

BS EN 4050-4:2012



BSI Standards Publication

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

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National foreword

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

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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

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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.

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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 ¹⁾ FBH mm	Maximum multiple discontinuities ²⁾ mm	Single discontinuity linear ¹⁾ 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

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