



International
Standard

ISO 3689

**Paper and board — Determination
of bursting strength after
immersion in water**

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

**Third edition
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 2, *Test methods and quality specifications for paper and board*.

This third edition cancels and replaces the second edition (ISO 3689:1983), which has been technically revised.

The main changes are as follows:

- [Clause 2](#) has been updated;
- Terms for burst index ([3.3](#)), felt side ([3.4](#)), and wire side ([3.5](#)) have been added in [Clause 3](#);
- [Clause 5](#) has been revised;
- [7.2](#) “conditioning” has been updated;
- [Clause 8](#) “Procedure” is revised, especially immersion time ([8.1.2](#)) and excess water removal ([8.1.3](#)) has been added;
- Former [8.3](#) “determination” in particular the limits of the bursting strength are revised;
- Former 8.4 “number of tests” is revised;
- Former [Clause 9](#) “Expression of results” is technically revised;
- [Clause 10](#) “Precision” has been updated;
- [Clause 11](#) “Test report” is revised;
- [Annex A](#) with examples of possible support systems has been added;
- editorially revised.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Paper and board — Determination of bursting strength after immersion in water

1 Scope

This document specifies a method for the determination of the wet strength of paper and board by measuring its bursting strength after it has been immersed in water for a specified period.

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

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

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

ISO 536, *Paper and board — Determination of grammage*

ISO 2758, *Paper — Determination of bursting strength*

ISO 2759, *Board — Determination of bursting strength*

ISO 14487, *Pulps — Standard water for physical testing*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

bursting strength after immersion

limited resistance offered by a single sheet of paper or board, after immersion in water 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

3.2

bursting strength retention after immersion

percentage ratio of the bursting strength of a single sheet of paper or board after immersion in water to that of the same paper or board in the dry state measured under the specified conditions of test