

Quality	60SiCr8
According to standards	UNI 3545: 1980
Number	1.7108 ~

Chemical composition

C%	Si%	Mn%	P% max	S% max	Cr%	Deviations allowed for analysis product
0,57-0,64 ± 0.03	1,70-2,20 ± 0.05	0,70-1,00 ± 0.04	0,035 + 0.005	0,035 + 0.005	0,25-0,40 ± 0.04	

Other elements not mentioned above should not be added to the steel, except for those necessary to casting

Temperature °C

Hot-forming	Normalizing	Quenching on spring	Tempering	Hot moulding of springs			
1050-850	870 air	830-860 oil or polymer	430-480 air	920-830			
Soft annealing	Isothermal annealing	Natural state	End quench hardenability test	Pre-heating welding	Stress-relieving after welding		
680 air (HB max 255)	820 furnace cooling to 720, then air (HB max 250)	(HB max 321)	850 water	not allowed			
				Ac1	Ac3	Ms	Mf
				770	800	270	50

Mechanical and physical properties

Hot-rolled properties obtained on test blanks of Ø 10 mm after quenching at 850 °C in oil, tempering at 480 °C in air UNI 3545: 1980. Use only as reference						Values for springs according to Stahlschlüssel 2007 standard			
size mm	Testing at room temperature (longitudinal)								
	R	Rp 0.2	A%	HB	HRC	R	Rp 0.2	A%	DVM
	N/mm ²	N/mm ² min.	min.		for inf.	N/mm ²	N/mm ² min	min	J min
10	1450-1700	1250	5	415-467	44.5 - 49	1350-1600	1150	6	21

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

HB	468	461	442	409	353
HRC	49	48.5	47	44	38
R N/mm ²	1700	1660	1570	1420	1160
Rp 0.2 N/mm ²	1390	1340	1240	1180	1000
A %	4.5	5.0	6.0	7.0	9.0
Kv J	10	10	10	12	12
Tempering at °C	400	450	500	550	600

UNI 3545: 1980 Jominy test HRC grain size 5 min.

mm distance from quenched extremity	1.5	3	5	7	9	11	13	15	20	25	30	35	40	45	50
min	58	58	57	51	45	40	38	37	33	30	29	28	27	26	25
max	66	66	65	64	63	61	59	57	50	45	43	41	40	39	39

Maxi thickness and diameter recommended for the spring to obtain, after quenching, internal hardness of 52 HRC	Flat products thickness mm	Round products Ø mm	Mod. of elasticity +20 °C GPa	
	16	24	E long.	G tang.
			206	79

EUROPE EN	ITALY UNI	CHINA GB	GERMANY DIN	FRANCE AFNOR	U.K. B.S.	RUSSIA GOST	USA AISI/SAE
60SiCr8	60SiCr8	60Si2CrA	60SiCr7	61SC7		60S2HA	9261 - 9262