Material data sheet
Steel grade

Last revised: Thu, 23 Feb 2023 16:20:03 GMT

55Cr3 All

General Information

55Cr3 according to Ovako standard is a chromium spring steel with a dash of niobium to be used in quenched and tempered condition; suitable application is for example stabilizer bars.

Similar designations

SB 9257 - 54Cr3, 1.7176, 527A60, GOST 50ChGA, AISI/SAE/ASTM 5155, 5160

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ti %	Al %	Nb %
SB9257	CC	CEV 0.92_{max}	Min	0.53	0.15	0.75	-	-	0.70	0.010	0.015	0.025
		Pcm 0.67_{max}	Max	0.56	0.30	0.85	0.015	0.015	0.80	0.030	0.035	0.035
55Cr3 EN10089:2002	CC	CEV 0.88_{max}	Min	0.52	-	0.70	-	-	0.70	-	-	-
		Pcm 0.66_{max}	Max	0.59	0.40	1.00	0.025	0.025	1.00	-	-	-

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A_5 [%]	Hardness
SB9257	+AR	Round bar	< 30	640*	985 typical	17	< 330 HB
	+QT	Round bar	< 30	1250**	1400-1700	8	-

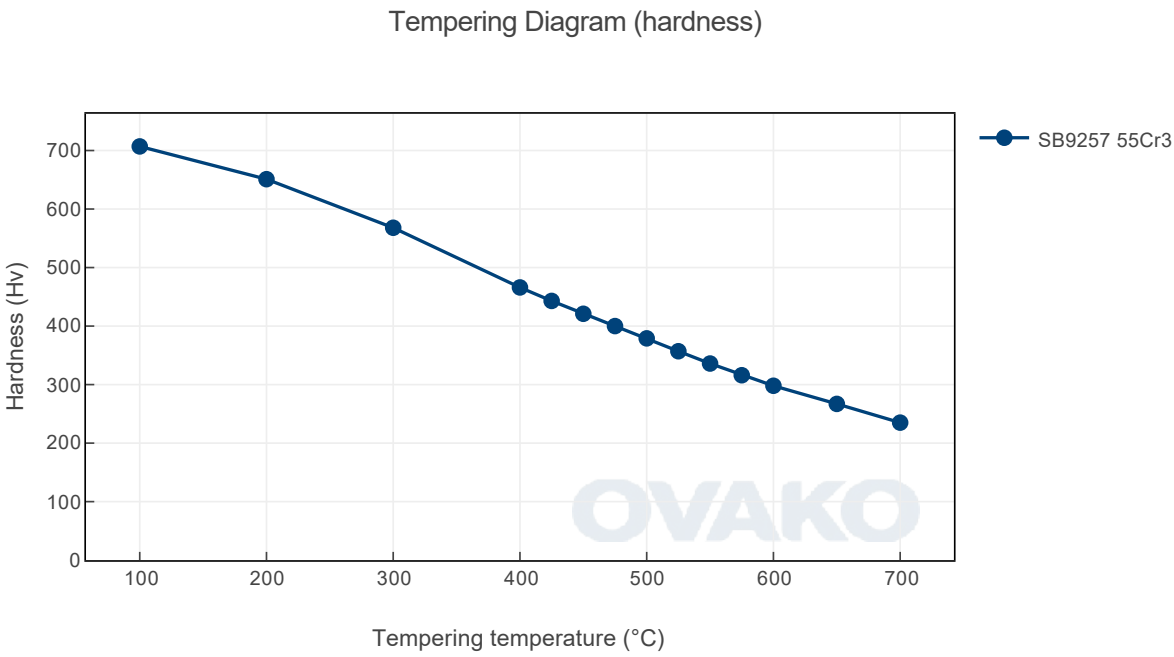
*$Rp_{0.2}$ * R_{eh}, ** R_{el}*

Transformation temperatures

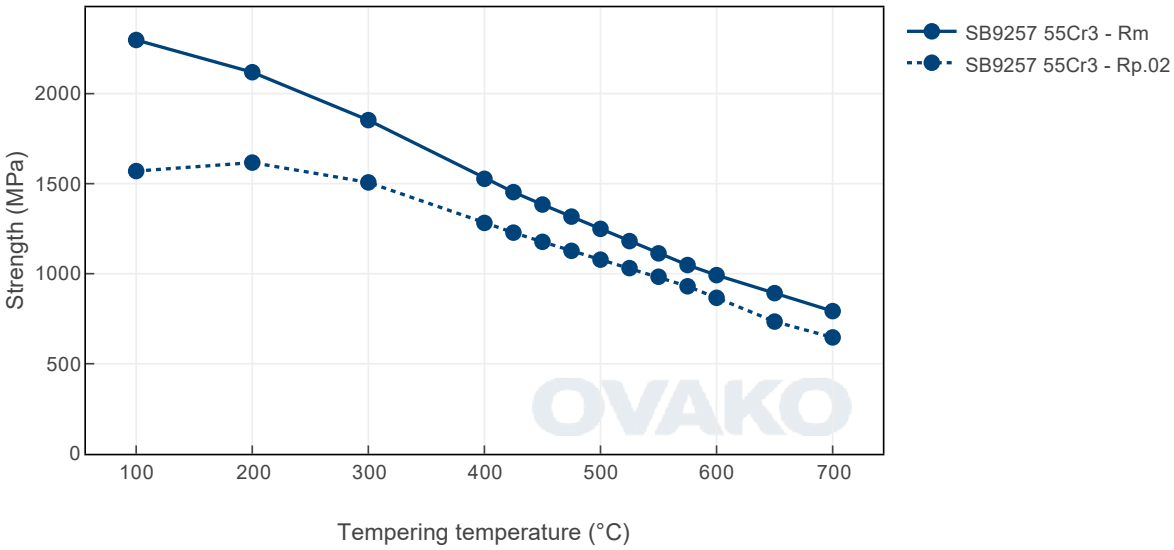
	Temperature °C
MS	263
AC1	734
AC3	763

Heat Treatment Guide generated Graphs

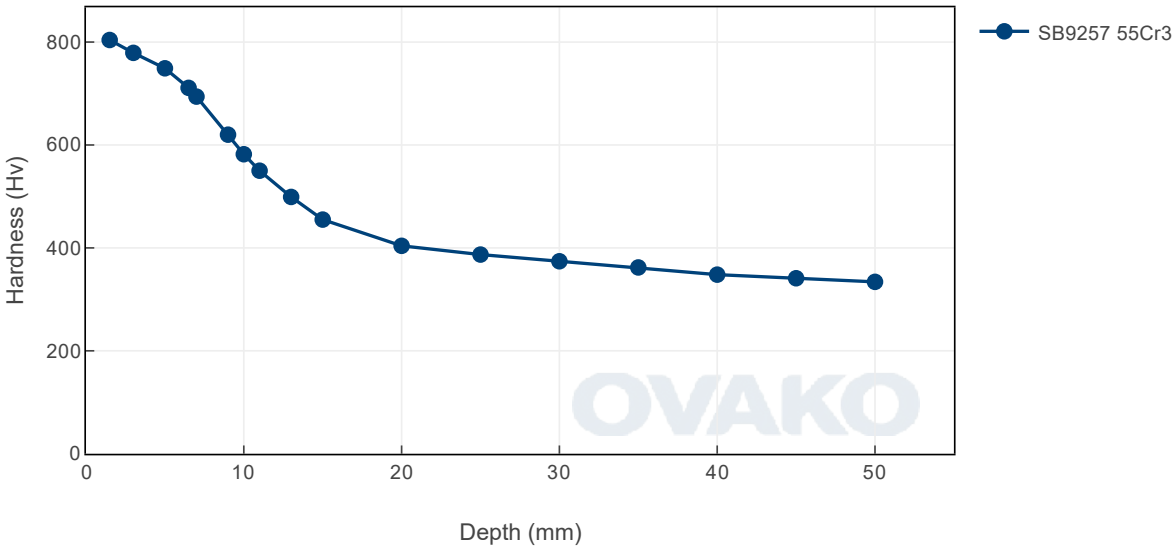
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



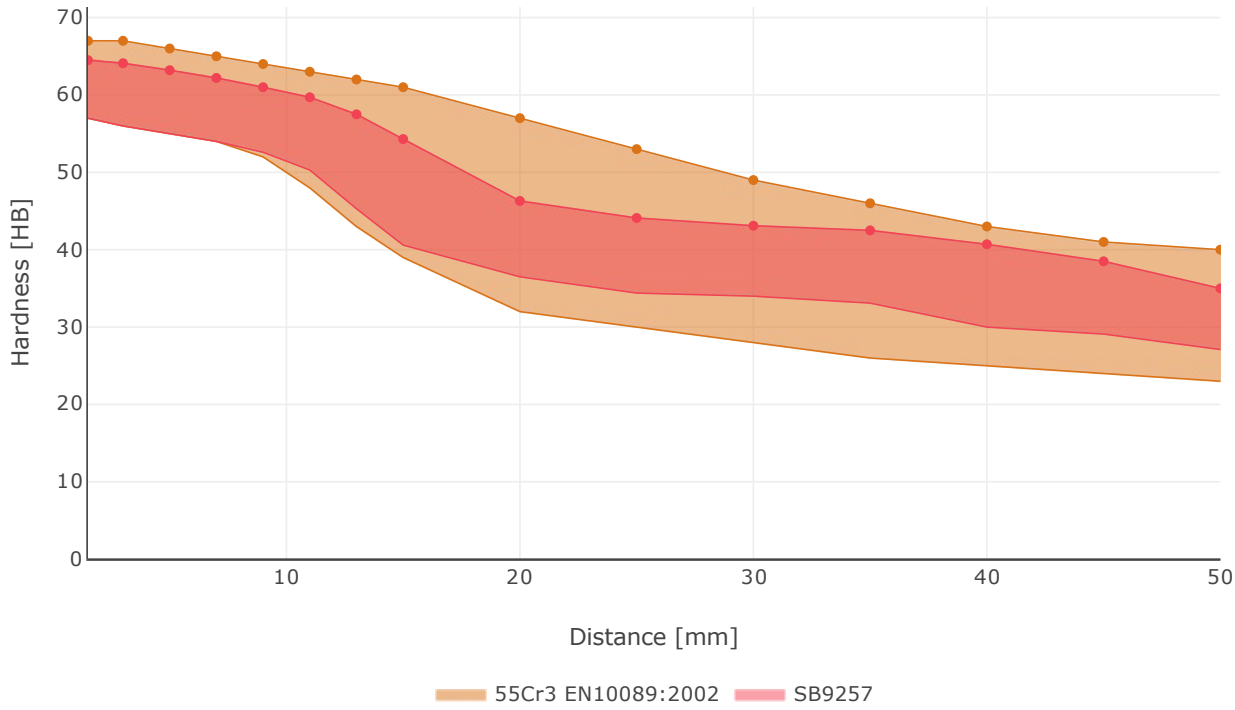
Tempering Diagram (strength)



Jominy


Hardness (Hv)
800
600
400
200
0
0
10
20
30
40
50
Depth (mm)
SB9257 55Cr3
OVAKO

Hardenability



SUSTAINABILITY-ENVIRONMENTAL IMPACT DATA

At Ovako sustainability and reduction of our environmental impact is a major focus in everything we do.
Further information is found here.

In many international comparisons the crude steel Scope 1-2 emission is a key parameter, ie. the CO_2 emission from the steel works itself.
As of 1 January 2022 we carbon offset all our scope 1 and 2 volume shown below.

Steel works	Hofors	Smedjebacken	Imatra
CO2e/kg	120	62	76

To get the full picture of our products environmental impact we have to look at all of our CO_2 emission sources.
Not only the steel work Scope 1-2 itself, but all operations downstream in our production, heating and heat treatment furnaces etc (full scope 1-2) as well as all the emission from input material, eg. alloys, scope 3.

Steel Grade	Format	Condition	Scope 1-3 (CO2e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO2e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
SB9257	Round bar	+AR	454	191

As of 1 January 2022 we use carbon offset for all our scope 1- 2 emissions, so in practice the climate compensated data is the same as the full Scope 3 level.
All above data are to be seen as typical values for the specified format and condition. Detailed information about your specific product please contact your sales contact.

Other properties (typical values)

Youngs module (GPa)	Poisson´s ratio (-)	Shear module (GPa)	Density (kg/m3)
210	0.3	80	7800
Average CTE 20-300°C (µm/m°K)	Specific heat capacity 50/100°C (J/kg °K)	Thermal conductivity Ambient temperature (W/m°K)	Electrical resistivityAmbient temperature (µΩm)
12	460 - 480	40 - 45	0.20 - 0.25

Contact us

Would you like to know more about our offers? Don´t hesitate to contact us:

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For more detailed information please visit http://www.ovako.com/en/Contact-Ovako/