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**Aeronavtika - Metode za preskušanje kovinskih materialov - Ultrazvočno preskušanje palic, plošč, kovnih materialov in izkovkov - 4. del: Merila sprejemljivosti**

Aerospace series - Test method for metallic materials - Ultrasonic inspection of bars, plates, forging stock and forgings - Part 4: Acceptance criteria

Luft- und Raumfahrt - Prüfverfahren für metallische Werkstoffe - Ultraschallprüfung von Stangen, Platten, Schmiedevormaterial und Schmiedestücken - Teil 4: Abnahmekriterien  
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Série aérospatiale - Méthode d'essai applicable aux matériaux métalliques - L'inspection par ultrasons des barres, des plaques, des stocks de forgeage et de pièces forgées - Partie 4: Critères d'acceptation  
211068571526/sist-en-4050-4-2014

**Ta slovenski standard je istoveten z: EN 4050-4:2012**

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**ICS:**

49.025.01	Materiali za letalsko in vesoljsko gradnjo na splošno	Materials for aerospace construction in general
49.035	Sestavni deli za letalsko in vesoljsko gradnjo	Components for aerospace construction

**SIST EN 4050-4:2014****en**

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EUROPEAN STANDARD

**EN 4050-4**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2012

ICS 49.025.05; 49.025.15

English Version

**Aerospace series - Test method for metallic materials -  
Ultrasonic inspection of bars, plates, forging stock and forgings -  
Part 4: Acceptance criteria**

Série aérospatiale - Méthode d'essai applicable aux matériaux métalliques - L'inspection par ultrasons des barres, des assiettes, des stocks de forgeage et de pièces forgées - Partie 4: Critères d'acceptation

Luft- und Raumfahrt - Prüfverfahren für metallische Werkstoffe - Ultraschallprüfung von Stangen, Platten, Schmiedevormaterial und Schmiedestücken - Teil 4: Abnahmekriterien

This European Standard was approved by CEN on 15 July 2011.

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Contents

	Page
Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Acceptance criteria.....	4
4 Choice of technique.....	5

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[SIST EN 4050-4:2014](https://standards.iteh.ai/catalog/standards/sist/0b6ce730-f5dd-4e03-9f3a-211068571526/sist-en-4050-4-2014)

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## Foreword

This document (EN 4050-4:2012) 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 March 2013, and conflicting national standards shall be withdrawn at the latest by March 2013.

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.

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**EN 4050-4:2012 (E)****1 Scope**

This European Standard specifies the acceptance criteria for products ultrasonically inspected in accordance with EN 4050-1.

**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 4050-1, *Aerospace series — Test method for metallic materials — Ultrasonic inspection of billets, bars, plates and forging stock and forgings,— Part 1: General requirements*

**3 Acceptance criteria**

The acceptance criteria, class 1 to 7, are given in Table 1.

**Table 1 — Acceptance criteria**

Class	Maximum single discontinuity, non linear <sup>1)</sup> FBH mm	Maximum multiple discontinuities <sup>2)</sup> mm	Single discontinuity linear <sup>1)</sup> FBH mm	
			Response	Length
7	0,6	0,4	Not applicable	
6	0,8	0,6	0,4	6
5	1,2	0,8	0,8	12,5
4	1,6	1,2	1,2	12,5
3	2,0	1,2	1,2	25
2	3,2	2,0	2,0	25
1	5,0	3,2	3,2	50

<sup>1)</sup> Spacing between indications larger than or equal to 25 mm (defect spacing horizontal and vertical to beam direction).  
<sup>2)</sup> Spacing between indications less than 25 mm (defect spacing horizontal and vertical to beam direction).

The FBH reference value for multiple discontinuities shall be set for the corresponding class in each case.

Reject within each particular class:

- Ultrasonic indications shall be not greater than the value given in Table 1 within the corresponding class.
- Loss in back wall echo shall be not greater than the value in dB/mm, or % screen height agreed between the manufacturer and purchaser.
- Noise levels shall be not greater than the monitor threshold level.

#### 4 Choice of technique

Classes 1, 2, 3, 4, 5 and 6 shall be inspected using either immersion, mechanized contact or manual contact inspection.

Classes 5 to 6 shall preferably be inspected by either immersion or mechanized contact.

Within class 7, the inspection of sheets and bar for forging or machining shall be carried out using either immersion or mechanized contact.

The forged parts shall be inspected using the immersion technique.

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