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INTERNATIONAL STANDARD 845

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Cellular rubbers and plastics — Determination of apparent density

Caoutchoucs et plastiques alvéolaires — Détermination de la masse volumique apparente

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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 845 was developed jointly by Technical Committees ISO/TC 45, *Rubber and rubber products*, and ISO/TC 61, *Plastics*, and was circulated to the member bodies in November 1975.

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

Australia	Hungary	Romania
Austria	India	South Africa, Rep. of
Belgium	Iran	Spain
Brazil	Israel	Sweden
Canada	Italy	Switzerland
Czechoslovakia	Mexico	Turkey
Finland	Netherlands	United Kingdom
France	New Zealand	U.S.A.
Germany	Poland	U.S.S.R.

No member body expressed disapproval of the document.

This International Standard cancels and replaces both ISO Recommendation R 845-1968 and International Standard ISO 1855-1975, of which documents it constitutes a technical revision.

Printed in Switzerland

Cellular rubbers and plastics — Determination of apparent density

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for determining the apparent density of cellular rubbers and plastics.

2 REFERENCE

ISO 1923, *Cellular materials — Determination of linear dimensions.*[1)]

3 DEFINITION

For the purpose of this International Standard, the following definition applies :

apparent density : Mass per unit volume of the cellular material, at a stated temperature and relative humidity.

4 APPARATUS

4.1 Balance, capable of determining the mass of the specimen to an accuracy of 0,5 %.

4.2 Measuring instruments in accordance with ISO 1923.

5 TEST SPECIMENS

5.1 Dimensions

The test specimen shall be of a shape such that its volume can be easily calculated. It shall be cut without deforming the original cell structure of the material.

The volume of the test specimen shall be at least 100 cm^3, but preferably as large as possible commensurate with the apparatus available and with the shape of the original material. The location from which the test specimen is taken and the presence or absence of surface skins shall be recorded.

5.2 Number

A minimum of three test specimens shall be tested.

5.3 Conditioning

Materials shall not be tested for at least 72 h after manufacture.

The test specimens shall be conditioned for at least 16 h at :

23 ± 2 °C, 50 ± 5 % relative humidity; or

27 ± 2 °C, 65 ± 5 % relative humidity.

6 PROCEDURE

6.1 Measure the dimensions, in millimetres, of the test specimen, in accordance with ISO 1923. The mean values of a minimum of three separate measurements of each dimension shall be used to calculate the volume of the test specimen.

6.2 Weigh the test specimen to an accuracy of 0,5 %, expressing its mass in grams.

1) At present at the stage of draft. (Revision of ISO 1923-1972 and ISO/R 1794-1971.)

7 EXPRESSION OF RESULTS

The apparent density, ρ_a, of the test specimen is given, in kilograms per cubic metre, by the formula

$$\rho_a = 10^6 \times \frac{m}{V}$$

where

m is the mass of the test specimen, in grams;

V is the volume of the test specimen, in cubic millimetres.

8 TEST REPORT

The test report shall include the following information :

a) reference to this International Standard;

b) description of the material tested;

c) temperature and humidity at which the test specimens were conditioned;

d) individual test results, stating details of test specimens (shape, dimensions and location from which they were taken);

e) presence or absence of surface skins;

f) presence of densification, striations or other defects observed with the test specimens;

g) mean value of apparent density rounded to the nearest 0,1 kg/m^3;

h) any deviation from the procedure specified in this International Standard;

i) date of the test.