Material specification sheet

Saarstahl - 15Cr3

Material No.:	Former brand name:	International steel grades:
1.7015	**EC 60**	**BS:** 523M15 **AFNOR:** 15C2 **SAE:** 5015

Material group: Alloyed case hardening steel

Chemical composition: (Typical analysis in %)	**C**	**Si**	**Mn**	**Cr**	**other**
	0,15	0,25	0,50	0,60	(Pb)

Application: Alloyed case hardening steel for parts with a required core tensile strength of 700 - 900 N/mm² and good wear resistance as bushes, piston pins, spindles, camshafts, gears, shafts, pinions steering and gear components. Suitable for direct hardening.

Hot forming and heat treatment:

Forging or hot rolling:	1100 - 850℃
Normalising:	850 - 880℃/air
Soft annealing:	650 - 700℃/furnace
Carburising:	870 - 930℃
Core hardening:	870 - 900℃/water
Intermediate annealing:	650 - 700℃
Case hardening:	770 - 800℃/water
Tempering:	150 - 180℃

Mechanical Properties:

Soft annealed, +A:	max. 174 HB
Treated for strength, +TH:	126 - 174 HB
Treated for ferrite and pearlite structure and hardness range, +FP:	118 - 160 HB
Case hardness:	min. 59 HRC

blank hardened:

Diameter d [mm]	11	30
0,2% proof stress $R_{p0,2}$ [N/mm²]	min. 550	min. 440
Tensile strength R_m [N/mm²]	1000 - 1300	700 - 900
Fracture elongation A_5 [%]	min. 10	min. 11
Reduction of area Z [%]	min. 35	min. 40
Notch impact energy ISO-V [J]	min. 30	min. 40