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STANDARD

**5637**

Second edition  
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**Paper and board — Determination of water  
absorption after immersion in water**

*Papier et carton — Détermination de l'absorption d'eau après immersion dans l'eau*



Reference number  
ISO 5637 : 1989 (E)

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 5637 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*.

This second edition cancels and replaces the first edition (ISO 5637 : 1978), clauses 4, 6, 7, 8 and 9 of which have been technically revised.

# Paper and board — Determination of water absorption after immersion in water

## 1 Scope

This International Standard specifies a method for the determination of the water absorption of paper and board after total immersion in water for a specified time.

The method is applicable to all types of paper and board which have a degree of water resistance. It is not applicable to very absorbent papers such as toilet tissue.

NOTE — The method is analogous to that specified in ISO 769: 1972, *Fibre building boards — Hard and medium boards — Determination of water absorption and of swelling in thickness after immersion in water.*

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 186: 1985, *Paper and board — Sampling to determine average quality.*

ISO 187: 1977, *Paper and board — Conditioning of test samples.*

## 3 Definitions

For the purposes of this International Standard, the following definitions apply.

**3.1 water absorption:** The mass of water absorbed per unit area under the specified conditions of test.

**3.2 relative water absorption:** The ratio of the mass of water absorbed to the mass of the conditioned test piece.

## 4 Principle

Weighing the test piece before and after immersion in water and calculating the water absorption, in grams per square metre, or the relative water absorption as the percentage increase in mass.

## 5 Reagent

**Water**, freshly distilled or deionized, at  $23\text{ °C} \pm 1\text{ °C}$ . Keep in a closed container until required for use.

## 6 Apparatus

**6.1 Balance**, accurate to 0,01 g.

Check the balance frequently by applying accurately measured masses, with both increasing and decreasing loads.

**6.2 Tank of water**, large enough to hold at least 10 test pieces in a vertical position, and thermostatically controlled without circulation.

Take care to ensure that the tank has been carefully washed with the reagent water (see clause 5) so that it is free from surfactants.

**6.3 Support system** that prevents a limp test piece from folding over on itself (see 8.3 and 8.4), such as a wire drainage jig with spring clips or similar to hold three corners of the test piece.

**6.4 Tared containers** of suitable size, such as pre-weighed polyethylene bags.

## 7 Sampling preparation of test pieces

### 7.1 Sampling

Select the sample in accordance with ISO 186.