

## Comparison of steel grades

	JUS	Ć.4520
	DIN	<b>17CrNiMo6</b>
<b>18CrNiMo7-6</b>	EN	<b>10084-1998,</b>
Number: 1.6587	BS	-
	GOST	-
	AISI	4820
	UNI	-
	NF	<b>18NCD6</b>

**Chemical composition (cast analysis)**

Chemical elements	C	Si max	Mn	P max.	S	Cr	Mo	Ni
%, by mass	0,15-0,2	0,40	0,50-0,9	0,035	≤ 0,035	1,50-1,8	0,25-0,3	1,40-1,70
Permissible deviation	± 0,02	+ 0,03	± 0,04	+ 0,005	+ 0,005	± 0,05	± 0,02	± 0,02

**Hardness limits for steel**

Hardness HRC at a distance from quenched end of test piece (in milimetres) of

mm		1,5	3	5	7	9	11	13	15	20	25	30	35	40	45	50
+H max.		48	48	48	48	47	47	46	46	44	43	42	41	41	-	-
+H min.		40	40	39	38	37	36	35	34	32	31	30	29	29	-	-
H max.		48	48	48	48	47	47	46	46	44	43	42	41	41	-	-
H min.		43	43	42	41	40	40	39	38	36	35	34	33	33	-	-
+H max.		45	45	45	45	44	43	42	42	40	39	38	37	37	-	-
L min.		40	40	39	38	37	36	35	34	32	31	30	29	29	-	-

Hardness requirements for products delivered in the conditions "treated to improve shearability" (+S), "annealed to maximum hardness requirements" (+A), "treated to hardness range" (+TH) or "treated to ferrite-pearlite structure and hardness range" (+FP)

Brinell hardness in the condition

+S max.	+A max.	+TH min.	+FP max.
255	229	179	229
			159
			207

Non-metallic inclusions Requirements for microscopic degree of purity when tested in accordance with DIN 50 602 (method K) (valid for oxidic non-metallic inclusions)

D (mm) Bars Diameter d (mm)	K Total characteristic value K (oxides) for the individual cast
140 < d ≤ 200	K 4 ≤ 50
100 < d ≤ 140	K 4 ≤ 45
70 < d ≤ 100	K 4 ≤ 40

**BEBON international — We are specialized in hot rolled steel plate/coil.**

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$35 < d \leq 70$  $K 4 \leq 35$  $17 < d \leq 35$  $K 3 \leq 40$  $8 < d \leq 17$  $K 3 \leq 30$  $d \leq 8$  $K 2 \leq 35$ **Conditions for heat treating test bars and treatment of the steels**

End test	quenchn	Carbunnzing	Core-hardening	Case-hardening	Tempering, 0C
	Quenching,	temperature,	temperature, 0C	temperature, 0C	
	0C	0C			
860		880 to 980	830 to 870	780 to 820	150 to 200

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