BRITISH STEEL

S460M
High-strength structural sections

Technical datasheet

CONSTRUCTION

High-strength S460M sections from British Steel deliver the optimum balance between cost and weight.

Manufactured in the UK to carefully controlled standards, our high-strength sections outperform existing steel grades through their higher tensile and yield strength.

Working in partnership to meet customer needs

We're pleased to introduce high-strength grade S460M to our portfolio, in response to the industry's need for higher strength structural steel products.

Typical applications for this steel grade include multi-storey and high-rise buildings, as well as a wide range of other commercial and industrial uses.

Benefits of using high-strength S460M in your building

- Cost reduction: less weight and lighter foundations reduce overall building costs
- Increased space: lighter sections will allow an increase in overall space within the building
- Lower embodied carbon: less carbon in direct proportion to the weight saving
- Reduced carbon emissions: less weight means less transport and less raw material consumption

Metallurgically engineered for high performance

Our S460 strength is achieved through microstructural engineering, so provides optimal results in thermal processes such as welding.

British manufacture – unrivalled offering

Our UK mills produce a comprehensive product range of bespoke sections with unrivalled availability and lead times.

We're responsive and adaptable to customers' needs and take pride in giving great customer service and offering quality products made to precise requirements.

Quality assurance

As the only UK manufacturer of structural sections, our steel products are CE and UKCA marked and tested to the highest standards, providing quality and reassurance for the construction market.

We are ISO 9001: 2015 accredited and all material is tested to the highest standards in our independently approved ISO 17025 test houses, assuring full traceability.

Our S460M structural sections are produced according to EN 10025-4. Rigorous impact tests are carried out at prescribed temperatures in accordance with this, ensuring full compliance with the Construction Products Regulation.

We're also Environmental and Sustainability Standard BES 6001 certified, guaranteeing commitment to responsibly sourced materials.

Exceptional technical support

Our team of experienced metallurgists provides dedicated technical support to customers, including detailed metallurgical analysis to solve specific processing challenges, and the development of new and more advanced grades of steel for increasingly demanding applications.

S460M steel grade

The tables below indicate the standard mechanical properties and chemical composition for the S460M steel grade.

Mechanical properties

1. Tensile test

Specification	Grade	Minimum yield strength (MPa)						Tensile strength Rm (MPa)					Minimum elongation - A
		Nominal thickness (mm)						Nominal thickness (mm)					Lo = 5,65 √So (%)
		≤16	>16 ≤40	>40 ≤63	>63 ≤80	>80 ≤100	>100 ≤125	≤40	>40 ≤63	>63 ≤80	>80 ≤100	>100 ≤125	
EN 10025-4	S460M	460	440	430	410	400	385	540-720	530-710	510-690	500-680	490-660	17

2. Charpy-V notch impact test

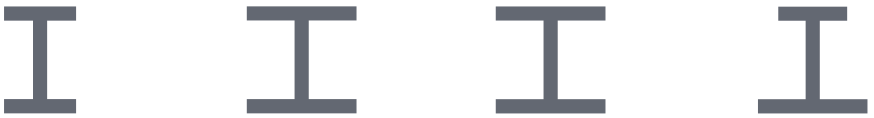
Test temperature °C	20	0	-10	-20
Minimum absorbed energy J (longitudinal)	55	47	43	40

Chemical composition

		Chemical composition % by mass																	
		min	max																
Specification	Grade	Al	C	Mn	Si	P	S	Nb	V	Ti	Cr	Mo	Ni	Cu	N	CEV			
																≤16	>16 ≤40	>40 ≤63	>63 ≤125
EN 10025-4	S460M	0.02	0.18	1.70	0.60	0.035	0.03	0.05	0.12	0.05	0.30	0.20	0.80	0.55	0.025	0.45	0.46	0.47	0.48

High-strength structural sections size range

Our high-strength structural sections range covers a wide variety of profiles and sizes.



Sizes	Universal beams	Universal columns	Universal bearing piles	Asymmetric beams
Ranging from:	305 x 165 x 40	203 x 203 x 46	203 x 203 x 45	280 ASB
Up to and including:	1016 x 305 x 487	356 x 406 x 634	356 x 368 x 174	300 ASB

Ability to offer up to 80mm flange thickness.
A minimum order quantity of 20MT per section size (including kg/m) applies for universal beams, columns and bearing piles.

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