

Determination of the basis weight of the component papers of corrugated fibreboard after separation

1 Scope

To define the apparatus and procedure used to determine the basis weight of the individual papers from which corrugated fibreboard has been made. This method is applicable to all types of corrugated fibreboard.

2 References

FEFCO testing method n° 1 : Sampling procedure

EN 20 187 : paper, board and pulps - Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples.

EN ISO 536 : paper and board - Determination of grammage

FEFCO testing method n° 6 : Determination of the flat crush resistance of corrugated fibreboard.

3 Principle

Test specimens of corrugated fibreboard are treated so that the individual components can be separated. The component papers are then dried and conditioned, and subsequently used for the determination of their basis, in accordance with EN ISO 536.

4 Apparatus

4.1. A tank of sufficient size for immersion of the board specimens, to contain cold or hot water.

4.2. Means for drying the test specimens when separated, to contain cold or hot water.

4.3. A cutting instrument having a circularly guided knife to cut test pieces with an area of 100 cm² (diameter 113 mm ± 0.5 mm) shall preferably be used. (see FEFCO Test Method N° 6, para 4.4.). Alternatively a sharp knife and straight edge may be used.

4.4. A balance with sensitivity of 0.01 g or better over the entire measuring range (this will make it possible to determine from test pieces of 100 cm² area their grammage to a precision of 1 g/m²).

5 Sampling

Sample in accordance with FEFCO Testing Method N° 1.

6 Conditioning

Samples shall be conditioned accordance with EN 20 187 (i.e. 23° C ± 1° C, 50 % ± 2 % r.h.).

7 Preparation of test pieces

Individual samples of board of sufficient size to provide the test pieces shall be cut from the corrugated fibreboard to be tested. The surfaces of the fibreboard shall be free from any damage which may affect the results. Test specimens shall preferably be taken from nonprinted and noncoated board.

After conditioning the test specimens, cut test pieces of board, each of 100 cm² area minimum using cutting device specified at 4.3. The cut edges shall be clean and perpendicular to the faces of the board.

8 Procedure

8.1. Separation of components papers

Test specimens shall be immersed long enough in water to cause the component sheets of paper to separate spontaneously or with an extremely light pull. Care shall be taken, in separating the papers that no fibres be removed from a surface and adhere to the adjoining one. To accelerate the process, and to separate corrugated board whose glue bond is more or less moisture resistant, hot water may be used.

8.2. Removal of adhesive showing on the surface of the paper

Adhesive which has not been absorbed by the paper may be removed, while wet, by lightly scraping the surface.

Complete removal of the absorbed adhesive cannot be expected.

8.3. Drying of the separated papers

The individual papers shall be dried in a temperature not exceeding 125°C and conditioned.

8.4. Weighing fluting medium

After cleaning and conditioning the fluting medium shall be flattened and recut to give an area of 100 cm².

8.5. Individual tests

The weighing shall be carried out in the standard atmosphere (specified at Clause 6). Each specimen of component papers is to be weighed individually to the nearest 0.01 g.

8.6. Number of individual determinations

Unless otherwise specified, the component papers of five specimens of corrugated board shall be tested.

9

Test report

The report will contain the following details :

- a** *Date and place of testing*
- b** *Description and identification of the corrugated board tested*
- c** *Description and identification of the individual papers*
- d** *Number of test pieces*
- e** *Results of the individual tests in g/m²*
- f** *Arithmetic mean of the individual tests*
- g** *Details of any deviation from this FEFCO Testing Method*
- h** *Any other information which may be essential for the interpretation of the results.*