

	MATERIAL DATASHEET
	Title: 34CrNiMo6

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))*

%	C	Si	Mn	P	S	Cr	Mo	Ni	Cu
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

 HILLFOOT METALS SUPPLY CHAIN INNOVATION	MATERIAL DATASHEET										
	Title: 34CrNiMo6										

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
BLACKROLLED	Untreated (No designation or +U)	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	-	-
	Soft Annealed +A	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	248	-
	Quench and tempered +Q T	≤ 16 _{mm}	Min	-	1000	1200	9	40	-	-
			Max	-	-	1400	-	-	-	-
	Quench and tempered +Q T	16< d ≤ 40 _{mm}	Min	-	900	1100	10	45	-	45/31.5
			Max	-	-	1300	-	-	-	-
	Quench and tempered +Q T	40< d ≤ 100 _{mm}	Min	-	800	1000	11	50	-	45/31.5
			Max	-	-	1200	-	-	-	-
	Quench and tempered +Q T	100< d ≤ 160 _{mm}	Min	-	700	900	12	55	-	45/31.5
			Max	-	-	1100	-	-	-	-
	Quench and tempered +Q T	160< d ≤ 250 _{mm}	Min	-	600	800	13	55	-	45/31.5
			Max	-	-	950	-	-	-	-
BRIGHTROLLED	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 +Q T+SH	16< d ≤ 40	Min	-	900	1100	10	-	-	40/28
			Max	-	-	1300	-	-	-	-
	Quench and tempered, then peeled/turned +Q T+SH	40< d ≤ 100	Min	-	800	1000	11	-	-	45/31.5
			Max	-	-	1200	-	-	-	-
	Quench and tempered, then cold drawn +Q T+C	5< d ≤ 16	Min	-	770	1000	8	-	-	-
			Max	-	-	1200	-	-	-	-
	Quench and tempered, then cold drawn +Q T+C	16< d ≤ 40	Min	-	750	1000	8	-	-	-
			Max	-	-	1200	-	-	-	-
	Quench and tempered, then cold drawn +Q T+C	40< d ≤ 63	Min	-	720	1000	9	-	-	-
			Max	-	-	1200	-	-	-	-
	Quench and tempered, then cold drawn +Q T+C	63< d ≤ 100	Min	-	650	1000	10	-	-	-
			Max	-	-	1200	-	-	-	-
FORGED	Quench and tempered +Q T	d<160 _{mm}	Min	600	-	800	13	-	-	45/31.5
			Max	-	-	-	-	-	-	-
	Quench and tempered +Q T	160≤d≤ 240 _{mm}	Min	600	-	800	9	-	-	22/15.4
			Max	-	-	-	-	-	-	-
	Quench and tempered +Q T	240<d≤ 495 _{mm}	Min	540	-	750	10	-	-	22/15.4
			Max	-	-	-	-	-	-	-
	Quench and tempered +Q T	495<d≤ 990 _{mm}	Min	490	-	700	11	-	-	20/14
			Max	-	-	-	-	-	-	-

¹ valid at the time of writing.

 HILLFOOT METALS SUPPLY CHAIN INNOVATION	MATERIAL DATASHEET
	Title: 34CrNiMo6

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