

## STEEL GRADE

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# 30CrNiMo8

All

## General Information

Quenching and tempering steel with a very high hardenability.

For additional Heat Treatment Data, please visit the Heat Treatment Guide

## Similar designations

1.6580, 823M30

## Chemical composition

Variant	Cast	Di		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Cu %
30CrNiMo8 (6507)	CC	12.1	Min	0.26	-	0.50	-	-	1.80	1.80	0.30	-
			Max	0.34	0.40	0.80	0.025	0.035	2.20	2.20	0.50	0.40
30CrNiMo8 ISO 683-2:2016	Std	12.1	Min	0.26	0.10	0.50	-	-	1.80	1.80	0.30	-
			Max	0.34	0.40	0.80	0.025	0.035	2.20	2.20	0.50	0.40

## Mechanical Properties

Variant	Condition <sup>①</sup>	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A <sub>5</sub> [%]	Reduction of area Z <sub>min</sub> [%]	Hardness	Impact (ISO-V) strength <sub>min</sub>
30CrNiMo8 (6507)	+AR	Round bar	25 < 150	-	-	-	-	< 410 HB	-
	+A	Round bar	25 < 150	-	-	-	-	< 248 HB	-
	+QT	Round bar	25 < 40	1050	1250-1450	9	40	-	20 °C 30 J (long)
		Round bar	40 < 100	900*	1100-1300	10	45	-	-40 °C 27 J (long)
		Round bar	100 < 150	800*	1000-1200	11	50	-	-40 °C 27 J (long)
30CrNiMo8 ISO 683-2:2016	+AR	Round bar	25 < 150	-	-	-	-	< 410 HB	-
	+A	Round bar	25 < 150	-	-	-	-	< 248 HB	-
	+QT	Round bar	25 < 40	850	1030-1230	12	40	-	20 °C 30 J (long)
		Round bar	40.1 < 100	800*	980-1180	12	45	-	20 °C 35 J (long)
		Round bar	100.1 < 150	800*	980-1180	12	50	-	20 °C 45 J (long)

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

## Transformation temperatures

	Temperature °C
MS	309
AC1	731
AC3	788

## Heat treatment recommendations

Treatment	Condition <sup>②</sup>	Temperature cycle	Cooling/quenching
Quenching	+QT	830...860	In oil or water
Tempering	+QT	540...660	In air
Annealing	+A	650...700	Slowly (15 °C/h) until 600 °C
Stress relieve annealing	+SRA	450...650	In air
Hot forging		880...1 050	In air

## 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<sub>2</sub> 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)
6507	Round bar	+AR	811	529
6507	Round bar	+QT	1121	634

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

Would you like to know more about our offers? Don't hesitate to contact us:

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Via telephone: +46 8 622 1300

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

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