

Quality	X12CrS13
According to Standard	EN 10088-3:2005 (E)
Number	1.4005



Comparable Standards

EN	W.N.	AISI	SS (Sweden)
X12CrS13	1.4005	416	2380

Chemical Analysis

C %	Si % max	Mn %	P% max	S%	Cr %
0,06 to 0,15	1,00	≤ 1,50	0,040	0,15 to 0,35	12,0 to 14,0
Cu	Mo %	Nb	Ni %	Others	
—	≤ 0,60	—	—	—	

Hot Work and Heat Treatment Temperatures

Heat Treatment Symbol	Hot Forming		Annealing		Quenching		Tempering
	Temperature °C	Type of cooling	Temperature °C	Type of cooling	Temperature °C	Type of cooling	Temperature °C
+A	1100 to 800	air	745 to 825	air	—	—	—
+QT 650	1100 to 800	air	—	—	950 to 1000	oil, air	680 to 780

Mechanical Properties at Room Temperature

Heat Treatment Condition	Ø mm.	Hardness HB ^c max	Rp0,2 ^d min. N/mm2	Rm ^d N/mm2	A ^d min. %	KV min. J
+A	—	220	—	max 730	—	—
+QT650	≤ 160	—	450	650 to 850	12	—