
International Standard



3037

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**Corrugated fibreboard — Determination of edgewise
crush resistance**

Carton ondulé — Détermination de la résistance à la compression de chant

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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 3037 was drawn up by Technical Committee ISO/TC 6, *Paper, board and pulps*, and circulated to the Member Bodies in January 1973.

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

Belgium	Ireland	Sweden
Bulgaria	Israel	Switzerland
Czechoslovakia	New Zealand	Thailand
Egypt, Arab Rep. of	Norway	Turkey
Finland	Poland	United Kingdom
Germany, F.R.	Romania	USA
Hungary	South Africa, Rep. of	USSR
India	Spain	

The Member Bodies of the following countries expressed disapproval of the document on technical grounds:

Canada
France

Corrugated fibreboard — Determination of edgewise crush resistance

0 INTRODUCTION

The method of determining the edgewise crush resistance of corrugated fibreboard on which this International Standard is based has been used in many countries for a number of years. However, different instruments are in use and it would cause inconvenience if certain countries had to make immediate changes in their existing instruments. For this reason, two sizes of test piece are given in this International Standard. It is hoped that, when this International Standard is reviewed about 5 years after its publication, it will be possible to recommend only one size of test piece.

1 SCOPE

This International Standard specifies a method for determining the edgewise crush resistance of corrugated fibreboard.

2 FIELD OF APPLICATION

This method is applicable to single-wall (double-faced), double-wall (double-double-faced), and triple-wall corrugated fibreboard.

3 REFERENCES

ISO 186, *Paper and board — Sampling for testing.*

ISO 187, *Paper and board — Conditioning of test samples.*

4 PRINCIPLE

Subjection of a rectangular test piece of the corrugated fibreboard, placed between the platens of a crush tester, with the flutes perpendicular to the platens, to a compressive action until failure occurs.

Measurement of the maximum force sustained by the test piece.

5 APPARATUS AND EQUIPMENT

5.1 Motor-driven, platen-type, crush tester

The platens shall be large enough to take a test piece of the selected size (see 7.1) without the test piece projecting beyond the platens¹⁾. They shall also meet the following requirements:

- deviation from parallel not greater than 1 : 1 000;
- lateral play not exceeding 0,05 mm.

5.1.1 If the tester operates with one fixed platen, the other having a direct positive drive, the rate at which the platens approach each other shall be $12,5 \pm 2,5$ mm/min.

5.1.2 If the tester operates on the principle of beam deflection, the deflection at the moment of collapse shall be between 20 and 80 % of the maximum range of deflection that can be measured with the beam and dial in question.

The force applied by the platens shall be developed at a rate of either

$$67 \pm 23 \text{ N/s}$$

or

$$111 \pm 23 \text{ N/s}$$

when the platens enter into contact.

5.2 Cutting equipment

A band-saw or a knife and cutting jig may be used to prepare the test pieces. The equipment shall produce cut edges that are clean, straight, and perpendicular to the facings of the board.

5.3 Guide blocks

Two rectangular, smooth-finished, metal blocks, 20 mm X 20 mm, and at least 100 mm in length, to support the test piece and keep it perpendicular to the platens.

NOTE — When waxed test pieces are used (see 7.2), the guide block may be cut back by 2 mm along its whole length and for 10 mm of its depth so that it just does not contact the waxed area of the test piece.

1) The platens may be faced with a very fine emery paper, but where this is done, due regard shall be paid to maintaining the faces flat and parallel.