
**Building and civil engineering
sealants — Determination of resistance
to prolonged exposure to water**

*Mastics pour bâtiments et ouvrages de génie civil — Détermination
de la résistance à une immersion prolongée dans l'eau*



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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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 59, *Buildings and civil engineering works*, Subcommittee SC 8, *Sealants*.

This second edition cancels and replaces the first edition (ISO 13638:1996), which has been technically revised.

The main changes compared to the previous edition are as follows:

- The title of the document has been modified.
- The requirements of apparatus, preparation of test specimens and failure criterion have been modified in accordance with other revised ISO standards.
- The minimum times of repetition of the water immersion and cyclic movement procedures have been defined.

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.

Building and civil engineering sealants — Determination of resistance to prolonged exposure to water

1 Scope

This document specifies a method for the determination of the ability of sealants to resist differing degrees of exposure to water under conditions of service.

The method assesses the effects of water immersion, for specified durations of time, on the ability of the sealant to fulfil its essential functions, principally to withstand joint movement.

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 6927, *Buildings and civil engineering works — Sealants — Vocabulary*

ISO 9046, *Building construction — Jointing products — Determination of adhesion/cohesion properties of sealants at constant temperature*

ISO 9047, *Building construction — Jointing products — Determination of adhesion/cohesion properties of sealants at variable temperatures*

ISO 11600, *Building construction — Jointing products — Classification and requirements for sealants*

ISO 13640, *Buildings and civil engineering works — Sealants — Specifications for test substrates*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6927 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 <http://www.electropedia.org/>

4 Principle

Test specimens are prepared in which the sealant to be tested adheres to two parallel contact surfaces. After immersion of the test specimens in water under defined conditions, they are subjected to repeated extension and compression movements in a suitable device, at an amplitude which is 50 % of that used in the test to assess the respective movement accommodation factor. This procedure is repeated a number of times, or until failure of one or more test specimens is observed. The number of repetitions of water immersion followed by extension/compression movement is related to the expected water resistance in service.

Water immersion may be carried out either at ambient temperature (23 °C), or at elevated temperature (40 °C or 50 °C) to accelerate the influence of the exposure to water.