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Buildings and civil engineering works — Sealants — Testing of adhesion properties using a bead peel test

Bâtiments et ouvrages de génie civil — Mastics — Détermination des propriétés d'adhérence par un essai de pelage manuel

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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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.

Buildings and civil engineering works — Sealants — Testing of adhesion properties using a bead peel test

1 Scope

The document specifies a method for evaluating the adhesion of sealants with a minimum elongation at break of 25 % (according to ISO 8339, Method A or B) on various substrates. This test method can be used for one-component and multi component sealants. This method is typically used for elastic sealants but can be also used for plastic sealants. For plastic sealants, the test can be more difficult and needs to be carried out by experienced technicians.

This test is used to judge the adhesion of construction sealants in combination with cleaners, activators and/or primers on various substrates when exposed to a peeling force and also after different aging conditions.

An adhesion test according to this document can also be conducted for process monitoring and quality assurance accompanying production. The test method described in this document is not intended to replace any adhesion cohesion test methods specified in ISO 11600.

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 10365, *Adhesives — Designation of main failure patterns*

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

Sealant beads are applied onto substrates. After any required conditioning and optional aging the beads are manually peeled from the substrate to determine the adhesion properties.

The failure pattern is then recorded.

5 Sample preparation

5.1 General

Depending on the objective of the test, more than one bead per substrate may be applied.

5.2 Materials, substrates and surface treatment

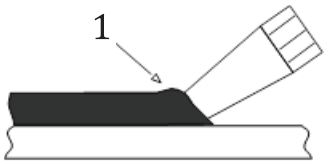
The sealant, substrate and the surface treatment shall be selected according to the requirements of the final application and shall be defined between the concerned parties. For both methods at the starting point a bond breaking tape could be applied on a length of 10 mm to 15 mm in order to have an easier start of the cutting process.

5.3 Sealant application

5.3.1 Method without mold

This method can be used for e.g. non-sagging sealants.

For every test specimen, at least one sealant bead with a minimum length of 80 mm, but with sufficient length for the number of intended ageing steps (each aging step requires about 50 mm), shall be applied onto the substrate.



Key

1 bow wave

Figure 1 — Bead application

Usually semicircular beads are applied (Figure 1) by cutting the nozzle to the suitable diameter. The height of the sealant bead should be 5 mm to 8 mm or compacted to this height. Beads that are too thin or too high lead to falsified results during later peeling. During the application, a good wetting of the substrate shall be ensured as well; air entrapment shall be avoided.