

Material specification sheet

Saarstahl - 55Cr3

Material No.:	Former brand name:	International steel grades:
1.7176	F 1 K	BS: 525A58, 525H60 AFNOR: 55C3 SAE: 5155, 5160

Material group: Hot rolled steel for springs suitable for quenching and tempering according to DIN 17221

Chemical composition: (Typical analysis in %)	C	Si	Mn	Cr
	0,57	0,30	0,85	0,80

Application: Hot rolled steel for springs suitable for quenching and tempering, as leaf springs, helical springs, stabiliser at road vehicles.

Hot forming and heat treatment:	Hot forming:	1050 - 850°C
	Hot deformation:	920 - 830°C
	Normalising:	850 - 880°C/air
	Soft annealing:	640 - 680°C/furnace
	Hardening:	830 - 860°C/oil
	Tempering:	430 - 500°C/air

Mechanical Properties:	Treated for cold shearability +S:	max. 280 HB
	Soft annealed +A:	max. 248 HB
	Spheroidized annealed - GKZ (+AC)	max. 200 HB
	Core hardness after quenching:	min. 54 HRC

Hardened and tempered, H+A, 16 mm flat steel bars, 25 mm bars

0,2% proof stress R_{po,2} [N/mm²]	min. 1200
Tensile strength R_m [N/mm²]	1400 - 1650
Fracture elongation A₅ [%]	min. 6
Reduction of area Z [%]	min. 35
Notch impact energy ISO-V [J]	min. 9