

## Material specification sheet

### Saarstahl - 34CrMo4 - 34CrMoS4

Material No.:	Former brand name:	International steel grades:
1.7220	Mo 35	<b>BS:</b> 708A37
1.7226		<b>AFNOR:</b> 34CrMo4, 35CD4
		<b>SAE:</b> 4135, 4137

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

Chemical composition: (Typical analysis in %)	Steel	C	Si	Mn	Cr	Mo	S	other
	34CrMo4	0,34	0,25	0,70	1,10	0,25	<0,035	(Pb)
	34CrMoS4	0,34	0,25	0,70	1,10	0,25	0,020 0,035	(Pb)

**Application:** Alloyed heat treatable steel with a typical tensile strength of 800 - 1100 N/mm<sup>2</sup>. For automotive and aircraft components with high toughness as crankshafts, axles, axle journals, tyres.

<b>Hot forming and heat treatment:</b>	Forging or hot rolling:	1100 - 850°C
	Normalising:	850 - 880°C/air
	Soft annealing:	680 - 720°C/furnace
	Hardening:	830 - 870°C/oil, water
	Tempering:	540 - 680°C

<b>Mechanical Properties:</b>	Treated for cold shearability +S:	max. 255 HB
	Soft annealed +A:	max. 223 HB

Quenched and tempered, +QT:

	< 16	>16 – 40	>40 – 100	>100 – 160	>160 – 250
<b>Diameter d [mm]</b>	< 16	>16 – 40	>40 – 100	>100 – 160	>160 – 250
<b>Thickness t [mm]</b>	< 8	8<t<20	20<t<60	60<t<100	100<t<160
<b>0,2% proof stress R<sub>p0,2</sub> [N/mm<sup>2</sup>]</b>	min. 800	min. 650	min. 550	min. 500	min. 450
<b>Tensile strength R<sub>m</sub> [N/mm<sup>2</sup>]</b>	1000 - 1200	900 - 1100	800 - 950	750 - 900	700 - 850
<b>Fracture elongation A<sub>5</sub> [%]</b>	min. 11	min. 12	min. 14	min. 15	min. 15
<b>Reduction of area Z [%]</b>	min. 45	min. 50	min. 55	min. 55	min. 60
<b>Notch impact energy ISO-V [J]</b>	min. 35	min. 40	min. 45	min. 45	min. 45