

## S400\* All

### General Information

Grade SB400D is a micro-alloyed steel for general purposes with specified mechanical properties and impact requirements. The material is delivered as rolled and suitable for welding. The mechanical properties may change if the material is heat-treated.

Grade SB420 is a micro-alloyed steel for general purposes with specified mechanical properties and impact requirements. The material is delivered as rolled. The mechanical properties may change if the material is heat-treated.

*\* Designation followed by "" is not an official EN standard grade but named according to the rules in EN 10027.*

### Similar designations

2142

### Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Ni %	Mo %	V %	Ti %	Cu %	Al %	N %
SB400D	CC	CEV <sub>0.48</sub> <sub>max</sub>	Mn	-	-	-	-	-	-	-	-	-	-	-	-
		Pcm <sub>0.31</sub> <sub>max</sub>	Max	0.20	0.50	1.60	0.035	0.035	-	-	-	-	-	-	0.0200
S420N	CC	CEV <sub>0.6</sub> <sub>max</sub>	Mn	-	-	1.00	-	-	-	-	-	-	-	-	-
		Pcm <sub>0.35</sub> <sub>max</sub>	Max	0.20	0.60	1.70	0.035	0.030	0.08	0.10	0.200	0.030	0.55	0.020	0.0250
SB400	CC	CEV <sub>0.5</sub> <sub>max</sub>	Mn	-	-	-	-	-	-	-	0.070	-	-	-	-
		Pcm <sub>0.32</sub> <sub>max</sub>	Max	0.20	0.50	1.60	0.035	0.035	-	-	0.150	-	-	-	0.0200

## Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A <sub>5</sub> [%]	Hardness	Impact (ISO-V) strength <sub>min</sub>
SB400D	+AR	Flat bar	10 < 15	420**	530-600	20	160-180 HB	-20 °C 27 J (long)
		Flat bar	15 < 30	400**	530-660	20	160-200 HB	-20 °C 27 J (long)
		Flat bar	> 30	400**	530-660	20	160-200 HB	-20 °C 27 J (long)
	+N	Flat bar	> 30	330**	450-580	25	135-175 HB	-20 °C 60 J (long)
S420N	+AR	Flat bar	< 16	420**	520-680	19	160-205 HB	-20 °C 40 J (long)
		Flat bar	16 < 40	400**	520-680	19	160-205 HB	-20 °C 40 J (long)
		Flat bar	40 < 63	390**	520-680	19	160-205 HB	-20 °C 40 J (long)
		Flat bar	63 < 80	370**	520-680	18	160-205 HB	-20 °C 40 J (long)
		Flat bar	80 < 100	360**	520-680	18	160-205 HB	-20 °C 40 J (long)
SB400	+AR		-	400**	< 530	20	< 160 HB	-

*R<sub>p0.2</sub> \* R<sub>eh</sub>, \*\* R<sub>el</sub>*

## Transformation temperatures

	Temperature °C
MS	400
AC1	720
AC3	820

## Other properties (typical values)

Youngs module (GPa)	Poisson's ratio (-)	Shear module (GPa)	Density (kg/m <sup>3</sup> )
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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