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# INTERNATIONAL STANDARD



# 3689

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

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## **Paper and board — Determination of bursting strength after immersion in water for a specified period**

*Papier et carton — Détermination de la résistance à l'éclatement après immersion dans l'eau pendant une durée spécifiée*

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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 3689 was drawn up by Technical Committee ISO/TC 6, *Paper, board and pulps*, and was circulated to the Member Bodies in April 1975.

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

Australia	Hungary	<del>Poland</del>
Belgium	Iran	Romania
Bulgaria	Ireland	South Africa, Rep. of
Canada	Israel	Sweden
Czechoslovakia	Italy	Switzerland
Egypt, Arab Rep. of	Mexico	Turkey
Finland	Netherlands	United Kingdom
France	New Zealand	U.S.A.
Germany	Norway	U.S.S.R.

No Member Body expressed disapproval of the document.

# Paper and board — Determination of bursting strength after immersion in water for a specified period

## 1 SCOPE

This International Standard specifies a method for determining the wet strength of paper and board by measuring the bursting strength of the material after it has been immersed in water for a specified period but not necessarily completely saturated. Care should be taken that the method and results are not confused with those given in or obtained by ISO . . .<sup>1)</sup> in which complete saturation of the materials is required.

Different results may be found if the sample is re-tested after a period of time.

## 2 FIELD OF APPLICATION

The method is applicable, in principle, to most kinds of paper and board, provided that an appropriate immersion time is agreed between the interested parties.

## 3 REFERENCES

ISO 186, *Paper and board — Sampling for testing*.<sup>2)</sup>

ISO 187, *Paper and board — Conditioning of test samples*.<sup>3)</sup>

ISO 2758, *Paper — Determination of bursting strength*.

ISO 2759, *Board — Determination of bursting strength*.

## 4 DEFINITIONS

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

**4.1 bursting strength after immersion for X hours :** The limiting resistance offered by a test piece of paper or board, after immersion in water for X hours, to a uniformly distributed pressure applied at right angles to its surface up to the point at which it breaks, under the specified conditions of test.

**4.2 bursting strength retention after immersion for X hours :** The percentage ratio of the bursting strength of a test piece of paper or board after immersion in water for X hours to that of the same paper or board in the dry state measured under the specified conditions of test.

## 5 PRINCIPLE

Immersion in water for the appropriate period of a test piece of the paper or board to be tested and determination of the bursting strength.

## 6 APPARATUS

**6.1 Burst testing apparatus,** complying with the requirements of ISO 2758 or ISO 2759.

**6.2 Thermostatically controlled water tank,** large enough to hold the test pieces in a vertical position.

## 7 WATER FOR SOAKING

Use a drinking water with a total solids content not exceeding 500 mg/l; if necessary, add a small quantity of a suitable buffering agent to maintain the pH value between 6,8 and 7,2 for the soaking period.

NOTE — Care shall be taken to ensure that the tank used for soaking has been carefully washed with drinking water so that it is free from surfactants.

## 8 SAMPLING

Specimens shall be selected as specified in ISO 186.

## 9 PREPARATION OF TEST PIECES

Test pieces shall be prepared as specified in ISO 2758 or ISO 2759. Ten test pieces are normally required for the wet bursting test; if multiple bursting is necessary (see 11.3), a larger number of test pieces is required. A duplicate set shall be prepared for the dry bursting test if required.

1) In preparation.

2) At present at the stage of draft. (Revision of ISO/R 186.)

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