

## Material specification sheet

### Saarstahl - 15Cr3

Material No.:	Former brand name:	International steel grades:
<b>1.7015</b>	<b>EC 60</b>	<b>BS:</b> 523M15 <b>AFNOR:</b> 15C2 <b>SAE:</b> 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/mm<sup>2</sup> and good wear resistance as bushes, piston pins, spindles, camshafts, gears, shafts, pinions steering and gear components. Suitable for direct hardening.

<b>Hot forming and heat treatment:</b>	Forging or hot rolling:	1100 - 850°C
	Normalising:	850 - 880°C/air
	Soft annealing:	650 - 700°C/furnace
	Carburising:	870 - 930°C
	Core hardening:	870 - 900°C/water
	Intermediate annealing:	650 - 700°C
	Case hardening:	770 - 800°C/water
	Tempering:	150 - 180°C

<b>Mechanical Properties:</b>	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
<b>0,2% proof stress R<sub>p0,2</sub> [N/mm<sup>2</sup>]</b>	min. 550	min. 440
<b>Tensile strength R<sub>m</sub> [N/mm<sup>2</sup>]</b>	1000 - 1300	700 - 900
<b>Fracture elongation A<sub>5</sub> [%]</b>	min. 10	min. 11
<b>Reduction of area Z [%]</b>	min. 35	min. 40
<b>Notch impact energy ISO-V [J]</b>	min. 30	min. 40