

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1209

PLASTICS

BENDING TEST FOR RIGID CELLULAR PLASTICS

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 1209, *Plastics – Bending test for rigid cellular plastics*, was drawn up by Technical Committee ISO/TC 61, *Plastics*, the Secretariat of which is held by the American National Standards Institute (ANSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 999 which was circulated to all the ISO Member Bodies for enquiry in October 1966. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Greece	Poland
Austria	Hungary	Portugal
Belgium	India	Romania
Brazil	Iran	South Africa, Rep. of
Bulgaria	Ireland	Spain
Canada	Israel	Sweden
Chile	Italy	Switzerland
Colombia	Japan	Thailand
Czechoslovakia	Korea, Dem. P. Rep. of	U.A.R.
Finland	Korea, Rep. of	U.S.A.
France	Netherlands	U.S.S.R.
Germany	New Zealand	Yugoslavia

The following Member Body opposed the approval of the Draft :

United Kingdom

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in April 1970, to accept it as an ISO RECOMMENDATION.

PLASTICS

BENDING TEST FOR RIGID CELLULAR PLASTICS

1. SCOPE

This ISO Recommendation specifies a method of test for determining either

- (a) the load for a specified deformation, or
- (b) the load at break

of a bar of rigid cellular material under the action of three-point bending.

The method of loading does not produce pure bending and hence does not permit calculation of flexural strength or apparent flexural modulus. The test is primarily used for assessing the behaviour of cellular materials under these laboratory testing conditions.

2. PRINCIPLE

Application of a bending load at a specified rate, by means of a loading edge to a test piece supported at two points equidistant from the loading edge.

Recording of the load at a specified deflection or of the breaking load.

3. APPARATUS

3.1 The apparatus should consist of either

- a conventional compression testing machine, to which a loading edge and supports are adapted, or
- a bending test machine, provided that its range is such that the load applied can be measured with an accuracy of $\pm 1\%$.

3.2 The loading edge and support edges should have cylindrical surfaces. In order to avoid excessive indentation, the radius of the edges should be 5 ± 0.2 mm. The supports should be 100 ± 1 mm apart. The loading edge should be positioned in the middle of the test piece, between the supports.

4. TEST PIECE

The test piece should be a parallelepiped having the following dimensions :

- length : 120 ± 1.20 mm
- breadth : 25 ± 0.25 mm
- thickness (testing height) : 20 ± 0.20 mm

It should be cut without deformation of the original cell structure. The test piece may have a skin on one or more sides; if so, this fact should be recorded.