

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/mm ²]	min. 800	min. 600	-