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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

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FOREWORD

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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 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
Czechoslovakia	Israel	Switzerland
Egypt, Arab Rep. of	New Zealand	Thailand
Finland	Norway	Turkey
France*	Poland	United Kingdom
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India	Spain	

* with the exception of sub-clause 5.1.1.

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

Bulgaria
Canada**

** sub-clause 5.2 only.

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

1 SCOPE

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

2 FIELD OF APPLICATION

This 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 REFERENCES

ISO/R 186, *Method of sampling paper and board for testing.*

ISO 187, *Paper and board — Conditioning of test samples.* 1)

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 2). 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 ± 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 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 instrument, having a circularly guided knife to cut test pieces with an area 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/R 186.

7 CONDITIONING

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

8 PROCEDURE

Test not less than ten test pieces. The test pieces shall be free from converting machine marks, printing and damage.

Carry out the tests in the standard atmosphere specified in clause 7.

Determine the area of each test piece.

1) At present at the stage of draft. (Revision of ISO/R 187.)

2) 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.

* Commonly used areas are 64,5 cm² (90,6 ± 0,5 mm diameter) and 100 cm² (112,8 ± 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.

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