

Material specification sheet

Saarstahl - 50CrMo4

Material No.:	Former brand name:	International steel grades:
1.7228	Mo 50	BS: 708A47 AFNOR: 50CrMo4 SAE: 4150

Material group: Steel for quenching and tempering according to DIN EN 10083

Chemical composition: (Typical analysis in %)	C	Si	Mn	Cr	Mo	other
	0,50	0,25	0,70	1,10	0,20	(Pb)

Application: Alloyed heat treatable steel with a typical tensile strength of 900 - 1200 N/mm². For automotive and aircraft components with high toughness as tyres, rings, axles, bushes, shafts, steering components.

Hot forming and heat treatment:	Forging or hot rolling:	1050 - 850°C
	Normalising:	850 - 880°C/air
	Soft annealing:	680 - 720°C/furnace
	Hardening:	820 - 860°C/oil
	Tempering:	540 - 680°C/air

Mechanical Properties: Treated for cold shearability +S: See condition A
Soft annealed +A: max. 248 HB

Quenched and tempered, +QT:

	< 16	>16 – 40	>40 – 100	>100 – 160	>160 – 250
Diameter d [mm]	< 16	>16 – 40	>40 – 100	>100 – 160	>160 – 250
Thickness t [mm]	< 8	8<t<20	20<t<60	60<t<100	100<t<160
0,2% proof stress R_{po,2} [N/mm²]	min. 900	min. 780	min. 700	min. 650	min. 550
Tensile strength R_m [N/mm²]	1100 - 1300	1000 - 1200	900 - 1100	850 - 1000	800 - 950
Fracture elongation A₅ [%]	min. 9	min. 10	min. 12	min. 13	min. 13
Reduction of area Z [%]	min. 40	min. 45	min. 50	min. 50	min. 50
Notch impact energy ISO-V [J]	min. 30	min. 30	min. 30	min. 30	min. 30