

MILD STEEL: (LOW CARBON) _ Structural

DSM 1.1.11

Definition:

A hot-rolled structural steel made from specific grades of steel and formed in a range of industry standard cross-sectional shapes (or 'Sections'). Structural steel grades are designed with specific chemical compositions and mechanical properties formulated for particular applications. These are referenced using industry standard symbols which are arranged into three grades. **S235, S275 & S355**

- **S** – Structural Steel
- **235** – Minimum yield strength (MPa) at 16mm wall stock.
- **JR** – Brittle Fracture : Charpy impact method: 27J @Room temp.

This grade (**JR**) is the most popular & the lowest price.

Features:

Hot rolled steel requires less processing effort and being allowed to cool at room temperature (normalised) combine to make it cheaper and free from internal stresses. Suitable for applications where surface finish & precise form aren't as important as overall material strength. Can be welded, be aware of hardening & reduced toughness in the 'heat affected zone'.

ASM (DEK) Applications:

Suitable for more demanding welded prefabricated applications.

These values are representative and are dependent on section. For critical applications, refer to material data-sheet.

TYPICAL MECHANICAL PROPERTIES @25°C	
DENSITY:	7860 Kg/m³
YOUNGS MODULUS:	200 GPa
POISSONS RATIO:	0.27 - 0.3
YIELD STRENGTH	235 MPa @16mm wall
Max. TENSILE STRENGTH	360 MPa @16mm wall

Issue	01	02							
DCR	44682	N/A							

MILD STEEL: (LOW CARBON) _ Structural
DSM 1.1.11

CHEMICAL ANALYSIS		BENEFIT
Carbon	0,2 max	Good for machining & welding.
Silicon	0,05 max	Good for galvanising purposes
Mang	0,6 max	Combines with sulphur: good machining & finish.
Phos	0.05 max	Increases resistance to corrosion.
Sulphur	0.05 max	Good for machining.

CURRENT INTERNATIONAL SPECIFICATION COMPARISON	
BRITISH: BS	BS EN 10025-2: 2019: S235JR
GERMAN: DIN	St37 – 2
AMERICAN: ASTM	A283B
EUROPEAN: Wr. Nr.	1.0037
JAPANESE GRADE	JIS G 3131 SM400
CHINA GRADE	Q235

REPLACES

BS 4360 1986	DESCRIPTION
Grade 40B	Non Alloy Structural Steel Plate

Issue	01	02							
DCR	44682	N/A							

MILD STEEL: (LOW CARBON) _ Structural
DSM 1.1.11

Available Profiles:

- Plate, Square bar, Round bar, Flat bar

Available Sections:

- I- beams, Equal Angle, Unequal Angle & T-beams
- Hollow section: Square, Rectangular & Circular

Alternatives:

Unless otherwise stated on the engineering drawing, vendors can substitute BS EN 10025-2: 2019: S275JR without prior consent.

Alternative materials are allowed only with the express written permission of ASMPT. Please email details of your request to engineering_enquiries@asmpt.com

Issue	01	02							
DCR	44682	N/A							