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Standards

Irish Standard
I.S. EN 1465:2009

Adhesives - Determination of tensile lap-shear strength of bonded assemblies

I.S. EN 1465:2009

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English Version

Adhesives - Determination of tensile lap-shear strength of bonded assemblies

Adhésifs - Détermination de la résistance au cisaillement en traction d'assemblages collés à recouvrement simple

Klebstoffe - Bestimmung der Zugscherfestigkeit von Überlappungsklebungen

This European Standard was approved by CEN on 27 December 2008.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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Foreword

This document (EN 1465:2009) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by AENOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1465:1994.

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Introduction

Safety statement

Persons using this document should be familiar with the normal laboratory practice, if applicable. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any regulatory conditions.

ENVIRONMENTAL STATEMENT — It is understood that some of the material permitted in this standard may have negative environmental impact. As technological advantages lead to acceptable alternatives for these materials, they will be eliminated from this standard to the extent possible.

At the end of the test, the user of the standard shall take care to carry out an appropriate disposal of the wastes, according to local regulation.

1 Scope

This European Standard specifies a method for determining the tensile lap-shear strength of bonded assemblies when tested on a standard specimen and under specified conditions of preparation and testing.

NOTE 1 This test procedure is not applicable for calculations needed for bond design in structural joints.

NOTE 2 This test Test methods for the determination of tensile lap-shear strength of bonded assemblies with wood adhesives are also specified in EN 205 and EN 302-1

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 13887, *Structural Adhesives - Guidelines for surface preparation of metals and plastics prior to adhesive bonding*

EN ISO 291, *Plastics - Standard atmospheres for conditioning and testing (ISO 291:2005)*

EN ISO 527-1, *Plastics - Determination of tensile properties - Part 1: General principles (ISO 527-1:1993 including Corr 1:1994)*

EN ISO 10365, *Adhesives - Designation of main failure patterns (ISO 10365:1992)*

3 Principle

Adhesive lap-shear bond strength is determined by stressing in shear of a single overlap joint (see Figure 1) between rigid adherends by applying to the adherends a tensile force which is parallel to the bond area and to the major axis of the specimen. The reported result is the observed force or stress at rupture.

4 Apparatus

4.1 Testing machine

It shall comply with a test machine, class 1 and the response time of the machine shall be short enough not to affect the accuracy with which the force applied at the time of rupture can be measured.

NOTE The recorded force shall not differ from the true applied force by more than 1%. The machine shall be capable of applying a tensile force that increases at a steady rate. Where equipment does not allow for constant rate of load application, a rate of jaw separation shall be used which approximates the rate of loading (see EN ISO 527-1). It shall be provided with a suitable pair of self-aligning grips to hold the specimen. The grips and attachments shall be so constructed that they will move into alignment with the test specimen as soon as the load is applied, so that the long axis of the test specimen will coincide with the direction of the applied force through the centre line of the grip assembly to avoid bending moment. Grips that operate by bolting through the adherends shall be avoided since such grips give rise to undesirable stress concentration.

4.2 Jig

for accurately locating adherends during bonding.

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