MATERIAL DATA SHEET

STEEL GRADE

Last revised: Thu, 16 Jan 2025 15:45:52 GMT

OVAKO

19MnVS6 All

General Information

19MnVS6 according to EN10267 may with its generous chemical analysis and moderate mechanical requirements host a number of grades. It does at Ovako's! All variants are microalloyed with vanadium which gives a fine grain size and a good start for excellent toughness. The most frequent usage is as rolled, but all members in the family may be heat-treated in different ways. A heat-treatment will naturally affect the mechanical properties.

The Ovako program starts with a yield strength of minimum 400 MPa and finishes at minimum 520 MPa where each variant is carefully balanced to give the desired properties without a wasteful addition of alloying elements. Weldability goes from excellent to good with increasing alloying content and yield strength.

19MnVS6 is also available as M-steel.

Similar designations

SB280 - 18Mn6, E470, SS2134, 1.5217, 19MnV6

Chemical composition

Variant	Cast	Di	Weldability		C %	Si %	Mn %	P %	S %	V %	Al %
7255	CC	1.5	CEV 0.45_{max}	Min	0.16	0.20	1.30	-	0.020	0.060	0.011
			Pcm 0.28_{max}	Max	0.20	0.50	1.60	0.020	0.040	0.110	0.060

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A_5 [%]	Hardness	Impact (ISO-V) $strength_{min}$
7255	+AR	Round bar	95 < 130	440*	550-700	19	< 230 HB	-20 °C 27 J (long)
		Round bar	130 < 160	400*	550-700	19	< 230 HB	-20 °C 27 J (long)

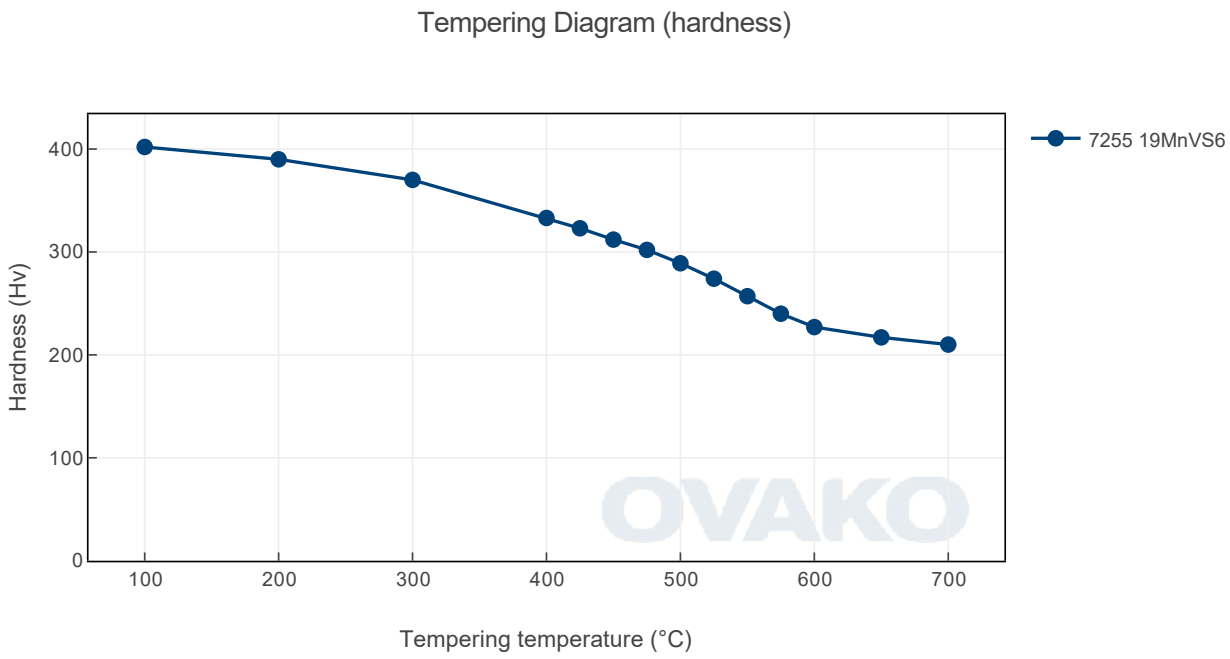
*$Rp_{0.2}$ * R_{eh}, ** R_{el}*

Transformation temperatures

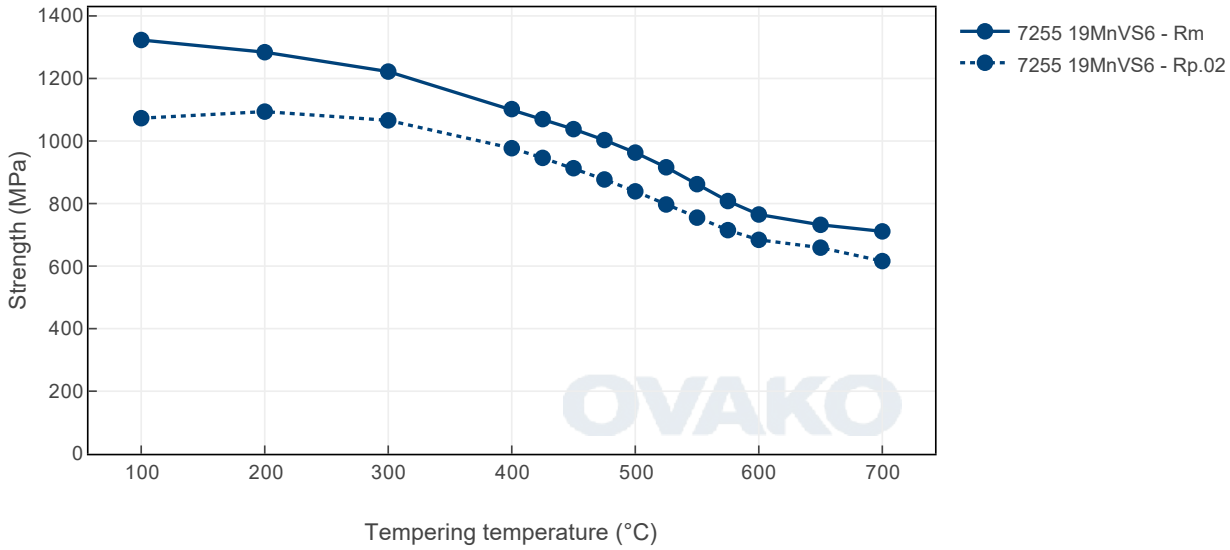
	Temperature °C
MS	410
AC1	720
AC3	810

Heat Treatment Guide generated Graphs

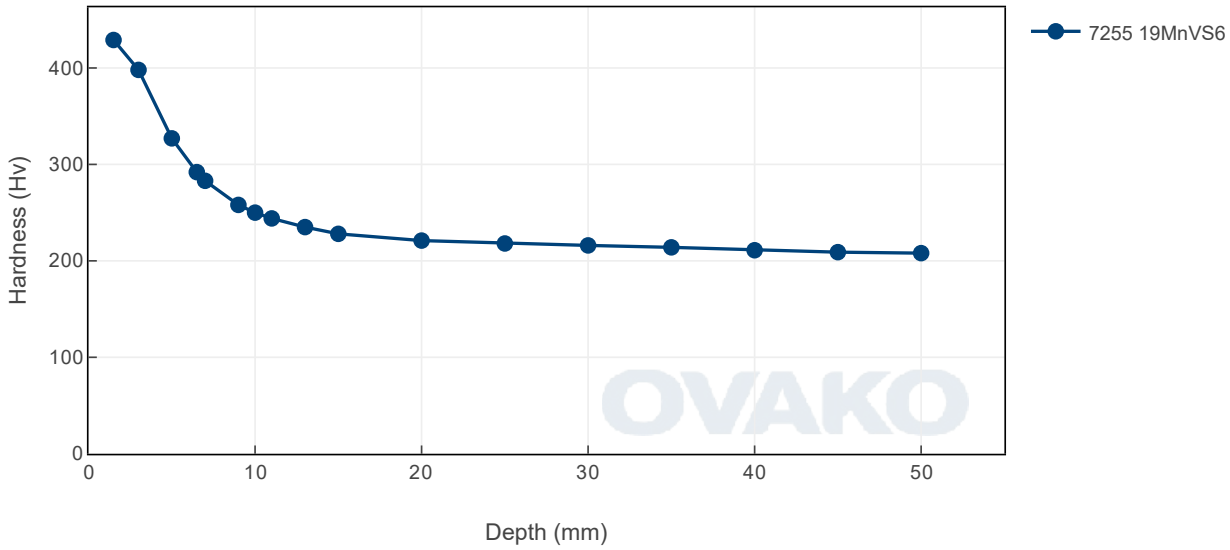
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



Tempering Diagram (strength)



Jominy


Hardness (Hv)
400
300
200
100
0
0
10
20
30
40
50
Depth (mm)
7255 19MnVS6
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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.

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)
SB500	Flat bar	+AR	416
SB280	Round bar	+AR	410
SB280X	Flat bar	+AR	411
SB450	Round bar	+AR	411
SB280XM	Round bar	+AR	429
7256	Round bar	+AR	511
280 M (7266)	Round bar	+AR	516
7255	Flat bar	+AR	513

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/