
**Building and civil engineering
sealants — Determination of self-
levelling properties**

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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*.

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 self-levelling properties

1 Scope

This document specifies a method for determining self-levelling properties of sealants.

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, *Building and civil engineering sealants — Vocabulary*

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/>
<https://standards.iteh.ai/catalog/standards/sist/e195279e-3bc0-4ea2-8a2d-c706e3d51688/iso-23869-2021>

4 Apparatus and materials

4.1 Container. If applicable, the container can be made of polyethylene (PE), polypropylene (PP) or polytetrafluoroethylene (PTFE), 250 ml.

4.2 Horizontal mould.

4.2.1 Removable type, which is formed by the channel with a horizontal bottom and top surface (see [Figure 1](#)) and both removable ends (see [Figure 2](#)). The mould shall be made of alloy, steel or plastic (PE, PP).

The internal dimensions of the horizontal mould are as follows:

- a) the width of the channel bottom is $(20 \pm 0,5)$ mm;
- b) the width of the channel top is $(22 \pm 0,5)$ mm;
- c) the depth of the channel is $(25 \pm 0,5)$ mm;
- d) the length of the channel is (300 ± 1) mm.

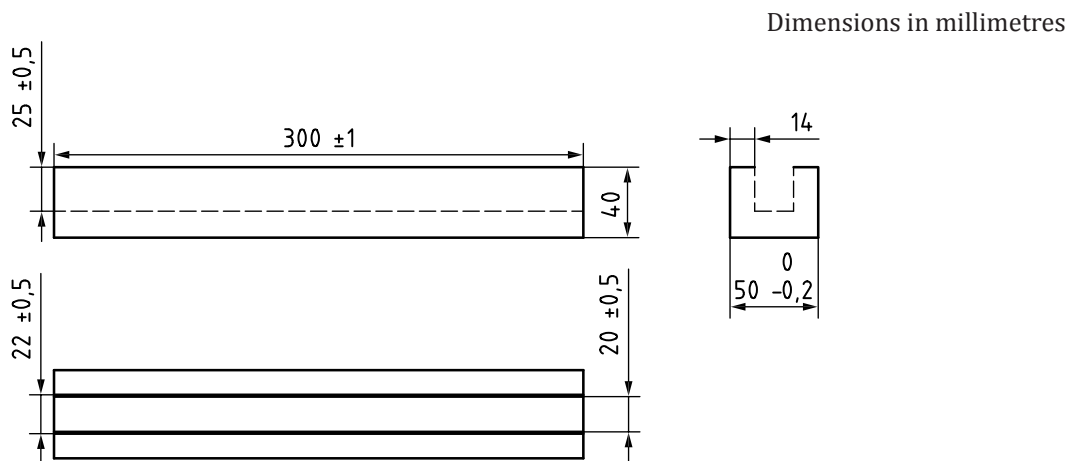


Figure 1 — Horizontal channel

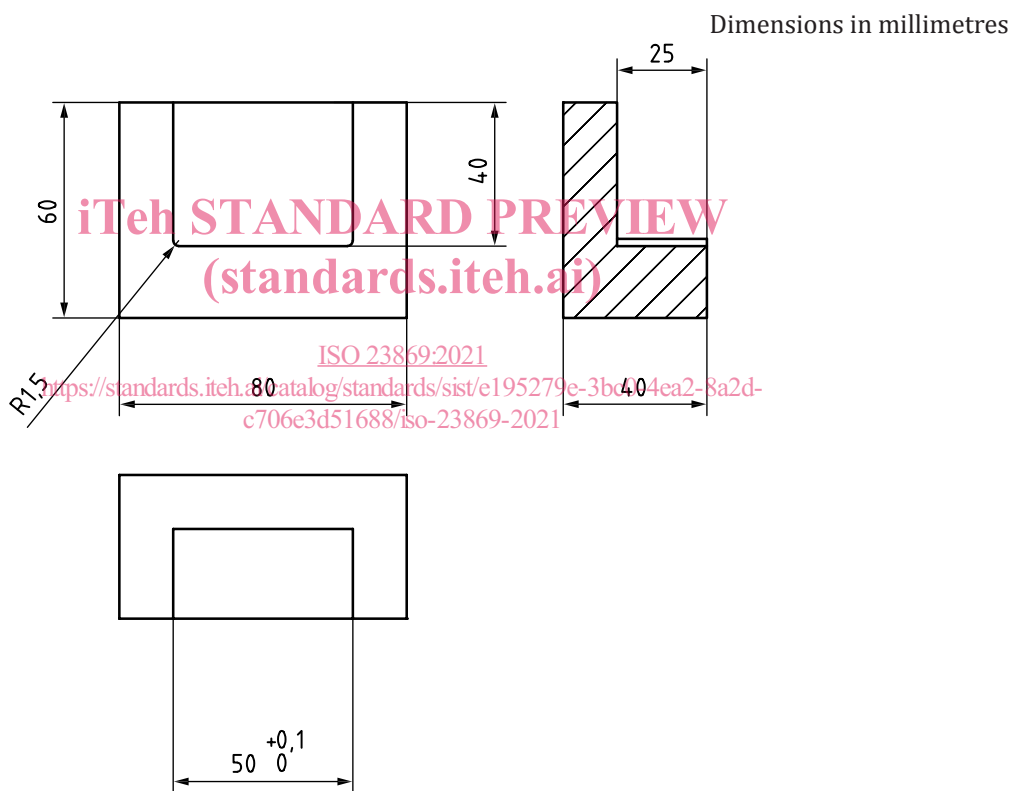


Figure 2 — Removable channel ends

4.2.2 Undetachable type, which consists of a channel (see Figure 3) with both ends closed and internal dimensions of $(20 \pm 0,5)$ mm wide, $(25 \pm 0,5)$ mm deep and (300 ± 1) mm long. The channel shall be made of alloy, steel or plastic (PE, PP).

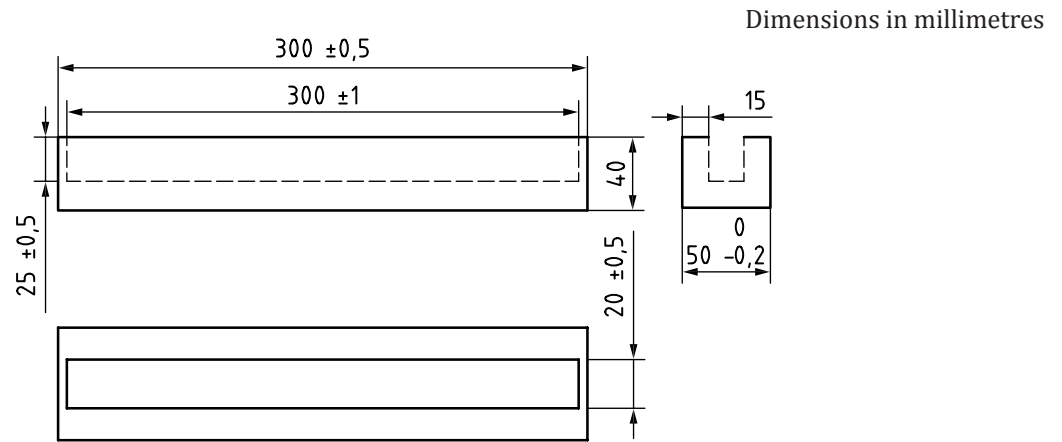


Figure 3 — Mould of the undetachable type

4.3 Inclined mould, which is formed by a channel with a horizontal bottom, an inclined top surface and both closed ends (see Figure 4). The mould shall be made of alloy, steel or plastic (PE, PP).

The internal dimensions of the inclined mould are as follows:

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- the width of the channel bottom is $(20 \pm 0,5)$ mm;
 - the width of the channel top is $(22 \pm 0,5)$ mm;
 - the length of the channel is (300 ± 1) mm;
 - the angle of the inclined channel is $1,43^\circ$.

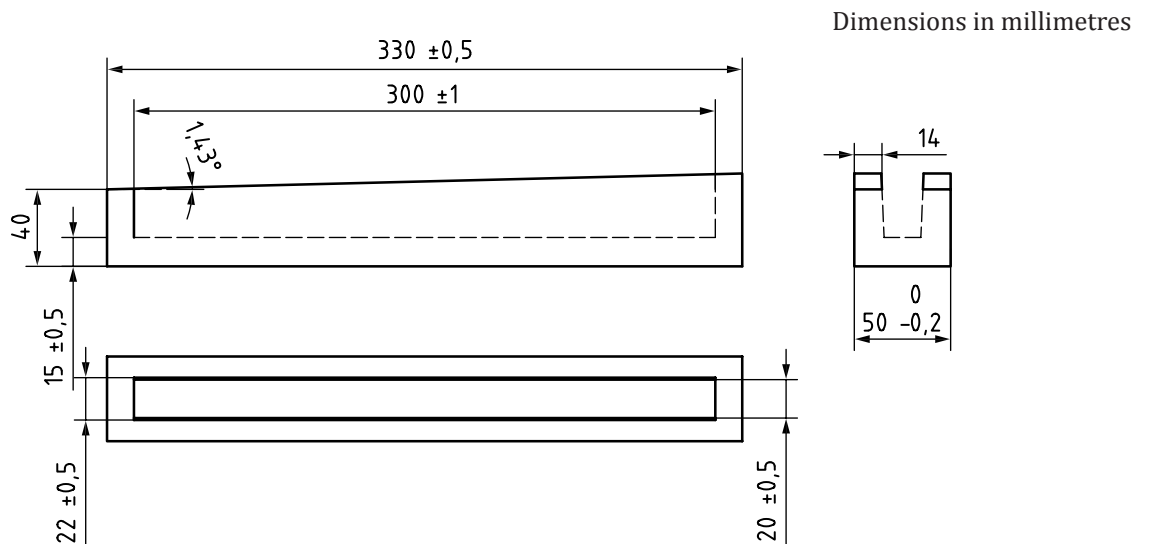


Figure 4 — Inclined channel with both closed ends

4.4 **Wedge-shaped piece** (see Figure 5), which should be made of alloy or steel. It is used for positioning the inclined mould at a $(2,5 \pm 0,1)$ % slope with the level plane.

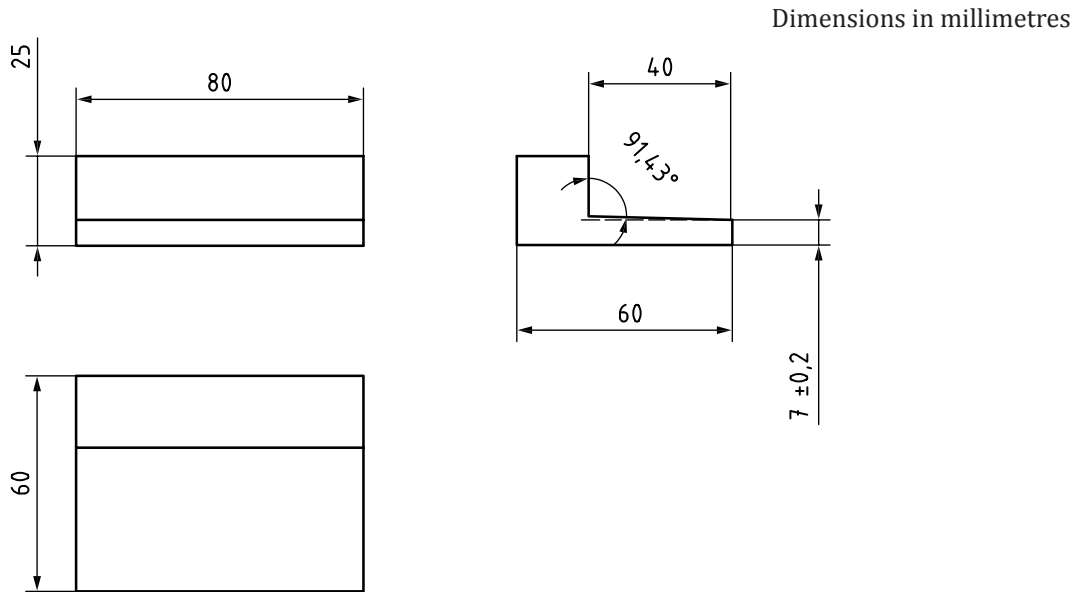


Figure 5 — Wedge-shaped piece

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4.5 **Measuring apparatus**, with an accuracy grade of at least 0.1 mm and a digital display depth gauge fitted with a ratchet is recommended.

4.6 **Level instrument**, which used for adjusting the level plane.

4.7 **Release agent**, which is used for helping the sealants to be released from the mould.

5 Condition

The samples, test moulds and materials shall be placed under the environment agreed between the parties. A temperature of (23 ± 2) °C and a relative humidity of (50 ± 10) % or a temperature of (5 ± 1) °C are recommended. The conditioning time is at least 16 h. If the metal moulds are used, the release agent can be used.

6 Test procedure

6.1 Sampling

One-component sealants can be sampled directly from the original package.

Multi-component sealants should be mixed according to the method given by the manufacturer and should be used within 2 min.

6.2 Determination of self-levelling property using the horizontal mould at low temperature

6.2.1 Pouring

At a height of 70 mm to 100 mm, the sealant is continuously poured into the mould along the axis of the mould within 30 s until the free-flowing surface is within 5 mm from the top of the mould.

6.2.2 Curing

After pouring, transfer the mould to the refrigerator or conditioning chamber carefully and immediately. Adjust the mould with a level instrument to keep it horizontal. Remove the mould after leaving it at (5 ± 1) °C for 48 h.

6.2.3 Mark the test point

Mark the different points in the centre of the mould and 25 mm, 50 mm, 75 mm, 100 mm and 125 mm from the centre point.

6.2.4 Measurement

Measure the depth of the marked points at the centre of the opposite sides of the mould channel below the datum of zero.

NOTE The zero datum is the surface of the mould.

6.2.5 Test result

The result is the difference between the highest reading and the lowest reading, corrected to 0,5 mm.

6.3 Determination of self-levelling property using the inclined mould at normal temperature

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6.3.1 Pouring

At a height of 70 mm to 100 mm, the sealant is continuously poured into the mould along the axis of the mould within 30 s until the free-flowing surface is between 5 mm to 10 mm from the top of the mould.

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6.3.2 Incline the mould

Insert the wedge-shaped piece (4.4) under the shorter side of the inclined mould immediately with a minimum vibration. If the undetachable horizontal mould (4.2.2) is used, the wedge-shaped piece (4.4) can be inserted into either side.

6.3.3 Curing

Leave the mould for 24 h under a temperature at (23 ± 2) °C and a relative humidity at (50 ± 10) %.

6.3.4 Mark the test point

Mark two points at 20 mm from each end of the mould.

6.3.5 Measurement

Measure the depth of the marked points at the centre of the opposite sides of the mould channel below an arbitrary datum. For the inclined mould (4.3), the arbitrary datum can be zero datum.

6.3.6 Test result

The result is the difference between the two records, corrected to 0,5 mm.

7 Test report

The test report shall contain the following information:

- a) a reference to this document, i.e. ISO 23869:2021;
- b) information about the name, colour, chemical family and batch number of the test sealant;
- c) the test method, test mould, test temperature and conditioning time;
- d) the test results;
- e) any deviation from this document;
- f) the date of the test.

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