Material specification sheet

Saarstahl - 27MnCrB5-2

Material No.:	Former brand name:	International steel grades:
1.7182		**BS:** **AFNOR:** **SAE:**

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

Chemical composition:
(Typical analysis in %)

C	Si	Mn	P	S	Cr	B
0,24 0,30	<0,40	1,10 1,40	<0,035	<0,040	0,30 0,60	0,0008 0,0050

Application: Boron alloyed heat treatable steel for wear resisting parts as dredger buckets, plough shares, chain wheels, mechanical engineering components, axles.

Hot forming and heat treatment:

Forging or hot rolling:	1200 - 850°C
Normalising:	860 - 890°C
Soft annealing:	650 - 700°C
Hardening:	840 - 880°C/water, oil
Quenching:	water max. 52 mm Ø, oil max. 43 mm Ø

Mechanical Properties: Core hardness for an amount of 80 % martensite: 38 HRC at 900°C

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 $R_{p0,2}$ [N/mm²]	min. 700	min. 650	min. 600	min. 550	-
Tensile strength R_m [N/mm²]	900 - 1100	850 - 1000	800 - 950	750 - 900	-
Fracture elongation A_5 [%]	min. 12	min. 13	min. 14	min. 15	-
Reduction of area Z [%]	min. 40	min. 45	min. 50	min. 50	-
Notch impact energy ISO-V [J]	min. 41	min. 48	min. 48	min. 48	-