

## STEEL GRADE

Last revised: Tue, 28 Jan 2025 16:22:49 GMT

30CrMo4\* All

## General Information

30CrMo4\* is a Cr and Mo alloyed quench and tempering steel with low to medium carbon content according to SAE 4130. This grade combine high strength with high toughness. Also suitable for flame or induction hardening.

322D - Is an ingot cast low sulphur steel

322Q - Is an IQ (isotropic quality) variant

## IQ-Steel®

IQ-Steel® is an isotropic quality ultra clean steel optimized for high fatigue strength under multi axial loading.

## Similar designations

25CrMo4, 34CrMo4

## Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %
322D	IC	CEV 0.74 <sub>max</sub>	Min	0.28	0.20	0.40	-	-	0.90	-	0.18
		Pcm 0.47 <sub>max</sub>	Max	0.33	0.35	0.60	0.025	0.010	1.10	0.25	0.25
322Q	IC	CEV <sub>max</sub>	Min	0.29	0.20	0.60	-	-	0.90	0.15	0.20
		Pcm <sub>max</sub>	Max	0.32	0.35	0.70	0.010	0.002	1.10	0.25	0.25

## Mechanical Properties

Variant	Condition	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>
322D	+QT	Tube,wall	< 25	600	730 typical	23	70	225 HB typical	20 °C 193 J (long)
		Tube,wall	< 25	600	730 typical	23	70	225 HB typical	-20 °C 183 J (long)
		Tube,wall	< 25	600	730 typical	23	70	225 HB typical	-40 °C 176 J (long)

*RP<sub>0.2</sub> \* R<sub>eh</sub>, \*\* R<sub>el</sub>*

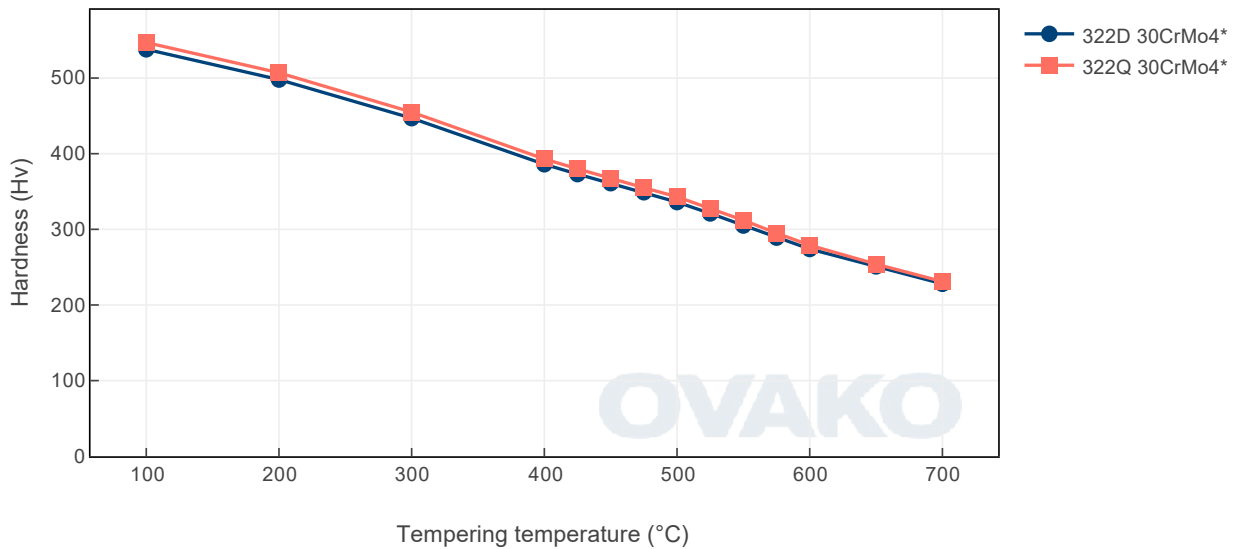
## Transformation temperatures

	Temperature °C
MS	391
AC1	746
AC3	826

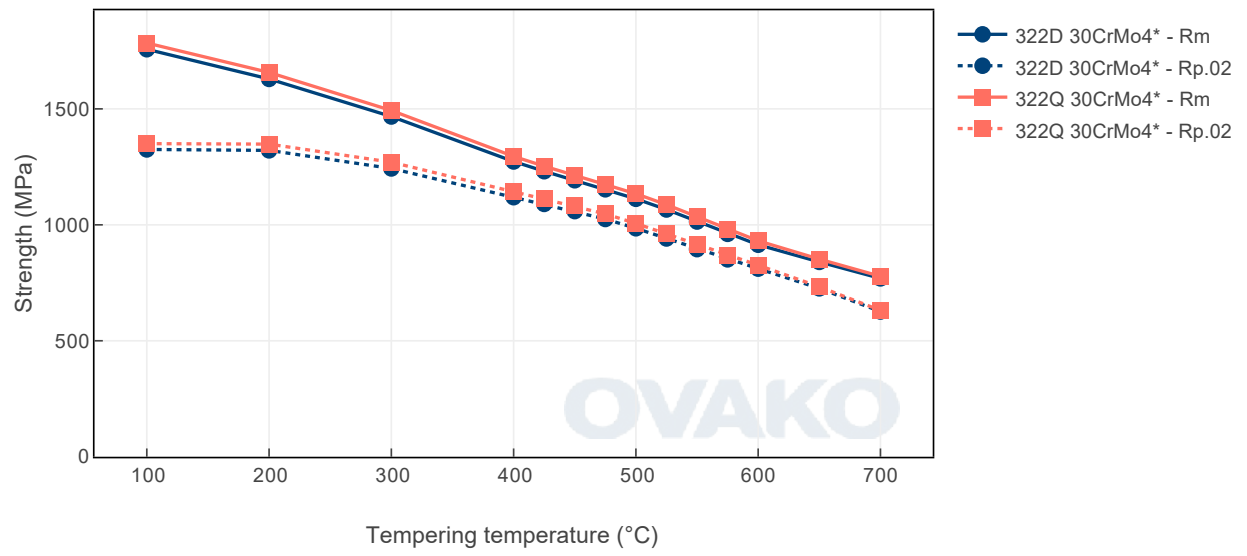
## Heat Treatment Guide generated Graphs

The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.

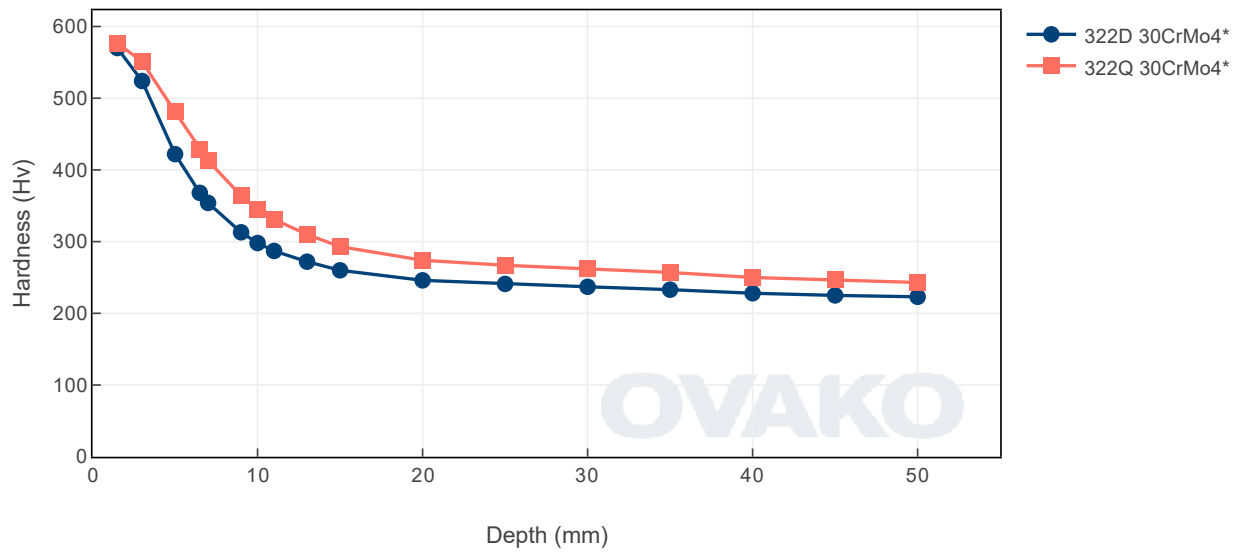
Tempering Diagram (hardness)



Tempering Diagram (strength)

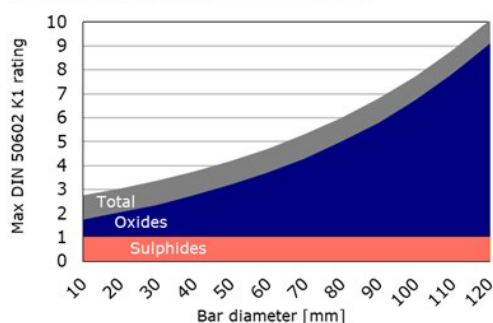


# Jominy



## IQ

Inclusion limits IQ-processed steel



## 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)
322D	Round bar	+AR	607
322D	Round bar	+QT	612
322D	Tube,wall	+AR	629
322D	Tube,wall	+QT	637

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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