

BS EN 6037:2015



BSI Standards Publication

Aerospace series — Fibre reinforced plastics — Test method — Determination of bearing strength

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National foreword

This British Standard is the UK implementation of EN 6037:2015.

BSI, a member of CEN, is obliged to publish EN 6037 as a British Standard. However, attention is drawn to the fact that during the development of this European Standard, the UK committee voted against its approval as a European Standard.

This standard is based on the same technical content and wording as the original EN draft issued in 1995. The draft was never developed into a formal EN standard. The UK committee are of the opinion that further clarification may be needed in some sections.

The biggest technical update is the addition of a modification to the type 1 test as specified in the standard. The modification allows torque to be applied to the bolt under test. The current two test types in the standard are known as pin bearing with a clearance between specimen and grip and bolt bearing with an applied torque.

Furthermore, if a torque is applied, the UK committee recommends the use of in-built bushes (washers) which are twice the size of the bolt and that the bolt should be torqued 'finger-tight', e.g. 1.3 Nm.

The UK committee wish to point out that any deviations to this standard need to be agreed between the test house and the customer and that this should be detailed as agreed between parties.

The UK participation in its preparation was entrusted to Technical Committee ACE/65, Non-metallic materials for aerospace purposes.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Amendments/corrigenda issued since publication

Date	Text affected
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 6037

November 2015

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English Version

**Aerospace series - Fibre reinforced plastics - Test method -
Determination of bearing strength**

Série aérospatiale - Matières plastiques renforcées de
fibres - Méthode d'essai - Détermination de la
résistance au matage

Luft- und Raumfahrt - Faserverstärkte Kunststoffe -
Prüfverfahren - Bestimmung der
Lochleibungsfestigkeit

This European Standard was approved by CEN on 28 June 2014.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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-CENELEC Management Centre has the same status as the official versions.

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 6037:2015) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

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 May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard defines the procedure to be used to determine the bearing strength of fibre composites with multidirectional reinforcement. This standard is applicable to composite laminates manufactured from unidirectional tape or woven fabric reinforcement.

This standard does not give any directions necessary to meet health and safety requirements. It is the responsibility of the user of this standard to consult and establish appropriate health and safety precautions.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2374, *Aerospace series — Glass fibre reinforced mouldings and sandwich composites — Production of test panels*

EN 2565, *Aerospace series — Preparation of carbon fibre reinforced resin panels for test purposes*¹⁾

EN 2743, *Aerospace series — Fibre reinforced plastics — Standard procedures for conditioning prior to testing unaged materials*

EN 2823, *Aerospace series — Fibre reinforced plastics — Test method for the determination of the effect of exposure to humid atmosphere on physical and mechanical characteristics*¹⁾

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
bearing stress at a given moment during the test
load experienced by the test specimen at a particular moment divided by the nominal bolt-diameter and the specimen thickness

3.2
yield bearing strength
bearing stress which results in a 0,02 times the diameter permanent set of the joint

3.3
ultimate bearing strength
bearing stress at the maximum load during the test (see Figure 1)

1) Published as ASD-STAN Prestandard at the date of publication of this standard. <http://www.asd-stan.org/>