Member Body expressed disapproval of the document.

# Rigid cellular plastics — Test for dimensional stability

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of dimensional stability of rigid cellular plastics when subjected to specific conditions of temperature and relative humidity.

The method suggests a range of conditions from which one or more of the desired test conditions can be selected.

Additional conditions may be used as agreed upon by the purchaser and the supplier.

The term "dimensional stability of a rigid cellular plastic" implies the absence of irreversible change in dimensions in each of three directions perpendicular to each other when a test specimen of specified size is exposed to stated conditions for a specified period. In practice, such irreversible changes do occur and are measured by the method described in this International Standard.

## 2 REFERENCES

ISO/R 291, *Plastics — Standard atmospheres for conditioning and testing.*

ISO 1923, *Rigid cellular plastics — Determination of linear dimensions.*

## 3 PRINCIPLE

Determination of the changes of linear dimensions which occur when the test specimens have been subjected to specified environments for a definite period of time and reconditioned.

## 4 APPARATUS

**4.1 Temperature or temperature and humidity controlled chamber** capable of maintaining the test specimens within the specified conditions and within the limits specified in the procedure (7.2).

**4.2 Measuring instruments** capable of measuring linear dimensions in accordance with ISO 1923.

## 5 TEST SPECIMENS

**5.1** Test specimens shall be machined or sawn from the sample so as to have a smooth surface free of cracks. Foam skins shall be removed unless otherwise specified.

**5.2** Test specimens shall have the following dimensions :

length :  $100 \pm 1$  mm

width :  $100 \pm 1$  mm

thickness :  $25 \pm 0,5$  mm

**5.3** A minimum of three test specimens for each sample shall be used under each set of chosen conditions.

## 6 CONDITIONING

The test specimens shall be conditioned in one of the standard atmospheres defined in ISO/R 291.

## 7 PROCEDURE

**7.1** Measure the length and width of each test specimen at the three positions shown in the figure, and the thickness at the five positions shown, using the appropriate methods described in ISO 1923.

**7.2** Expose the set of test specimens to each set of conditions specified in the relevant specification. Alternatively test conditions may be chosen among the following :

For use at dry conditions :

- $55 \pm 3$  °C
- $25 \pm 3$  °C
- $10 \pm 3$  °C
- $0 \pm 3$  °C
- +  $23 \pm 2$  °C
- +  $40 \pm 2$  °C
- +  $70 \pm 2$  °C
- +  $85 \pm 2$  °C
- +  $100 \pm 3$  °C
- +  $110 \pm 3$  °C
- +  $125 \pm 3$  °C
- +  $150 \pm 3$  °C

For use at 90 to 100 % RH :

- +  $40 \pm 2$  °C
- +  $70 \pm 2$  °C