

# ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

## ISO RECOMMENDATION R 1855

FLEXIBLE CELLULAR MATERIALS  
DETERMINATION OF APPARENT DENSITY

1st EDITION

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## BRIEF HISTORY

The ISO Recommendation R 1855, *Flexible cellular materials – Determination of apparent density*, was drawn up by Technical Committee ISO/TC 45, *Rubber*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1855, which was circulated to all the ISO Member Bodies for enquiry in June 1969. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

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

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

## FLEXIBLE CELLULAR MATERIALS

### DETERMINATION OF APPARENT DENSITY

#### 1. SCOPE

This ISO Recommendation describes a procedure for determining the apparent density of cellular materials. It is primarily intended for flexible cellular materials.

#### 2. DEFINITION

*Apparent density.* The mass per unit volume of the cellular material in air, at a stated temperature and relative humidity.

#### 3. APPARATUS

- 3.1 *Balance*, capable of reading to an accuracy of 0.5 % or 0.01 g.
- 3.2 *Means of measuring the dimensions of the test piece*, in accordance with ISO Recommendation R 1794, *Flexible cellular materials – Measurement of dimensions of test pieces*.

#### 4. TEST PIECES

##### 4.1 Requirements

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

The test piece should have a volume of at least 100 cm<sup>3</sup>, but preferably should be as large as possible commensurate with the apparatus available and with the shape of the original material. The place from which the test piece is taken and the presence or absence of surface skins should be recorded. For slab-stock materials test pieces without skin should be used.

##### 4.2 Number of test pieces

A minimum of three test pieces should be tested.

##### 4.3 Conditioning

Materials shall not be tested for at least 72 hours after manufacture. Prior to the test, the material from which the test pieces are to be cut should be conditioned for at least 16 hours at :

- 20 ± 2 °C, 65 ± 5 % relative humidity;
- or 23 ± 2 °C, 50 ± 5 % relative humidity;
- or 27 ± 2 °C, 65 ± 5 % relative humidity.