Material specification sheet

Saarstahl - C15R (Cm15)

Material No.:	Former brand name:	International steel grades:	
1.1140	**R1**	**BS:**	040A15, 080M15
		AFNOR:	C15E, XC12, XC15, XC18
		SAE:	1015

Material group: Case hardening steels DIN EN 10084

Chemical composition: (Typical analysis in %)

C	Si	Mn	S	other
0,15	0,25	0,40	0,020 0,035	(Pb)

Application: Plain carbon case hardening steel for parts with a required core tensile strength of 600 - 800 N/mm² and good wearing resistance as piston bolts, camshafts, levers and other vehicle and mechanical engineering components. Suitable for direct hardening.

Hot forming and heat treatment:

Forging or hot rolling:	1150 - 900°C
Normalising:	890 - 920°C/air
Soft annealing:	650 - 700°C/furnace
Carburising:	880 - 980°C
Core hardening:	880 - 920°C/water
Intermediate annealing:	650 - 700°C
Case hardening:	780 - 820°C/water
Tempering:	150 - 200°C

Mechanical Properties:

Treated for cold shearability, +S:	-
Soft annealed, +A:	max. 143 HB
Treated for strength, +TH:	-
Treated for ferrite and pearlite structure and hardness range, +FP:	-

after hardening and tempering at 200°C:

Diameter d [mm]	d <= 16	16 <d <= 40	40 <d <= 100
Tensile strength R_m [N/mm²]	min. 800	min. 600	-