

STEEL GRADE

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S355J2 All

General Information

S355J2 is a micro alloyed structural steel suitable for e.g. mechanical engineering applications. The steel possess a good weldability with max CEV =0.47 for all variants. The steel may be delivered with a controlled silicon content for good galvanizing properties. Below, a number of closely related variants with various impact strength are presented.

Variant SB9813 is delivered with a closely controlled C-content for predictable properties and with a CEV value of max 0.41.

Variant S355J2(M) is a M-treated variant

Variant S355K2 and S355L4 both show good Impact toughness

Variant 285K is a variant of 520M

Variant 520M is a M-steel variant of S355J2

Variant 550M is a drawn or peeled version of S355J2

M-Steel®

The basis for the concept is that non-metallic inclusions are modified and controlled with calcium treatment in a way to minimize tool wear and to maximize chip control in machining operations. Our M-Steel treatment can be applied to any steel grade.


Similar designations

ASt 52, A52 FP, Q420q-D, 1501 Gr.224-460, A52 RBII, 1.0577, St52-3, SB9837 Grade32-36, SB9833

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	V %
S355J2(M)	CC	CEV 0.5 _{max}	Min	-	-	-	-	0.020	-
		Pcm 0.3 _{max}	Max	0.20	0.55	1.60	0.035	0.040	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}
S355J2(M)	+AR	All formats	< 16	355**	490-630	22	150-190 HB	-20 °C 27 J (long)
		All formats	17 < 40	345**	490-630	22	150-190 HB	-20 °C 27 J (long)
		All formats	41 < 63	335**	490-630	21	150-190 HB	-20 °C 27 J (long)
			64 < 80	325**	490-630	30	150-190 HB	-20 °C 27 J (long)

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

Transformation temperatures

	Temperature °C
MS	400
AC1	720
AC3	815

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 CO₂ 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)
SB9813	Flat bar	+AR	404	167
550 M (2723)	Round bar	+AR	526	222
520 M (2721, 2723)	Round bar	+AR	525	221

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

Contact us

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

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