

**BS EN 2043:2013**

*Incorporating corrigendum September 2013*



**BSI Standards Publication**

**Aerospace series — Metallic materials — General requirements for semi-finished product qualification (excluding forgings and castings)**

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**National foreword**

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The UK participation in its preparation was entrusted to Technical Committee ACE/61, Metallic materials for aerospace purposes.

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

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EUROPEAN STANDARD

**EN 2043**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2013

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English Version

**Aerospace series - Metallic materials - General requirements for  
semi-finished product qualification (excluding forgings and  
castings)**

Série aérospatiale - Matériaux métalliques - Exigences  
générales pour la qualification des demi-produits (à  
l'exclusion des pièces forgées, matricées ou moulées)

Luft- und Raumfahrt - Metallische Werkstoffe - Allgemeine  
Anforderungen an die Qualifizierung von Halbzeug  
(ausgenommen Schmiedestücke und Gussstücke)

This European Standard was approved by CEN on 8 May 2013.

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## Foreword

This document (EN 2043:2013) 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of an identical text or by endorsement, at the latest by January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

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.

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## Introduction

This standard is part of the series of EN metallic material standards for aerospace applications.

It is only valid when used in conjunction with a technical specification from the original organization of these standards, according to the intermediate procedure as described in EN 4258 Annex C, pending full introduction of the new organization as specified in EN 4258.

## 1 Scope

This European Standard defines the general requirements for semi-finished product qualification of EN metallic materials (excluding forgings and castings).

Specific requirements are given in the material standards and/or relevant technical specification.

## 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 4258, *Aerospace series — Metallic materials — General organization of standardization — Links between types of EN standards and their use*

EN 9100, *Aerospace series — Quality Management Systems — Requirements for Aviation, Space and Defense Organizations*

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard parts*

EN ISO 9001, *Quality management systems — Requirements (ISO 9001)*

## 3 Terms and definitions

For the purpose of this document the following definitions apply:

### 3.1

#### **semi-finished product**

see EN 4258

Note 1 to entry: Called product in the rest of this standard.

### 3.2

#### **established manufacturer**

manufacturer who is well established in terms of his manufacturing facilities and has manufactured products for the aerospace industry for a number of years to recognized national or company aerospace specifications, and has obtained significant statistical data for those products

These manufacturers shall already hold some form of approval conforming to EN ISO 9001 or to other national or company aerospace quality systems.

### 3.3

#### **established product**

product manufactured to an existing national or company aerospace specification, which is accepted as an alternative to the EN material standard, and for which significant national data is available

### 3.4

#### **new manufacturer**

manufacturer who has not previously manufactured products for the aerospace industry

### 3.5

#### **new product**

product which has not previously been manufactured, by an established or new manufacturer to a national or company aerospace specification

### 3.6 product pre-qualification

pre-qualification; manufacturers data or screening tests to verify basic properties according to the requirements of the relevant material standard, and process routes

## 4 Quality assurance

### 4.1 Approval of quality system

See EN 9100.

### 4.2 Product qualification

Product qualification shall be in accordance with EN 9133.

The product tested for qualification shall be manufactured on the same equipment and in accordance with the same specification and process procedures as the serial products.

Product qualification to a material standard includes the manufacturers' acceptance to a quality audit of the entire production procedure, from the raw material acquisition, through processing steps to batch release and the use of relevant standards including quality assurance documentation.

If required a confidential audit can be carried out.

Adjustment of the manufacturing schedule to accommodate improved manufacturing techniques to the state of the art is the manufacturer's responsibility but may require requalification of the product to the material standard.

As part of the product qualification, the mandated body reserves the right to carry out processing trials and/or product qualification tests in house or at an independent facility.

All results of the product qualification tests including reference to the manufacturing schedule shall be presented in a qualification test report (see subclause 4.2.3).

Upon successful product qualification the manufacturer's name and qualified product will be recorded at [www.ASD-cert.org](http://www.ASD-cert.org).

The qualification is directed to the raw material specifications or sources and the equipment and the processes which have been identified in the manufacturing schedule.

**NOTE** To use a certain product in an aerospace application product qualification alone may not be sufficient; additional pre-and/or post-qualification testing may be required by the user:

- Pre-qualification: manufacturer's data or screening tests to verify basic properties according to the requirements of the relevant material standard and process routes. The requirements shall be negotiated between the user and the mandated body.
- Post-qualification: specific component tests when required separately specified as part of the project certification process.
- These component tests are the responsibility of the user who should also specify the requirements.

#### 4.2.1 Tests

Product qualification testing shall conform to the requirements specified in line 100 of the relevant material standard.

For new products or new manufacturers this full qualification testing shall be required.



If the product is already qualified by an aerospace company against a recognized material standard (e.g. national or company specification) the mandated body in conjunction with (potential) user/users, may, if sufficient data (a qualification test report) is available, waive all or part of the qualification requirements tests of the material standard.

Reduction in qualification testing may also be considered for other cases, such as discontinued and re-started supply or the production of related product forms.

If the manufacturer cannot perform the required testing, a material test laboratory acceptable to the mandated body shall be appointed.

#### **4.2.2 Re-tests**

A re-test may be required when one or more test results do not meet the requirements of the product qualification test.

A re-test shall be performed on products from the same batch or batches agreed with the mandated body. All test and re-test results shall be reported. Unsatisfactory test results may be cause for refusal of the qualification of the product.

#### **4.2.3 Test report**

The product qualification test report shall contain the following information:

- manufacturer's name and address;
- relevant products;
- manufacturing schedule;
- material standard number;
- delivery condition and code;
- cast and batch numbers;
- tests and re-test results.

#### **4.2.4 Safety data sheet (if applicable)**

The manufacturer shall provide a safety data sheet prior to qualification testing.

#### **4.2.5 Interpretation of test results**

The mandated body shall have full discretion in the interpretation of the requirements, and shall detail any exemptions and divergences in their recommendations/report.

Where "unless otherwise specified", "in case of dispute" and/or "reference method" appears in the technical standard, material standard, and/or the test method standard, the mandated body shall have full discretion in applying the requirements.





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