

# Purchasing guidelines for: Prefabricated Aluminium Beams

Issued – September 2025

## 1. INTRODUCTION

The purpose of this guidance is to detail best purchasing practice for prefabricated aluminium beams. If beams have been assessed and certified as a 'NASC Approved Product', then no further action is required, other than a visual inspection of your supplier's certificate of product compliance. (A list of approved products can be found on the NASC website.) If the prefabricated aluminium beams have not been assessed and NASC approved, then the guidelines below should be followed.

## 2. TEST DATA

Test data is the criteria to which the product is independently tested as seen on the test report example opposite, & should consist of:

- Annual testing on Aluminium Beams for all suppliers / manufacturers, as follows:
  - Chemical analysis.
  - Mechanical analysis.
  - Outside diameter & wall thickness dimension.
  - Weld testing to ISO 10042:2018 min level D and should take into account the following:
    - Visual & LPI of 4 x 90 degree & 4 obtuse angle welds.
    - 2 x macro weld inspections.
    - HAZ zones & buckling resistance.
  - Annual tests must be by a UKAS accredited facility or TUV/SGS.
- \*\* If a current international welding approval is in place, [Eg, ISO 3834-2, or EN 1090-1/3] then weld testing to ISO 10042:2018 is not required.**

**The Test Laboratory Certificate of Test**

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Client: National Access and Scaffolding Confederation (NASC) Ltd., 12 Bridewell Place, London EC4V 6AP  
 Date of receipt: 31 August 2017  
 Reference No.: XXXXX  
 Order No.: NASC/XXX

Date of test: 4 September 2017  
 MI No.: XXXX  
 Specification: BS EN 755-2:2008 EN AW-6082-T6

Description: 10ft Welded Aluminium Alloy Beam, nominally 48.3mm OD main supports with brace struts, XXXX, 2.0 Metre Lattice Beam (450)  
 Identity: '25 287 XXXX 216'  
 Test methods: Procedure: TP28, BS EN ISO 3452-1:2013

**LIQUID PENETRANT INSPECTION REPORT**

INSPECTION DETAILS	
System: Type II, method C, form E	Material surface condition: As supplied
Cleaning Agent: Johnson and Allen JAC-2 Cleaner Batch Number: M612130	Viewing equipment: Halogen Arc Lamp Identification number: N/A
Penetrant: Johnson and Allen JAP Penetrant Batch Number: H1455	Penetration time (minutes): 15
Penetrant remover: Johnson and Allen JAC-2 Cleaner Batch Number: M612130	Development time (minutes): 15
Developer: Johnson and Allen JAD Developer Batch Number: D1071	Viewing conditions White Light measured at: 1130 LUX

RESULTS	Assessment criteria: As required by the test standard, assessment has been conducted in line with BS EN ISO 10042:2018	Comments
Surface	Accept	
	Reject	
Accept	Accept	N.S.I.
Accept	Accept	N.S.I.
Accept	Accept	N.S.I.
Accept	Accept	N.S.I.
Accept	Accept	N.S.I.
Accept	Accept	N.S.I.
Accept	Accept	N.S.I.
Accept	Accept	N.S.I.
Accept	Accept	N.S.I.

Summary: The welds examined by LPI met the requirements of BS EN ISO 10042:2018 Level B

Note: The test results detailed above apply only to the sample(s) of material submitted to the laboratory.

Tests performed by: L. Jarvis, D. Johnson  
 Certificate approved by: M. Smith, Section Leader  
 Signed: M. Smith Date: 7.1.17

Witnessed by: [Signature]

The Test Laboratory: [Address and contact details]

### 3. MATERIAL CERTIFICATION

**格证明产品质量合**  
AAA Aluminium (China) Limited  
Product Quality Approval Certificate  
EN10204:3.1

Ref No.: XX123456789 Page No.: 1/1  
FM 924-99

产品名称/型号 Product Section No.	UK0000001(AA1)	合金状态 Alloy-Temper	EN755-2 6082T6
客户名称 Customer Name	Example Scaffold Services Ltd	客户订单号/工厂订单号 Customer Order No./Mill Order No.	XXXX0123
长度/Extent	8.1 m	颜色/Color	Mill Finish
炉号 Heat No.	I	重量/重量 Amount/Weight	1350pcs/12883.64kg
生产许可证编号 Licence No.	XX10-000-00123	* 检验表 Testing Reference	BS EN755-2:2001/BS EN753-3:2013 BS 1433
* 检验项目 Item No.	单位/Unit	标准值 Standard	检验值 Examined
化学成分 Chemical Analysis	w%		结论 Conclusion
硅 Si		0.7-1.3	0.801 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
镁 Mg		0.6-1.2	0.647 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
铁 Fe		0.50	0.138 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
铜 Cu		0.10	0.000 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
锰 Mn		0.4-1.0	0.462 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
锌 Zn		0.25	0.017 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
锡 Sn		0.25	0.011 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
钛 Ti		0.10	0.017 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
镍 Ni		I	I <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
铅 Pb		I	I <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
铋 Bi		I	I <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
锑 Sb		I	I <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
铝 Al		I	I <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
机械性能 Mechanical Property	MPa		
抗拉强度 Tensile Strength	MPa	≥290	312 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
屈服强度 Yield Strength	MPa	≥250	281 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
延伸率 Elongation (50mm)	%	≥6	11.0 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
布氏硬度 Brinell Hardness	HBW	≥95	101.0 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
10mm 10 Size		Q48 30±0.50	48.17 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
20mm 20 Size		4.10±0.2/0.10	4.06 <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG
备注 Remark	Drift Test Passed The above tests have been certified to BS1139		
检验结果 Test Result	综合判定 Integrated Result: <input checked="" type="checkbox"/> 合格 Pass <input type="checkbox"/> 不合格 Not Pass		
Approved by	Prepared by	Issue date: 2017-12-28 (YYMMDD)	

注: 本证明书无检验单位公章无效, 复印无效。本证明书之检验结果仅对本公司提供之同批产品负责。  
This certificate (and Copy) will not be effective without the stamp of testing department. Testing result of this certificate only responsible for the same lot of product supplied by our company.

You need to check that a material test certificate from the manufacturer/supplier are available for all aluminium beam tube. Below is an example of a material test certificate, which will detail the following information:

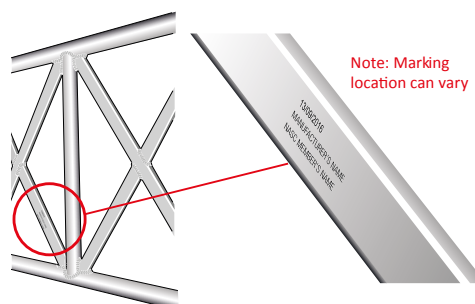
The British or European specification / standard, EN 755-2 6082T6.

- The specification/standard should be clearly identified on the test certificate.
- The test certificate will detail that it is to the requirements of: EN 10204:2001 section 3.1.

### 4. MARKING REQUIREMENTS

You need to check that each beam is permanently marked on the surface with the following information:

- Year of manufacture.
- Registered trade mark, or the manufacturer's name.
- NASC member company's name, [when the original manufacturer is not an NASC member].



### 5. USER GUIDE/DATA SHEET

Is there an aluminium beam guide/data sheet available which, as a minimum, includes the following information:

- Details of beam sections, dimensions and self weights.
- Connection details and fixing components.
- E and I values.
- Maximum allowable bending moment.
- Maximum allowable shear force.
- Factor of safety. (Must be at least 1.65)
- Information regarding how permissible loads have been obtained. i.e calculated in accordance with EN 1999:2007 or obtained from physical testing to EN 12811 part 3.
- Details of the configuration and frequency of lacing and bracing requirements to achieve the specified bending and shear loadings.

## REFERENCES AND FURTHER GUIDANCE

### Standards:

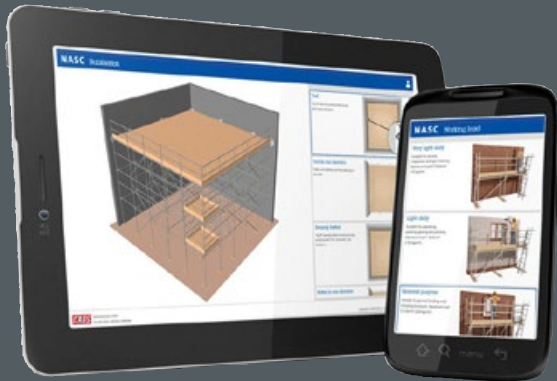
- BS EN 755-2:2025 Aluminium and aluminium alloys. Extruded rod/bar, tube and profiles - Mechanical properties
- BS EN 1090-1:2009+A1:2011 Execution of steel structures and aluminium structures – Requirements for conformity assessment of structural components
- BS EN 1090-2:2018+A1:2024 Execution of steel structures and aluminium structures – Technical requirements for steel structures
- BS EN 1090-3:2019 Execution of steel structures and aluminium structures – Technical requirements for aluminium structures
- BS EN 10204:2004 Metallic products. Types of inspection documents
- BS EN 1999-1-5:2007 UK National Annex to Eurocode 9. Design of aluminium structures – Shell structures
- BS EN 12811-3:2002 Temporary works equipment – Load testing
- BS EN 2390:2019 Aerospace series. Aluminium alloy 6082-T6. Tubes for structures  $0,6\text{mm} \leq a \leq 12,5\text{mm}$
- BS EN ISO 10042:2018 Welding. Arc-welded joints in aluminium and its alloys. Quality levels for imperfections
- BS EN ISO 3834-2:2021 Quality requirements for fusion welding of metallic materials – Comprehensive quality requirements

### NASC Guidance, including:

- TG20 Operational Guide
- TG23 Prefabricated Beams

*NOTE:* NASC guidance is generally updated every five years so consult website for latest version.

# Guidance that makes a difference



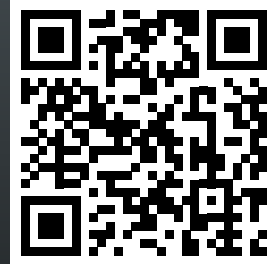
- Comprehensive industry guidance, recognised by the Health & Safety Executive (HSE)
- Targets all safety and commercial risks, ensuring your business remains safe and profitable
- Meticulously researched and written by experienced professionals, focused on improving the scaffolding industry
- Aimed at the busy general manager with user friendly, step-by-step advice
- Cutting edge technical guidance on best practice, including ePortal and compliance sheets, that could save you thousands of pounds
- Guidance used by the whole industry – but NASC members receive much of it free and the rest at a huge discount of up to 82%.

***“Setting the Standard for Scaffolding”***



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