MATERIAL DATA SHEET STEEL GRADE

Last revised: Fri, 31 Jan 2025 15:25:31 GMT





General Information

S355J2 is a micro alloyed structural steel suitable for e.g. mechanical engineering applications. The steel posess a good weldability with max CEV =0.47 for all variants. The steel may be delivered with a controlled silicon content for good galvanazing 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

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		С%	Si %	Mn %	Р%	S %	Cu %
S355L4	сс	CEV 0.43 _{max}	Min	-	-	-	-	-	-
		Pcm 0.26 _{max}	Max	0.16	0.55	1.60	0.030	0.030	0.40

Mechanical Properties

Variant	Condition	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A ₅ [%]	Hardness	Impact (ISO-V) strength _{min}
S355L4 +A		< 16	355**	470-630	22	140-190 HB	-40 °C 60 J (long)
	+AR	16 < 40	345**	470-630	22	140-190 HB	-40 °C 60 J (long)
		40 < 63	335**	470-630	21	140-190 HB	-40 °C 60 J (long)
		63 < 80	325**	470-630	20	140-190 HB	-40 °C 60 J (long)
		80 < 100	315**	470-630	20	140-190 HB	-40 °C 60 J (long)

Rp_{0.2} * 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 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	G 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 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/

Disclaimer

The information in this document is for illustrative purposes only. The data and examples are only general recommendations and not a warranty or a guarantee. The suitability of a product for a specific application can be confirmed only by Ovako once given the actual conditions. The purchaser of an Ovako product has the responsibility to ascertain and control the applicability of the products before using them. Continuous development may necessitate changes in technical data without notice. This document is only valid for Ovako material. Other material, covering the same international specifications, does not necessarily comply with the properties presented in this document.