

Material specification sheet

Saarstahl - 16MnCrB5

Material No.:	Former brand name:	International steel grades:
1.7160	EC 80 B	BS: AFNOR: SAE:

Material group: Case hardening steels according to DIN EN 10084

Chemical composition: (Typical analysis in %)	C	Si	Mn	Cr	Sonst.
	0,16	0,25	1,15	0,95	+B (+Pb)

Application: Boron alloyed case hardening steel for parts with a required core tensile strength of 800 - 1000 N/mm² and good wearing resistance as piston bolts, camshafts, levers and other vehicle and mechanical engineering components. Boron increases the hardenability and the toughness of case hardened parts.

Hot forming and heat treatment:	Forging or hot rolling:	1100 - 850°C
	Normalising:	840 - 870°C/air
	Soft annealing:	650 - 700°C/furnace
	Carburising:	880 - 980°C
	Core hardening:	860 - 900°C/oil
	Intermediate annealing:	650 - 700°C
	Case hardening:	780 - 820°C/oil
	Tempering:	150 - 200°C

Mechanical Properties:	Treated for cold shearability, +S:	Shearable in as rolled condition
	Soft annealed, +A:	max. 207 HB
	Treated for strength, +TH:	156 - 207 HB
	Treated for ferrite and pearlite structure and hardness range, +FP:	140 - 187 HB

after hardening and tempering at 200°C:

Diameter d [mm]	d ≤ 16	16 < d ≤ 40	40 < d ≤ 100
Tensile strength R _m [N/mm ²]	min. 1000	min. 900	min. 700