

Material Grade: **C60**
 Material Condition(s): **Untreated / Normalised / Annealed / Quench and tempered**
 Surface Finish: **As rolled / As forged / Bright turned**

Associated Standard: **BS EN 10083**
BS EN 10277
BS EN 10250

Description:

A medium carbon steel with good tensile strengths. Although this grade is capable of through hardening by quenching and tempering on limited sections, it is more commonly supplied in the untreated or normalised condition. There are several variations available (denoted by additional letters) which offer slight modifications of chemical composition.

This material possess good wear resistance, but poor weldability.

Typical applications: **Gears, cylinders, cams, sprockets**

Typical variations: **C60 - basic grade with chemical composition from paragraph 1**
C60E - modified with limited P & S levels
C60R - modified with limited P level and minimum S level for enhanced machinability

Typical conditions: **no designation or +U - as rolled**
+A - soft annealed
+N - normalised
+QT - quench and tempered
+SH - turned
+H - with additional hardenability test (for C60E and C60R)
+HH - with enhanced hardenability test (for C60E and C60R)

1. STEELMAKING

	<u>C</u>	<u>Si</u>	<u>Mn</u>	<u>S*</u>	<u>P*</u>	<u>Cr</u>	<u>Ni</u>	<u>Mo</u>	<u>Cr+Mo+Ni</u>
Min	0.57		0.60						
Max	0.65	0.40	0.90	0.045	0.045	0.40	0.40	0.10	0.63

(* differs with grade variation)

2. TYPICAL MECHANICAL PROPERTIES

Test type			Tensile and hardness test (at room temperature)					
			Yield (Re)	0.2 % proof	UTS (Rm)	Elong (A)	R of A (Z)	Hardness
Variation	Sample dia	Unit	N/mm ²	N/mm ²	N/mm ²	%	%	HB
C60 + A			Min					
			Max					241
C60 + N	> 100 ≤ 250mm	Min	310		650	11		
		Max						
C60 + N	> 250 ≤ 500mm	Min	275		630	11		
		Max						241
C60 + QT	> 40 ≤ 100mm	Min	450		750	14	35	
		Max			900			
C60 + +SH	> 63 ≤ 100mm	Min			670			198
		Max			940			278