

Quality	Cf 53
According to standards	DIN 17212: 1972
Number	1.1213

Chemical composition					
C%	Si%	Mn%	P% max	S% max	Deviations allowed for analysis product
0,50-0,57	0,15-0,35	0,40-0,70	0,025	0,035	
± 0.03	± 0.03	± 0.04	+ 0.005	+ 0.005	

Temperature °C					
Hot-forming	Normalizing	Quenching	Quenching	Tempering	Stress-relieving
1050-850	860 air	830 water	860 oil or polymer	550-660 air	180
Soft annealing	Isothermal annealing	Natural state	End quench hardenability test	Pre-heating welding	Stress-relieving after welding
700 air (HB max 223)	820 furnace cooling to 660, then air (HB 180-230)	(HB max 260)		not recommended	
				Ac1	Ac3
				730	765
				Ms	Mf
				320	100

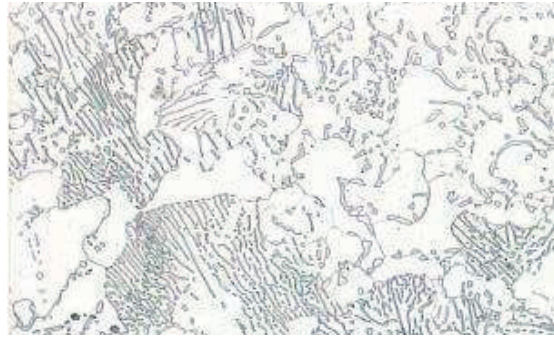
Mechanical properties						
Hot-rolled mechanical properties in normalized condition DIN 17212: 1972						
test blanks diameter (mm)		Testing at room temperature (longitudinal)				
from	to	R N/mm ²	Rp 0.2 N/mm ² min.	A% min.	C% min.	K J min.
16	100	610-760	340	16		HB <i>for information</i> 183-226

Hot-rolled mechanical properties in quenched and tempered condition DIN 17212: 1972						
test blanks diameter (mm)		Testing at room temperature (longitudinal)				
from	to	R N/mm ²	Rp 0.2 N/mm ² min	A% min.	C% min.	K J min
	16	740-880	510	12	25	HB <i>for information</i> 224-263
16	40	690-830	430	14	35	210-249
40	100	640-780	400	15	40	198-232

Cold-drawn +QT+C 070M55 BS 970 pt.3: 1991. Use only as reference						
diameter mm		Testing at room temperature (longitudinal)				
from	to	R N/mm ²	Rp 0.2 N/mm ² min	A% min	C% min.	K J min
13	29	700-850	475	10		HB <i>for information</i> 201-255
29	100	700-850	435	10		201-255

Jominy test HRC														Min. surface hardness after hardening and stress-relieving			
mm distance from quenched extremity																	
	1.5	3	5	7	9	11	13	15	20	25	30	35	40	45	50		
min	No indications from reference standards; use C 50E values as reference														HRC	57	
max																	

EUROPE EN	ITALY UNI	CHINA GB	GERMANY DIN	FRANCE AFNOR	U.K. B.S.	RUSSIA GOST	USA AISI/SAE
C53	C53		Cf53	XC48 TS	070M55		1050



Hot-rolled steel
Spheroidizing annealing