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Adhesives – Determination of strength of bonded joints using a bending-shear method

The International Standard ISO 15108:1998 has the status of a Swedish Standard. This document contains the official English version of ISO 15108: 1998.

Swedish Standards corresponding to documents referred to in this Standard are listed in ”Catalogue of Swedish Standards”, issued by SIS. The Catalogue lists, with reference number and year of Swedish approval, International and European Standards approved as Swedish Standards as well as other Swedish Standards.

Lim – Bestämning av hållfasthet hos limförband genom användning av en böjskjuvmetod

Den internationella standarden ISO 15108:1998 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 15108:1998.

Motsvarigheten och aktualiteten i svensk standard till de publikationer som omnämns i denna standard framgår av ”Katalog över svensk standard”, som ges ut av SIS. I katalogen redovisas internationella och europeiska standarder som fastställts som svenska standarder och övriga gällande svenska standarder.

ICS 83.180

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Contents

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 15108 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*.

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Adhesives — Determination of strength of bonded joints using a bending-shear method

1 Scope

This International Standard describes a procedure for the determination of the strength of adhesive joints, using a bending-shear method. The method can only be used for comparing adhesives, and the results cannot be used for design purposes.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 291:1997, *Plastics — Standard atmospheres for conditioning and testing.*

ISO 4587:1995, *Adhesives — Determination of tensile lap-shear strength of rigid-to-rigid bonded assemblies.*

ISO 4588:1995, *Adhesives — Guidelines for the surface preparation of metals.*

ISO 5893:1993, *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Description.*

ISO 7500-1:—[1], *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tensile/compression testing machines.*

ISO 10365:1992, *Adhesives — Designation of main failure patterns.*

ISO 13895:1996, *Adhesives — Guidelines for the surface preparation of plastics.*

3 Principle

A bonded lap-joint is loaded in the centre of the bonded area until the joint breaks or until the maximum load is reached. The maximum load recorded is taken as the strength of the assembly.

1) To be published. (Revision of ISO 7500-1:1986)

4 Apparatus

4.1 Tensile-testing machine, operating in the compression mode, capable of maintaining a pre-determined constant crosshead rate. The machine shall be capable of determining a maximum load. The measured strength shall lie between 15 % and 85 % of the full-scale capacity of the load-measuring device. The machine shall permit the measurement and recording of the applied force with an accuracy of ± 1 %.

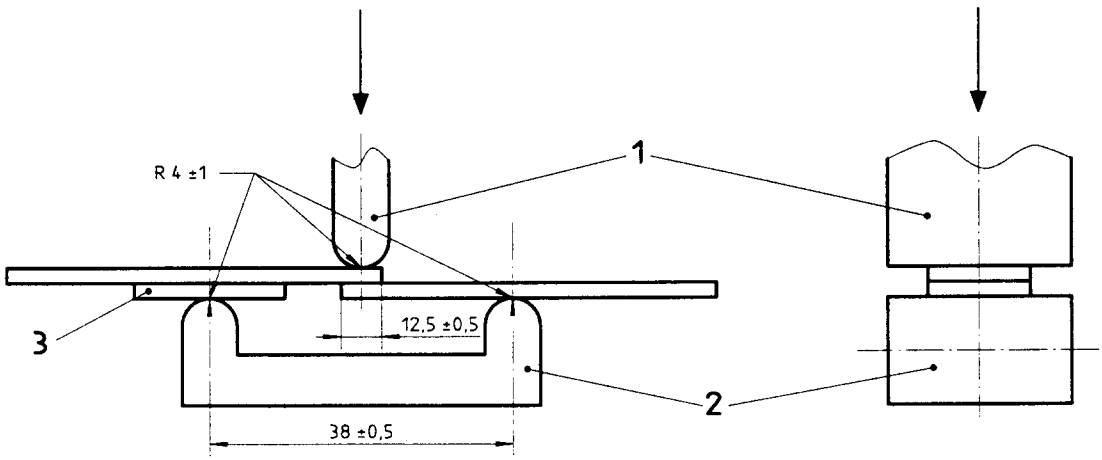
The equipment shall be calibrated regularly in accordance with ISO 7500-1, or in accordance with ISO 5893 in the case of rubber or plastic adherends.

NOTE — It is recommended that the machine be autographic, giving a chart that can be read in terms of millimetres of crosshead movement as one coordinate and applied force as the other coordinate. It is also recommended that inertialess equipment be used.

4.2 Supporting base and load-application element, as shown in figure 1. The load-application element and supporting base shall be made of the same material and have the same radius of curvature at their load-bearing extremities. The contact between the load-application element and the specimen and between the supporting base and the specimen or spacer plate (4.3) shall be uniform over the whole width of the specimen, and the load-application element and supporting base shall be wider than the specimen.

4.3 Spacer plate, as shown in figure 1, to compensate for the difference in height between the two ends of the specimen due to the overlap of the adherends. The width and thickness of the spacer plate shall be the same as those of the adherends, and the length shall not exceed 12,5 mm.

Dimensions in millimetres



Key

1 Load-application element
2 Supporting base
3 Spacer plate

Figure 1 — Specimen-holding fixture