
International Standard



3035

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Single-faced and single-wall corrugated fibreboard — Determination of flat crush resistance

Carton ondulé simple face et double face — Détermination de la résistance à la compression à plat

Second edition — 1982-12-01

UDC 676.273.31 : 676.017.42 : 539.411

Ref. No. ISO 3035-1982 (E)

Descriptors : corrugated cardboards, tests, compression test, crushing strength.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (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 authorized 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 3035 was developed by Technical Committee ISO/TC 6, *Paper, board and pulps*.

This second edition was submitted directly to the ISO Council, in accordance with clause 6.11.2 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 3035-1975), which had been approved by the member bodies of the following countries:

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

* with the exception of sub-clause 5.1.1.

The member bodies of the following countries had expressed disapproval of the document on technical grounds:

Bulgaria
Canada**

** sub-clause 5.2 only.

Single-faced and single-wall corrugated fibreboard — Determination of flat crush resistance

1 Scope

This International Standard specifies a method for the determination of the flat crush resistance of corrugated fibreboard used in the manufacture of packing cases.

2 Field of application

The method is applicable to single-faced and single-wall (double-faced) corrugated fibreboard. It is not applicable to double-wall (double-double-faced) corrugated fibreboard.

3 Reference

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

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

4 Principle

Subjection of a test piece from a representative sample of corrugated fibreboard to an increasing force applied perpendicularly to the surface by a compression tester having two flat and parallel platens, until the fluting collapses.

Measurement of the maximum force sustained by the test piece.

5 Apparatus

5.1 Flat crush tester: a motor-driven, platen-type compression tester.

The platens shall be large enough to take a test piece of the selected size (see 5.2) without the test piece projecting beyond the platens.¹⁾ 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 beam shall be such that test results will occur only within 20 to 80 % of the maximum range of deflection that can be measured with the apparatus.

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

110 ± 23 N/s (preferred)
or 67 ± 23 N/s

when the platens contact the test piece.

5.1.3 Testers fitted with digital read-out systems may be used, provided that it can be shown that the results obtained are comparable with those obtained using the testers described in 5.1.1 and 5.1.2.

5.2 Cutting instrument, having a circularly guided knife to cut test pieces with an area²⁾ of not less than 50 cm², with the cut edges clean and perpendicular to the facings of the corrugated fibreboard.

6 Sampling

Sampling shall be carried out in accordance with ISO 186.

7 Conditioning

The test pieces shall be conditioned in accordance with ISO 187.

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

2) Commonly used areas are 64,5 cm² (90,6 \pm 0,5 mm diameter) and 100 cm² (112,8 \pm 0,5 mm diameter). When the flat crush resistance is expected to exceed the capacity of the test instrument, a smaller test piece (commonly 32,2 cm²) may be used.