

## Werkstoff-Datenblatt

### Saarstahl - 38Cr4

Material No.:

1.7043

Former brand name:

International steel grades:

BS:  
AFNOR:  
SAE:

**Material group:**

Flame and induction hardening steel according to DIN 17212

Chemical composition: (Typical analysis in %)	C	Si	Mn	P	S	Cr
	0,34	0,15	0,60	<0,025	<0,035	0,90
	0,40	0,40	0,90			1,20

**Application:**

Alloyed heat treatable steel for crankshafts for vehicle construction and diesel engines and for applications of medium skin hardness.

**Hot forming and heat treatment:**

Hot forming: 1050 - 850°C  
 Normalising: 845 - 885°C  
 Soft annealing: 680 - 720°C  
 Hardening: 825 - 855°C/water  
 Hardening: 835 - 865°C/oil  
 Tempering: 540 - 680°C  
 Hardening temperature for Jominy test: 850°C

**Mechanical Properties:**

Soft annealed +A: max. 217 HB  
 Skin hardness after quenching and tempering: min. 53 HRC

Hardened and tempered

Diameter d [mm]	<=16	>16 - 40	>40 - 100	>100 - 160
0,2% proof stress R <sub>p0,2</sub> [N/mm <sup>2</sup> ]	min. 740	min. 630	min. 510	min. 740
Tensile strength R <sub>m</sub> [N/mm <sup>2</sup> ]	930 - 1130	830 - 980	740 - 880	930 - 1130
Fracture elongation A <sub>5</sub> [%]	min. 11	min. 13	min. 14	min. 11
Reduction of area Z [%]	min. 40	min. 45	min. 50	min. 40
Notch impact energy ISO-V [J]	min. 35	min. 42	min. 42	min. 35