

Quality 54SiCr6

According to Standard EN 10089 : 2002

Number 1.7102



Comparable Standards	German DIN	France AFNOR	Spain UNE	China GB	U.K. B.S.	Russia GOST	USA AISI - SAE	Japan JIS
	54SiCr6	54SiCr6			685 A 57	60S2ChA	9254	SUP 12

Chemical Analysis	C% max	Si% max	Mn% max	P% max	S% max	Cr%
	0.51 - 0.59	1.20 - 1.60	0.50 - 0.80	0.025	0.025	0.50 - 0.80

Hot Work and Heat Treatment Temperatures

Temperature °C

Hot - Forming	Supply State +U	Soft Annealing +A	End Quench Hardeneability test	Normalising	Quenching	Hot Moulding	Tempering	Isothermal Annealing
1150 - 850		670 - 720 air	860	860 - 890 air	840 - 880	930 - 840	380 - 500	810 - 830 furnace cooling to 720, then air (HB max 230)
		(HB max 248)	water		oil or polymer		air	

Mechanical Properties at Room Temperature

Hot Rolled Mechanical Properties after Quenched at 860°C in oil & Tempering at 450°C air EN 10089 - 2002

Size d/t mm		Testing at Room Temperature (Longitudinal)								
From	To	R	Rp 0.2	A%	C%	KU	HB	HRC		
		N/mm2	N/mm2	min.	min.	J min.	for info.			
	10	1450 - 1750	1300	6	25	8	415 - 480	44.5 - 50		

Table of tempering values obtained at room temperature on round of Ø 10mm after quenching at 850° C in oil

HB		543	455	409	375	344
HRC		54	48	44	41	37
R	N/mm2	2010	1660	1432	1280	1140
Rp 0.2	N/mm2	1700	1440	1250	1100	1000
A	%	5	6	6.5	6.5	7
Kv	J	8	10	12	14	16
Tempering at ° C		400	450	500	550	600

EN 10089 : 2002 Jominy test HRC grain size 5 min. distance in mm from quenched end

Symbol H	1.5	3	5	7	9	11	13	15	20	25	30
min	57	56	55	50	44	40	37	35	32	30	28
max	67	66	66	65	65	64	64	63	59	55	49
min	60	59	59	55	51	48	46	44	41	38	35
max	67	66	66	65	65	64	64	63	59	55	49