

Quality According to standards Number C45E EN 10083-2: 2006 1.1191



Equivalent	Italy UNI	China GB	Germany DIN	UK	USA AISI/SAE
	C45	45	Ck45	080M46	1045

**Chemical composition**

C% max	Si%	Mn%	P% max	S% max	Cr% max	Ni% max	Mo% max
0.42-0.50	0.40	0.50-0.80	0.030	0.035	0.40	0.40	0.10

**Temperature ▲ °C**

Hot-forming	Tempering	Quenching	Stress Relieving	Soft Annealing
1100-850	540-680 air	840-860 oil or polymer or water	50°C under the temperature of tempering	690 cooling 10 °C/h to 600, then air HB max 207

**Mechanical properties**

Size C45E / C45R Hot Rolled (+QT) EN 10083-2: 2006

Diameter	Thickness	Testing at room temperature (longitudinal)					
mm	mm	R (N/mm <sup>2</sup> min)	Rp 0.2 N/mm <sup>2</sup>	A% min	C%	Kv	HB
16/8		620	340	14			190
16/8	40/20	580	305	16			172
40/20	100/60	560	275	16			162

**Table of tempering values obtained at room temperature on rounds after quenching at 850°C in water**

HB	615	597	510	401	311	242
HRC	58	57	52	43	33	23
R N/mm <sup>2</sup>	2330	2240	1880	1390	1030	810
Rp 0.2 N/mm <sup>2</sup>						
A%						
Kv J						
Tempering at °C	100	200	300	400	500	600