

S235JR All

General Information

Soft structural steel easy to weld and bend.

Variants suitability for hot dip zinc coating according the classification in Table 1 EN 10025-2:2004: Class 1: Si max 0,030% and Si + 2,5 P max 0,090%. Class 2: Si max 0,035%. Class 3 Si 0,14...0,25% and P max 0,035%.

Similar designations

SS 1312, S235JR, 1.0038, Fe 360 BFN, RSt37-2, 40 B, SB1312, IM2191

Chemical composition

Variant	Cast	Weldability		C%	Mn %	P%	S%	Cu %	N%
SS 14 13 12:1987 (ref)	Std	CEV _{max}	Min	-	-	-	-	-	-
		Pcm _{max}	Max	0.20	-	0.050	0.050	-	0.0120
S235JR EN10025-2 (ref)	Std	CEV 0.35 _{max}	Min	-	-	-	-	-	-
		Pcm 0.25 _{max}	Max	0.17	1.40	0.035	0.035	0.55	0.0120

S235JR: C max 0,20 % for sizes over 40 mm. Only CEV required in standard

SS 1312: Not binding recommendation for Mn (0,4 - 0,7) % in standard

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A ₅ [%]	Hardness	Impact (ISO-V) strength _{min}
SS 14 13 12:1987 (ref)	+AR	All formats	< 40	240*	360-460	25	< 130 HB	-
		All formats	40.1 < 100	230*	360-460	25	< 130 HB	-
S235JR EN10025-2 (ref)	+AR	All formats	< 16	235*	360-510	26	-	20 °C 27 J (long)
		All formats	16.1 < 40	225*	360-510	26	-	20 °C 27 J (long)
		All formats	40.1 < 63	215*	360-510	25	-	20 °C 27 J (long)
		All formats	63.1 < 100	215*	360-510	24	-	20 °C 27 J (long)
		All formats	100.1 < 150	195*	350-500	22	-	20 °C 27 J (long)
		All formats	150.1 < 200	185*	340-490	21	-	20 °C 27 J (long)

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

Transformation temperatures

	Temperature °C
MS	485
AC1	725
AC3	863

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

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.