

Material Grade: 34CrNiMo6 (1.6582)

Associated standards:¹

- BS EN ISO 683-2:2018 (current)
- EN10083-3 (obsolete, all editions)
- BS EN ISO683-7: 2024 (current)
- ISO 683-18:2014 (current)
- BS EN 10277:2018 (current)
- BS EN 10250-3: 2022 (current)

Material Condition(s):

- No designation or +U – Untreated (as rolled)
- +A – Soft annealed
- +QT – Quench and tempered

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 ISO683-2	EN10060	EN10060	ISO9443 Class A
+RM	Rolled bar + rough machined	BS EN ISO683-2	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 EN10250-3	Per agreement	Per agreement	Per agreement

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

- +H - with an additional hardenability test
- +HH - with an additional hardenability test (narrowed upper limit values as per standard)
- +HL - with an additional hardenability test (narrowed lower limit values as per standard)

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>
Min	0.3	0.1	0.5	0	0	1.3	0.15	1.3	0
Max	0.38	0.4	0.8	0.025	0.035	1.7	0.3	1.7	0.4

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) Average of 3 / individual value
				Yield (Re)	0.2 % proof	UTS (Rm)	Elong (A)	R of A (Z)	Hardness	Room Temp
Condition	Nominal diameter d (mm)	Direction	Unit	N/mm2	N/mm2	N/mm2	%	%	HB	J
BLACK ROLLED	Untreated (No designation or +U)	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	-	-
	Soft Annealed +A	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	248	-
	Quench and tempered +QT	≤ 16 ⌀	Min	-	1000	1200	9	40	-	-
			Max	-	-	1400	-	-	-	-
	Quench and tempered +QT	16<d≤ 40 ⌀	Min	-	900	1100	10	45	-	45/31.5
			Max	-	-	1300	-	-	-	-
	Quench and tempered +QT	40<d≤ 100 ⌀	Min	-	800	1000	11	50	-	45/31.5
			Max	-	-	1200	-	-	-	-
	Quench and tempered +QT	100<d≤ 160 ⌀	Min	-	700	900	12	55	-	45/31.5
			Max	-	-	1100	-	-	-	-
	Quench and tempered +QT	160<d≤ 250 ⌀	Min	-	600	800	13	55	-	45/31.5
			Max	-	-	950	-	-	-	-
BRIGHT ROLLED	Annealed, then peeled/turned +A+SH	16< d ≤ 100	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	248	-
	Annealed, then cold drawn +A+C	5< d ≤ 10	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	308	-
	Annealed, then cold drawn +A+C	10< d ≤ 16	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	298	-
	Annealed, then cold drawn +A+C	16< d ≤ 40	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	293	-
	Annealed, then cold drawn +A+C	40< d ≤ 100	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	288	-
	Quench and tempered, then peeled/turned +QT+SH	16< d ≤ 40	Min	-	900	1100	10	-	-	40/28
			Max	-	-	1300	-	-	-	-
	Quench and tempered, then peeled/turned +QT+SH	40< d ≤ 100	Min	-	800	1000	11	-	-	45/31.5
			Max	-	-	1200	-	-	-	-
	Quench and tempered, then cold drawn +QT+C	5< d ≤ 16	Min	-	770	1000	8	-	-	-
			Max	-	-	1200	-	-	-	-
FORGED	Quench and tempered +QT	d<160 ⌀	Min	600	-	800	13	-	-	45/31.5
			Max	-	-	-	-	-	-	-
	Quench and tempered +QT	160≤d≤ 240 ⌀	Min	600	-	800	9	-	-	22/15.4
			Max	-	-	-	-	-	-	-
	Quench and tempered +QT	240<d≤ 495 ⌀	Min	540	-	750	10	-	-	22/15.4
			Max	-	-	-	-	-	-	-
	Quench and tempered +QT	495<d≤ 990 ⌀	Min	490	-	700	11	-	-	20/14
			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.