

Material Grade: 18CrNiMo7-6 (1.6587)

Associated standards:¹ BS EN ISO 683-3:2019 (current)
EN10084 (obsolete, all editions)
BS EN ISO683-7: 2024 (current)
ISO 683-18:2014 (current)
BS EN 10277:2018 (current)

Material Condition(s): No designation or +U – Untreated (as rolled)
+A – Soft annealed
+S – With improved shearability
+TH – Treated to a hardness range
+FP – Treated to Ferrite- Pearlite structure

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)*

+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	0.15	0.15	0.5	0	0	1.5	0.25	1.4	0
Max	0.21	0.4	0.9	0.025	0.035	1.8	0.35	1.7	0.4

2. HARDENABILITY BANDS (VARIANT +H)

mm/ HRC	1.5	3	5	7	9	11	13	15	20	25	30	35	40
max	48	48	48	48	47	47	46	46	44	43	42	41	41
min	40	40	39	38	37	36	35	34	32	31	30	29	29

3. 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 BAR	Untreated (No designation or +U)	-	-	Min	-	-	-	-	-	-	-
				Max	-	-	-	-	-	-	-
	With improved shearability +S	-	-	Min	-	-	-	-	-	-	-
				Max	-	-	-	-	-	255	-
	Soft Annealed +A	-	-	Min	-	-	-	-	-	-	-
				Max	-	-	-	-	-	229	-
	Treated to hardness range +TH	-	-	Min	-	-	-	-	-	179	-
				Max	-	-	-	-	-	229	-
	Treated to Ferrite-Pearlite structure +FP	-	-	Min	-	-	-	-	-	159	-
				Max	-	-	-	-	-	207	-
BRIGHTROLLED BAR	Annealed, then peeled/turned +A+SH	16< d ≤ 100	-	Min	-	-	-	-	-	-	-
				Max	-	-	-	-	-	229	-
	Treated to Ferrite-Pearlite structure and peeled/turned + FP+SH	16< d ≤ 100	-	Min	-	-	-	-	-	149	-
				Max	-	-	-	-	-	201	-
	Treated to Ferrite-Pearlite structure and drawn +FP+C	16< d ≤ 100	-	Min	-	-	-	-	-	149	-
				Max	-	-	-	-	-	280	-

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.