

Material Grade: **41Cr4**
 Material Condition(s): **Untreated / Annealed / Quench and tempered**
 Surface Finish: **As rolled / As forged / Bright turned**

Associated Standard: **BS EN 10083**
BS EN 10250

Description:

Low alloy steel that possesses good tensile and shock resistance properties restricted to sections of approx. 4". Its resistance to wear can be considerably increased by flame hardening or nitriding (for maximum wear and abrasion resistance). Bars can be supplied in quenched and tempered condition with tensile strength exceeding 800 N/mm²) but are also available in the softened, more machineable state suitable for further heat treatment.

Typical applications: **Axle shafts, crankshafts, gears, induction hardened pins**

Typical conditions: **no designation or +U - as rolled**
+A - soft annealed
+QT - quench and tempered
+H - with additional hardenability test
+HH - with enhanced hardenability test

1. STEELMAKING

	<u>C</u>	<u>Si</u>	<u>Mn</u>	<u>S*</u>	<u>P</u>	<u>Cr</u>
Min	0.38		0.60			0.90
Max	0.45	0.40	0.90	0.035	0.025	1.20

(* grade variation 41CrS4 has S range of 0.020-0.040%)

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
Variation	Sample dia	Unit	N/mm ²	N/mm ²	N/mm ²	%	%	HB	J
41Cr4 + A			Min						
			Max					241	
41Cr4 + QT, forged	≤ 70mm	Min	560		800	14			35
		Max							
41Cr4 + QT, rolled	> 40 ≤ 100mm	Min	560		800	14	40		35
		Max			950				