

Quality	X82WMoCrV6-5-4	Bearing Steel	<i>Technical card</i> Lucefin Group rev. 2018
According to standards	EN ISO 683-17: 2014		
Number	1.3553		

Chemical composition

C%	Si%	Mn%	P%	S%	Cr%	Mo%	V%	W%	Cu%
0,78-0,86	max 0,40	max 0,40	max 0,025	max 0,015	3,90-4,30	4,70-5,20	1,70-2,00	6,00-6,70	max 0,30
± 0.03	±0.03	±0.04	+ 0.005	+ 0.005	± 0.10	± 0.10	± 0.10	± 0.10	+0.03

Product deviations are allowed

Temperature °C

Hot-forming	Quenching +Q	Tempering +T	Stress relief annealing +SR) annealing must be carried out after machining and before final heat treatment			
1100-900	1190-1230 oil or polymer salt bath 500-550	Immediately after quenching 540-570 air at least 2 cycles	600-650) furnace cooling				
Soft annealing +A	Spheroidized annealing +AC	Pre-heating welding		Stress-relieving after welding			
780-820 (HB max 280)	770-840 furnace cooling 15 °C/h to 600, then air (HB max 248)			not recommended			
		Ac1	Ac3	Ms	Mf		
		820	870	150	-70 subcooling		

Mechanical properties

Table of tempering values obtained at room temperature after quenching at 1210 °C in oil

HB	688	679	688	697	739	758	758	722	615	482	
HRC	62	61.5	62	62.5	65	66	66	64	58	50	
R N/mm²	-	-	-	-	-	-	-	-	2330	1760	
Tempering at °C	300	350	400	450	490	530	560	600	650	700	
Thermal Expansion	10 ⁻⁶ ·K ⁻¹			►	11.5	11.7	12.2	12.4	12.7	13.0	12.9
Modulus of Elasticity long.	GPa			217							
Modulus of Elasticity tang.	GPa			83							
Specific Heat Capacity	J/(Kg·K)			460							
Thermal Conductivity	W/(m·K)			19							
Density	Kg/dm ³			8.10							
Specific Electric Resist.	Ohm·mm ² /m			0.54							
Electrical Conductivity	Siemens·m/mm ²			1.85							
°C				20	100	200	300	400	500	600	700

The symbol ► indicates temperature between 20 °C and 100 °C, 20 °C and 200 °C ...

EUROPE	ITALY	CHINA	GERMANY	FRANCE	U.K.	RUSSIA	USA
EN	UNI	GB	DIN	AFNOR	B.S.	GOST	AISI/SAE
X80WMoCrV654	X82WMoV65		X82WMoCrV6-5-4	Z85WCDV6			A597 CM2