

38MnVS6 All

General Information

Grade 38MnVS6 is a micro-alloyed medium carbon steel for general purposes. The steel is recommended for applications demanding high mechanical properties and smooth surfaces.

482A - Ingot cast variant

7221 - Continuous cast variant.

SB9857 - Continuous cast variant.

For additional Heat Treatment Data, please visit the Heat Treatment Guide

Similar designations

39MnV5, 1.1303

Chemical composition

Variant	Cast	Di	Weldability		C%	Si%	Mn%	P%	S%	Cr%	Ni%	Mo%	V%	Cu%	Al%	N%
482A	IC	3.5	CEV 0.75 _{max}	Min	0.37	0.35	1.25	-	0.020	0.20	0.15	-	0.110	-	-	-
			Pcm 0.53 _{max}	Max	0.40	0.42	1.35	0.025	0.028	0.26	0.20	0.05	0.150	-	-	-
7221	CC	2.81	CEV 0.68 _{max}	Min	0.36	0.30	1.00	-	0.010	-	-	0.02	0.100	-	0.010	0.0100
			Pcm 0.498 _{max}	Max	0.41	0.50	1.40	0.025	0.025	0.30	-	0.06	0.200	-	0.040	0.0180
SB9857	CC		CEV 0.7 _{max}	Min	0.37	0.30	1.20	-	-	-	-	-	0.110	-	-	-
			Pcm 0.51 _{max}	Max	0.43	0.50	1.40	0.025	0.030	0.30	-	-	0.160	-	-	-
38MnVS6 EN 10267:1998	Std		CEV 0.72 _{max}	Min	0.34	0.15	1.20	-	0.020	-	-	-	0.080	-	-	-
			Pcm 0.5 _{max}	Max	0.41	0.80	1.60	0.025	0.060	0.30	-	-	0.200	-	-	-

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A ₅ [%]	Reduction of area Z _{min} [%]	Hardness	Impact (ISO-V) strength _{min}
482A	+AR	Round bar	90 < 140	580*	850-1000	14	-	< 300 HB	20 °C 20 J (long)
7221	+AR	Round bar	22 < 120	580	850-1000	12	25	250-300 HB	-
SB9857	+AR	Round bar	20 < 95	580**	850-1000	14	-	250-300 HB	0 °C 0 J (long)
38MnVS6 EN 10267:1998	+AR	All formats	-	520**	800-950	12	25	-	-

*R_{p0.2} * R_{eh}, ** R_{el}*

Transformation temperatures

	Temperature °C
MS	330
AC1	720
AC3	780

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 resistivity Ambient temperature (µΩm)
12	460 - 480	40 - 45	0.20 - 0.25

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