



Quality C45 (UNI-7845)

PROPERTIES AND EMPLOYEMENTS

It is one of the most commonly employed quenched and tempered steel with carbon in europe.

It is suitable for surface hardening and it guarantees an elevated superficial hardness.

CORRESPONDENCE TO INTERNATIONAL DESIGNATIONS

Quality	Europe	Germany		France	Spain	G.B.	USA
	EN	DIN	W.n.	AFNOR	UNE	B.S.	AISI/SAE
C45	2C45	CK45	1,1191	XC48H1	F1140	080M46	1045

CHEMICAL COMPOSITION % (UNI-7845)



Steel designation		Chemical composition								
Symbolic	Numeric	C	Si max	Mn	P max	S max	Cr max	Mo max	Ni max	Cr + Mo + Ni max ^d
C45	1,0503	0,42 ÷ 0,50	0,40	0,50 ÷ 0,80	0,045	0,045	0,40	0,10	0,40	0,63

Concentration limits of the elements that are not indicated in the table can be deduced in the en 10020 regulation.

MECHANICAL CHARACTERISTICS (UNI-7845)

Steel		Mechanical characteristics for the reduced section																	
		d ≤ 16mm					16mm < d ≤ 40mm					40mm < d ≤ 100mm							
		R _e min	R _m	A min	Z min	KV ^b min	R _e min	R _m	A min	Z min	KV ^b min	R _e min	R _m	A min	Z min	KV ^b min			
Symbolic	Numeric	MPa			%	%	J	MPa			%	%	J	MPa			%	%	J
C45	1,0503	490	700 to 850	14	35	-	430	650 to 800	16	40	-	370	630 to 780	17	45	-			

USUALLY AVAILABLE EX STOCK

M.T. Coloration	Quality	Heat treatment	Surface
	C45	Natural	rolled reeled forged turned peeled h11 / drawn ground
	C45	Quenched and tempered	rolled reeled