

Specification for

Extruded bars and sections of aluminium- zinc-copper-chromium alloy —

(solution treated, controlled stretched
and artificially aged) (not
exceeding 150 mm diameter or minor
sectional dimension) (Zn 5.6, Mg 2.5,
Cu 1.6, Cr 0.23) (7075)

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Aerospace Standards Policy Committee (ACE/-) to Technical Committee ACE/24, upon which the following bodies were represented:

Aluminium Federation
 Aluminium Stockholders' Association
 Association of Light Alloy Refiners Limited
 BNF Metals Technology Centre
 British Forging Industry Association
 British Industrial Fasteners Federation
 British Investment Casting Trade Association
 Institute of British Foundrymen
 Light Metal Founders' Association
 Magnesium Industry Council
 Ministry of Defence
 Society of British Aerospace Companies Ltd.

This British Standard, having been prepared under the direction of the Aerospace Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 28 February 1990

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The following BSI references relate to the work on this standard:
 Committee reference ACE/24
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Amendments issued since publication

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Foreword

This British Standard has been prepared under the direction of the Aerospace Standards Policy Committee and supersedes, in part, DTD 5124. It is presented in tabular format. The composition of this material corresponds with International Designation 7075.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 and 2 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies the chemical composition, heat treatment, mechanical properties and the inspection and testing procedures applicable to extruded bars of aluminium-zinc-magnesium-copper-chromium alloy supplied in the solution treated, controlled stretched, and artificially aged condition, for use in that condition.

2 References

This standard makes reference to the following publications.

BS 5555, *Specification for SI units and recommendations for the use of their multiples and certain other units.*

BS 5775, *Specification for quantities, units, and symbols.*

BS EN 2500, *Guidelines for the preparation and use of standards for metallic materials*¹⁾.

BS L 100, *Procedure for inspection and testing of wrought aluminium and aluminium alloys.*

3 Technical requirements

The technical requirements for material to this standard shall comply with those specified in the table. All material supplied shall comply with the requirements appropriate to its dimensions and condition as specified in the standard given in line 5.1 of the table.

Symbols and units in the tables shall be interpreted in accordance with BS 5555, BS 5775 or BS EN 2500.

¹⁾ In preparation.

1	Chemical composition %		Element	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Ti + Zr	Others		Al	
													each	total		
	Min.	—	—	1.2	—	2.1	0.18	5.1	—	—	—	—	—	—	—	Base
Max.	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.25	0.05	0.15					
2	1			2				3				4				
4	Form Method of production Limit dimensions			Bars and sections Extrusion $0 < a \leq 150$ mm or $0 < D \leq 150$ mm												
5	5.1 Technical specification			BS L 100-1 and BS L 100-6												
6	6.1	Condition and heat treatment for delivery		T651 (1) Solution treat 460 ± 10 °C/W.Q. or O.Q. Control stretch 1 to 3 % Artificially age 135 ± 5 °C/t ≥ 12 h/A.C.												
7	Condition and heat treatment for use			T651 (1)												
8	Test piece heat treatment sampling			T651 (1)												
9	Dimensions concerned			mm	$0 < a \leq 10$ $0 < D \leq 10$				$10 < a \leq 100$ $10 < D \leq 100$				$100 < a \leq 150$ $100 < D \leq 150$			
11	Direction of sample			L												
12	Tensile	Temperature	θ	°C	Room temperature											
13		Proof stress	$R_{p,0.2}$	MPa	≥ 480				≥ 520				≥ 490			
14		Strength	R_m	MPa	≥ 540				≥ 580				≥ 550			
15		Elongation	A	%	≥ 4 (2)				≥ 4 (2)(3)				≥ 4 (3)			
98	Notes			(1) T6510 or T6511 (2) Elongation on $L_o = 50$ mm (3) Elongation on $5.65 \sqrt{S_o}$												
99	Typical uses			Highly stressed components requiring maximum strength with low residual stress												

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