SLOVENSKI STANDARD
SIST EN 2070-7:2001

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Aerospace series - Aluminium and aluminium alloy wrought products - Technical specification - Part 7: Wrought forging stock

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Luft- und Raumfahrt - Halbzeug aus Aluminium und Aluminium-Knetlegierungen - Technische Lieferbedingungen - Teil 7: Schmiedevormaterial

Série aérospatiale - Demi-produits corroyés en aluminium et alliages d'aluminium - Spécification technique - Partie 7: Produits corroyés destinés a la forge

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English version

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Aluminium and aluminium alloy wrought products
Technical specification
Part 7 : Wrought forging stock

Demi-produits corroyés
en aluminium et alliages d'aluminium
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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat : Rue Bréderode 2, B—1000 Bruxelles

Brief history

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

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

According to the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Contents

1 Scope and field of application

The present standard specifies the particular requirements of wrought products for the production of forgings in aluminium and aluminium alloys.

This standard shall be used in conjunction with EN 2070-1.

2 References

EN 2002-1, Aerospace series - Test methods for metallic materials - Part 1 - Tensile tests at ambient temperature 1)

EN 2004-2, Aerospace series - Test methods for aluminium and aluminium alloys products - Part 2 - Ultrasonic testing of plates, forgings and extrusions

EN 2070-1, Aerospace series - Aluminium and aluminium alloy wrought products - Technical specification - Part 1 - General requirements

EN 2070-2, Aerospace series - Aluminium and aluminium alloy wrought products - Technical specification - Part 2 - Sheet, strip, formed profiles and plate

EN 2070-3, Aerospace series - Aluminium and aluminium alloy wrought products - Technical specification - Part 3 - Bars and extrusions

EN 2715, Aerospace series - Macrographic examination of aluminium and aluminium alloy forging stock - Forging and wrought products 1).

3 Batch size

A batch of forging stock shall consist of material of the same cross-section from the same cast.

A cast is defined in EN 2070-1.

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1) In preparation

4 Dimensions

Dimensions and tolerances shall be agreed between the manufacturer and the purchaser and shall be specified on the order or on the inspection schedule.

The frequency of examination adopted by the manufacturer shall be sufficient to permit him to certify compliance with the requirements.

5 External defects

Visual surface inspection shall be carried out in the delivery condition.

The surface of the forging stock shall be clean and free from defects such as cracks, laps, scratches, corrosion, considered harmful to its use.

Surface defects may be removed provided the forging stock dimensions remain within any tolerances that may be specified.

6 Internal defects

If required by the order or the inspection schedule products having dimensions in accordance with table 1 shall be ultrasonically tested in accordance with EN 2004-2 and shall, unless otherwise specified, meet the requirements of class A.

If the material is ultrasonically tested in a condition different from the condition of supply, this shall be subject to agreement between manufacturer and purchaser and shall be specified on the order, inspection or manufacturing schedule.

7 Tensile test

The condition of the material shall comply with the relevant material standard.

The tensile test shall be carried out in accordance with EN 2002-1 on test samples heat treated in full section or after forging to 30 mm diameter.

Tests shall be performed on proportional round test pieces of the form and one of the sizes indicated in EN 2002-1.

The direction of test sample shall be in accordance with the requirements of the material standard.

Sampling frequency shall be in accordance with table 1.

The test results shall comply with the relevant material standard.

8 Back end defect and peripheral coarse grain zone

If the product is obtained by extrusion, macrographic examination shall be carried out on a cross section cut from the back end of the extrusion at a frequency sufficient to ensure that the entire batch meets the requirement of this standard.

The material shall be tested in accordance with EN 2715 and the samples shall be solution heat treated prior to testing.

The extrusion shall be free from back end defect and unless otherwise agreed between the manufacturer and the purchaser the maximum thickness of the peripheral coarse grain zone shall be as specified by the material standard, the order or the inspection schedule.

Where necessary, the product may be machined to meet the requirements.

9 Special tests

Special tests and inspections may be required by the purchaser. In such cases, after agreement between purchaser and manufacturer, the nature of test, method, number and acceptance standards shall be specified on the order or the inspection schedule.

10 Marking

Marking shall be in accordance with EN 2070-1 and EN 2070-2 or EN 2070-3 as appropriate.

If special tests in accordance with clause 9 are required the marking shall be defined and shall reflect these extra requirements.

The frequency of examination adopted by the manufacturer shall be sufficient to permit him to certify compliance with the requirements.

Table 1 — Summary of requirements for wrought forging stock

Dimensions in millimetres

Requirements	Clause	Product	Inspection/Testing		
			Method	Standard	Frequency
Dimensions	4	All products	—	—	See clause 4
External defects	5	All products	Visual	—	100 %
Internal defects	6	- Plate : a ⩾ 12 - Extruded product Product having square or rectangular section : • Transverse section ⩾ 650 mm² • Minor dimension a ⩾ 12 - Round section with diameter ⩾ 50	Ultrasonic	EN 2004-2 class A	100 % if specified
Tensile test	7	All products	Tensile	EN 2002-1	1 test per batch for each direction specified
Back end defect and peripheral coarse grain zone	8	Extruded product	Macrography	EN 2715	See clause 8
Marking	10	All products	Visual	—	See clause 10