



Material Grade: **S235**  
 Material Condition(s): **Untreated / Normalised / Drawn**  
 Surface Finish: **As rolled / As forged / Bright Drawn/ Bright turned**

Associated Standard: **BS EN 10025**  
**BS EN 10277**  
**BS EN 10250**

Description:

Readily weldable low carbon manganese steel with good impact resistance (also in sub-zero temperatures). This material is commonly supplied in the untreated or normalized condition and is available in several variations (denoted by additional letters and/or digits) which offer slight modifications of chemical composition and mechanical properties.

Machinability of this material is similar to that of mild steel.

Typical applications: **Welded non-critical structures**

Typical variations: **S235JR - increased carbon content, room temperature impact test only**  
**S235J0 - increased S & P contents, 0°C impact test**  
**S235J2 - impact properties at -20°C**  
**S235J2G3 - similar to S235J2, typically used for forged bar applications**

Conditions: **no designation or +AR - as rolled**  
**+N - normalised**  
**+C - cold drawn**

1. STEELMAKING

	<u>C*</u>	<u>Mn</u>	<u>S</u>	<u>P</u>	<u>Cu</u>	<u>CEV*</u>
Min						
Max	0.17	1.4	0.030	0.030	0.55	0.38

(\* differs with section thickness and grade variation)

2. TYPICAL MECHANICAL PROPERTIES

Test type			Tensile and hardness test (at room temperature)					Impact test (KV)			
			Yield (Re)	0.2 % proof	UTS (Rm)	Elong (A)	R of A (Z)	Hardness	Room Temp	0°C	-20°C
Variation	Sample dia	Unit	N/mm2	N/mm2	N/mm2	%	%	HB	J	J	J
S235J2 +N	> 16 ≤ 40mm	Min	225		360	25					27
		Max			510						
S235J2 +N	> 100 ≤ 150mm	Min	195		350	22					27
		Max			500						
S235J2G3	> 250 ≤ 500mm	Min	165		340	23					27
		Max									
S235JR+C	> 16 ≤ 40mm	Min	260		390	10					
		Max			730						