



Technical Data Sheet	Grade	Code (SEL)	Cold work tool steel
	1.2510	100MnCrW4	

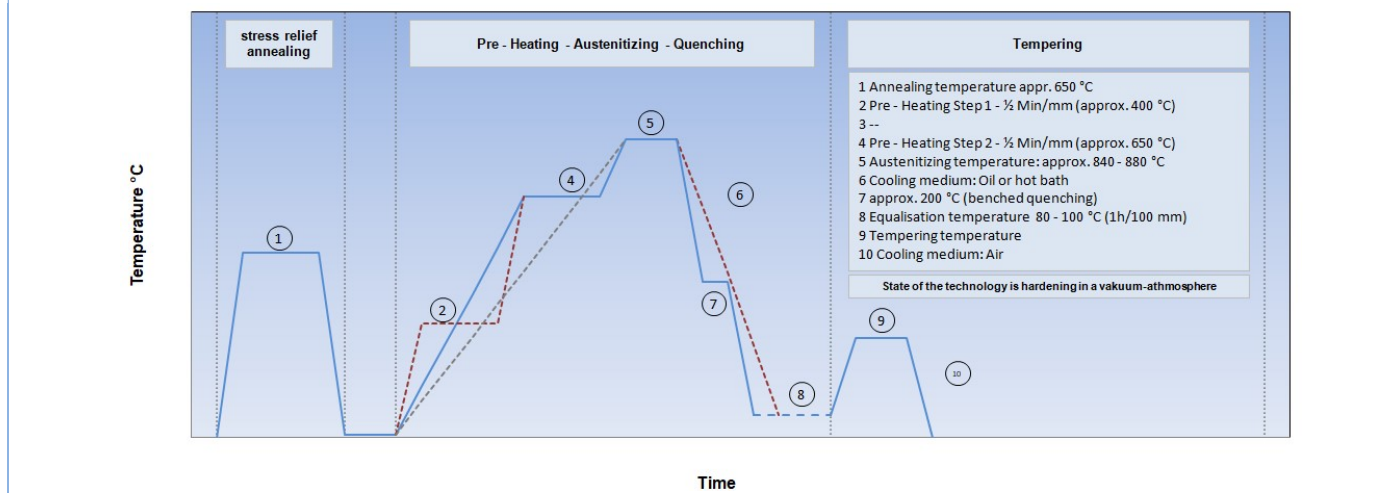
Standards	Steel properties
EN ISO 4957 - AFNOR 90MnCrW5 BS BO 0;BO 1 UNE F.522.A (F.5220) UNI - AISI O 1 GOST 95XГБФ	Medium alloyed, oil-hardenable cold working tool steel with good toughness, cutting edge retention, high hardenability and dimensional stability during heat treatment.
	Suitable for: Blanking and stamping dies for cutting sheets up to 6 mm thickness, threading tools, drills, broaches, gauges, measuring tools, plastic moulds, shear blades, guide rails.

C	Si	Mn	Cr	Mo	Ni	V	W	Co	Sonst.
0,95	0,25	1,10	0,60	-	-	0,10	0,55	-	-

Melting	EAF + VOD	Remarks -
Density (g/cm³)	7,85	
Supply condition	soft annealed	
Hardness (HB)	max. 230	
Tensile strength (N/mm²)	-	
Work hardness (HRC)	-	
Structure	-	
Cleanness (DIN 50602)	-	

Physical properties		20 °C	100 °C	200 °C	300 °C	350 °C	400 °C	500 °C	600 °C	700 °C
Thermal expansion coefficient	10 ⁻⁶ * K (20 °C bis ...)	-	12,0	12,6	13,1	-	13,5	-	-	-
Thermal conductivity (W / m * K)	annealed	33,5				32,0				30,9
	quenched + tempered	-				-				-

Thermal Cycle Diagram (Heat treatment)



Hinweis: Die in diesem Datenblatt enthaltenen Angaben dienen der Beschreibung, eine Haftung ist ausgeschlossen.



Heat treatment	Temperature (°C)	Cooling	Remarks heat treatment
Soft annealing	740 - 770	Furnace	Controlled slow cooling in furnace
Stress-relief annealing	ca. 650	Furnace	Slow cooling in furnace. After extensive machining process or complex shapes
Hardening	780 - 820		After through-heating hold for 15-30 minutes
Pre – heating Step 1	appr. 400		
Pre – heating Step 2	appr. 650		
Pre – heating Step 3	-		
Quenching	appr. 200	hot bath	In case of oil hardening interrupt at appr. 250 °C.
	appr. 80	Oil	Hot bath hardening up to thickness 20 mm possible.
	-	-	
	-	-	

Tempering Chart		Tempering – Hardness after tempering									
	Temperature °C	100	200	300	400	500	550	600	650	700	
	HRC	64	62	57	52	43	38	36	34	32	
Remarks for tempering											
Slow heating to tempering temperature immediately after hardening. Time in furnace 1 hour for each 20 mm of workpiece thickness but at least 2 hours.											

