

Material Grade: C60 (1.0601)

Other Variant(s): C60E (1.1221) – identical to C60, except for:
Max S%=0.035 and max P%=0.025 (ISO683-1) or max P%=0.030 (EN10083-2)
C60R (1.1223) – identical to C60, except for:
S%=0.020-0.040 and max P%=0.025 (ISO683-1) or max P%=0.030 (EN10083-2)
This variant is only applicable to rolled bar standards.

Associated standards:¹ BS EN ISO 683-1:2018 (current)
EN10083-2 (obsolete, all editions)
BS EN ISO683-7: 2024 (current)
ISO 683-18:2014 (current)
BS EN 10277:2018 (current)
BS EN 10250-2: 2022 (current)

Material Condition(s): No designation or +U – Untreated (as rolled)
+A – Soft annealed
+S – With improved shearability
+QT – Quench and tempered
+N – Normalised

Surface Finish: No designation or +HW – Black rolled
+RM – Rough machined – rough machined rolled or forged
+SH – Untreated and peeled/ turned (rolled bar)
+C – Cold drawn
+G – Ground

Typical tolerance(s):

Surface finish	Product type	Standard	Dimensional tolerance	Straightness	Clean-up
No designation/ +HW	Rolled bar	BS EN ISO683-1	EN10060	EN10060	ISO9443 Class A
+RM	Rolled bar + rough machined	BS EN ISO683-1	EN10060	EN10060	ISO9443 Class A
+SH, +C, +G	Rolled bright bar	BS EN ISO683-7	Defined in 683-7	Defined in 683-7	Defined in 683-7
Any designation	Forged bar	BS EN10250-2	Per agreement	Per agreement	Per agreement

Other supply options: *(only applicable to rolled bar standards)*

+H - with an additional hardenability test for grades E and R only to the specified ranges of the standard
+HH - with an additional hardenability test (narrowed upper limit values as per standard) for grade variant E
+HL - with an additional hardenability test (narrowed lower limit values as per standard) for grade variant R

1. TYPICAL CHEMICAL COMPOSITION *(from the most current version of the standard(s))*

%	<u>C</u>	<u>Si</u>	<u>Mn</u>	<u>P</u>	<u>S</u>	<u>Cr</u>	<u>Mo</u>	<u>Ni</u>	<u>Cu</u>	<u>Cr+Mo+Ni</u>
Min	0.57	0.1	0.6	0	0	0	0	0	0	0
Max	0.65	0.4	0.9	0.045	0.045	0.4	0.1	0.4	0.3	0.63

2. TYPICAL MECHANICAL PROPERTIES (from the most current version of the standard(s))

Test type				Tensile and hardness test (at room temperature)						Impact test (KCV)
				Yield (Re)	0.2 % proof	UTS (Rm)	Elong (A)	R of A (Z)	Hardness	Average of 3 / individual value
Condition	Nominal diameter d (mm)	Direction	Unit	N/mm2	N/mm2	N/mm2	%	%	HB	Room Temp
BLACK ROLLED	Untreated (No designation or +U)	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	-	-
	With improved shearability +S	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	255	-
	Soft Annealed +A	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	241	-
	Quench and tempered +QT	≤ 16 ⌀	Min	580	-	850	11	25	-	-
			Max	-	-	1000	-	-	-	-
	Quench and tempered +QT	16<d≤ 40 ⌀	Min	520	-	800	13	30	-	-
			Max	-	-	950	-	-	-	-
	Quench and tempered +QT	40<d≤ 100 ⌀	Min	450	-	750	14	35	-	-
			Max	-	-	900	-	-	-	-
	Normalised +N	≤ 16 ⌀	Min	380	-	710	10	-	-	-
			Max	-	-	-	-	-	-	-
	Normalised +N	16<d≤ 100 ⌀	Min	340	-	670	11	-	-	-
			Max	-	-	-	-	-	-	-
	Normalised +N	100<d≤ 250 ⌀	Min	310	-	650	11	-	-	-
			Max	-	-	-	-	-	-	-
BRIGHT ROLLED	Untreated, then peeled/turned +SH	16<d≤ 100	Min	-	-	670	-	-	196	-
			Max	-	-	940	-	-	278	-
	Untreated, then cold drawn +C	5<d≤ 10	Min	-	630	800	5	-	-	-
			Max	-	-	1150	-	-	-	-
	Untreated, then cold drawn +C	10<d≤ 16	Min	-	550	780	5	-	-	-
			Max	-	-	1130	-	-	-	-
	Untreated, then cold drawn +C	16<d≤ 40	Min	-	480	730	6	-	-	-
			Max	-	-	1100	-	-	-	-
	Quench and tempered, then peeled/turned +QT+SH	16<d≤ 40	Min	-	520	800	13	-	-	-
			Max	-	-	950	-	-	-	-
	Quench and tempered, then peeled/turned +QT+SH	40<d≤ 100	Min	-	450	750	14	-	-	-
			Max	-	-	900	-	-	-	-
	Quench and tempered, then cold drawn +QT+C	5<d≤ 10	Min	-	630	900	6	-	-	-
			Max	-	-	1000	-	-	-	-
	Quench and tempered, then cold drawn +QT+C	10<d≤ 16	Min	-	615	880	6	-	-	-
			Max	-	-	1080	-	-	-	-
	Quench and tempered, then cold drawn +QT+C	16<d≤ 40	Min	-	580	830	7	-	-	-
			Max	-	-	1030	-	-	-	-
	Quench and tempered, then cold drawn +QT+C	40<d≤ 63	Min	-	545	780	8	-	-	-
			Max	-	-	980	-	-	-	-
	Quench and tempered, then cold drawn +QT+C	63<d≤ 100	Min	-	525	750	8	-	-	-
			Max	-	-	950	-	-	-	-

FORGED BAR	Annealed +A	-	-	Min	-	-	-	-	-	-	-
				Max	-	-	-	-	-	241	-
	Normalised +N	$d \leq 100 \text{ } \varnothing$	L	Min	340	-	670	11	-	-	-
				Max	-	-	-	-	-	-	-
	Normalised +N	$100 < d \leq 160 \text{ } \varnothing$	L	Min	310	-	650	11	-	-	-
				Max	-	-	-	-	-	-	-
	Normalised +N	$160 \leq d \leq 250 \text{ } \varnothing$	T	Min	310	-	650	8	-	-	-
				Max	-	-	-	-	-	-	-
	Normalised +N	$250 < d \leq 500 \text{ } \varnothing$	T	Min	275	-	630	8	-	-	-
				Max	-	-	-	-	-	-	-
	Normalised +N	$500 < d \leq 1000 \text{ } \varnothing$	T	Min	260	-	620	7	-	-	-
				Max	-	-	-	-	-	-	-
	Quench and tempered +QT	$d \leq 105 \text{ } \varnothing$	L	Min	450	-	750	14	-	-	-
				Max	-	-	-	-	-	-	-
	Quench and tempered +QT	$105 < d \leq 160 \text{ } \varnothing$	L	Min	390	-	690	15	-	-	-
				Max	-	-	-	-	-	-	-
	Quench and tempered +QT	$160 \leq d \leq 240 \text{ } \varnothing$	T	Min	390	-	690	10	-	-	-
				Max	-	-	-	-	-	-	-
	Quench and tempered +QT	$240 < d \leq 495 \text{ } \varnothing$	T	Min	350	-	670	9	-	-	-
				Max	-	-	-	-	-	-	-

¹ valid at the time of writing.

Whilst great care and attention has been paid to compose this datasheet but we will not take the responsibility for any errors.