

# ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

## ISO RECOMMENDATION R 844

PLASTICS

COMPRESSION TEST OF RIGID CELLULAR PLASTICS

1st EDITION  
October 1968

COPYRIGHT RESERVED

The copyright of ISO Recommendations and ISO Standards belongs to ISO Member Bodies. Reproduction of these documents, in any country, may be authorized therefore only by the national standards organization of that country, being a member of ISO.

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

## BRIEF HISTORY

The ISO Recommendation R 844, *Plastics – Compression test of rigid cellular plastics*, was drawn up by Technical Committee ISO/TC 61, *Plastics*, the Secretariat of which is held by the United States of America Standards Institute (USASI).

Work on this question by the Technical Committee began in 1961 and led, in 1963, to the adoption of a Draft ISO Recommendation.

In August 1964, this Draft ISO Recommendation (No. 752) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

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

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in October 1968, to accept it as an ISO RECOMMENDATION.

## PLASTICS

## COMPRESSION TEST OF RIGID CELLULAR PLASTICS

## 1. SCOPE

This ISO Recommendation describes a method of test for determining either :

- (a) the compressive strength, or
- (b) the compressive stress at 10 % deformation

of rigid cellular plastics materials.

## 2. PRINCIPLE

A test piece from the material is subjected over its entire cross-sectional area to increasing compression at a fixed rate of deformation until 10 % deformation is reached, and the maximum stress sustained by the test piece is calculated. If this maximum occurs before 10 % deformation is reached, the result is reported as compressive strength. If it occurs at 10 % deformation, it is reported as compressive stress.

## 3. DEFINITIONS

- 3.1 *Compressive strength.* Stress at maximum load to break down a cellular material, calculated on the original cross-sectional area.
- 3.2 *Compressive stress at 10 % deformation.* Quotient of the compression force at 10 % deformation and the original cross-sectional area.
- 3.3 *Deformation.* Extent to which the test piece is compressed, expressed as a percentage of its original height.

## 4. APPARATUS

- 4.1 *Compression testing machine.* Any suitable compression testing machine capable of operating at a constant rate of motion of the movable head may be used. \* It is recommended that one platen should be self-aligning.
- 4.2 *Load-indicating mechanism,* which will permit measurement of load to an accuracy of  $\pm 1\%$ .
- 4.3 *Deformation-indicating mechanism,* which will permit measurement of deformation to an accuracy of  $\pm 5\%$  or of  $\pm 0.1$  mm, whichever is the more accurate.
- 4.4 *Micrometer dial gauge, vernier caliper, or rule,* suitable for measuring the test piece to an accuracy of  $\pm 1\%$ .

\* This method is based on cross-head motions. Other methods not specified here, based on direct strain measurement, are available.