

 HILLFOOT METALS SUPPLY CHAIN INNOVATION	MATERIAL DATASHEET	
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Material Grade: 25CrMo4 (1.7218)

Other Variant(s): 25CrMoS4 (1.7213) – identical to 25CrMo4, except for S% 0.020-0.040
This variant is only applicable to rolled bar standards.

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)
+S – With improved shearability
+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>Cu</u>
Min	0.22	0.1	0.6	0	0	0.9	0.15	0
Max	0.29	0.4	0.9	0.025	0.035	1.2	0.3	0.4

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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) <i>Average of 3 / individual value</i>
				Yield (Re)	0.2 % proof	UTS (Rm)	Elong (A)	R of A (Z)	Hardness	Room Temp
Condition	Nominal diameter <i>d</i> (mm)	Direction	Unit	N/mm ²	N/mm ²	N/mm ²	%	%	HB	J
BLACK ROLLED	Untreated (No designation or +U)	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	-	-
	With improved shearability +S	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	255	-
	Soft Annealed +A	-	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	212	-
	Quench and tempered +QT	≤ 16 [⊖]	Min	-	700	900	12	50	-	-
			Max	-	-	1100	-	-	-	-
	Quench and tempered +QT	16<d≤ 40 [⊖]	Min	-	600	800	14	55	-	50/35
			Max	-	-	950	-	-	-	-
	Quench and tempered +QT	40<d≤ 100 [⊖]	Min	-	450	700	15	60	-	50/35
			Max	-	-	850	-	-	-	-
	Quench and tempered +QT	100<d≤ 160 [⊖]	Min	-	400	650	16	60	-	45/31.5
			Max	-	-	800	-	-	-	-
BRIGHT ROLLED	Annealed, then peeled/turned +A+SH	16< d ≤ 100	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	212	-
	Annealed, then cold drawn +A+C	5< d ≤ 10	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	270	-
	Annealed, then cold drawn +A+C	10< d ≤ 16	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	260	-
	Annealed, then cold drawn +A+C	16< d ≤ 40	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	255	-
	Annealed, then cold drawn +A+C	40< d ≤ 100	Min	-	-	-	-	-	-	-
			Max	-	-	-	-	-	250	-
	Quench and tempered, then peeled/turned +QT+SH	16< d ≤ 40	Min	-	600	800	14	-	-	50/35
			Max	-	-	950	-	-	-	-
	Quench and tempered, then peeled/turned +QT+SH	40< d ≤ 100	Min	-	450	700	15	-	-	50/35
			Max	-	-	850	-	-	-	-
	Quench and tempered, then cold drawn +QT+C	5< d ≤ 16	Min	-	700	900	9	-	-	-
			Max	-	-	1100	-	-	-	-
FORGED	Quench and tempered +QT	d<160 [⊖]	Min	450	-	700	15	-	-	50/35
			Max	-	-	-	-	-	-	-
	Quench and tempered +QT	160≤d≤ 240 [⊖]	Min	450	-	700	-	-	-	-
			Max	-	-	-	-	-	-	-
	Quench and tempered +QT	240<d≤ 495 [⊖]	Min	400	-	650	13	-	-	27/18.9
			Max	-	-	-	-	-	-	-
	Quench and tempered +QT	495<d≤ 990 [⊖]	Min	380	-	600	14	-	-	22/15.4
			Max	-	-	-	-	-	-	-

¹ valid at the time of writing.

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