MATERIAL DATA SHEET

STEEL GRADE

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OVAKO

S355JR All

General Information

S355 is a structural micro-alloyed grade used for a great variety of applications. It is standardized with a specified impact strength of 27 J at a few different temperatures, but EN10027 gives guidelines how to extend the designation.

Similar designations

S355K2 - 15Mn4, S355JR - C16, S355J2 - C16

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cu %	N %
S355JR / 2132	CC	CEV 0.52_{max}	Min	-	-	-	-	-	-	-
		Pcm 0.35_{max}	Max	0.24	0.55	1.60	0.040	0.040	0.40	0.0120
S355JR EN10025-2:2019	Std	CEV 0.52_{max}	Min	-	-	-	-	-	-	-
		Pcm 0.35_{max}	Max	0.24	0.55	1.60	0.035	0.035	0.55	-

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A_5 [%]	Hardness	Impact (ISO-V) $strength_{min}$
S355JR / 2132	+AR	Flat bar	< 16	355**	470-630	22	140-190 HB	20 °C 27 J (long)
		Flat bar	16 < 40	345**	470-630	22	140-190 HB	20 °C 27 J (long)
		Flat bar	40 < 63	335**	470-630	21	140-190 HB	20 °C 27 J (long)
		Flat bar	63 < 80	325**	470-630	20	140-190 HB	20 °C 27 J (long)
		Flat bar	80 < 100	315**	470-630	20	140-190 HB	20 °C 27 J (long)

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

Transformation temperatures

	Temperature °C
MS	540
AC1	720
AC3	790

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

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