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	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	V %
SB500	CC	CEV 0.56_{max}	Min	-	0.15	1.25	-	-	-	-	-
		Pcm 0.33_{max}	Max	0.20	0.50	1.60	0.035	0.035	0.30	0.25	0.150

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A_5 [%]	Hardness	Impact (ISO-V) $strength_{min}$
SB500	+AR	Round bar	14 < 25	500*	670-830	19	200-250 HB	-
		Round bar	25 < 60	500*	650-750	19	190-230 HB	-20 °C 27 J (long)
		Flat bar	6 < 10	500*	630-780	19	190-250 HB	-
		Flat bar	10 < 15	500*	630-750	19	190-230 HB	-
		Flat bar	15 < 30	500*	630-750	19	190-230 HB	-
		Flat bar	30 < 70	470*	610-730	19	180-225 HB	-20 °C 27 J (long)

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

Transformation temperatures

	Temperature °C
MS	410
AC1	720
AC3	810

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)	Climate compensated Net emission = Scope 3 (CO2e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
SB500	Flat bar	+AR	416	179
SB280	Round bar	+AR	410	177
SB280X	Flat bar	+AR	411	181
SB450	Round bar	+AR	411	190
SB280XM	Round bar	+AR	429	195
7256	Round bar	+AR	511	220
280 M (7266)	Round bar	+AR	516	225
7255	Flat bar	+AR	513	229

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:

Via e-mail: info@ovako.com

Via telephone: +46 8 622 1300

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