MATERIAL DATA SHEET

STEEL GRADE

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

OVAKO

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_{max}	Min	0.28	0.20	0.40	-	-	0.90	-	0.18
		Pcm 0.47_{max}	Max	0.33	0.35	0.60	0.025	0.010	1.10	0.25	0.25
322Q	IC	CEV $_{max}$	Min	0.29	0.20	0.60	-	-	0.90	0.15	0.20
		Pcm $_{max}$	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_5 [%]	Reduction of area Z_{min} [%]	Hardness	Impact (ISO-V) $strength_{min}$
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)

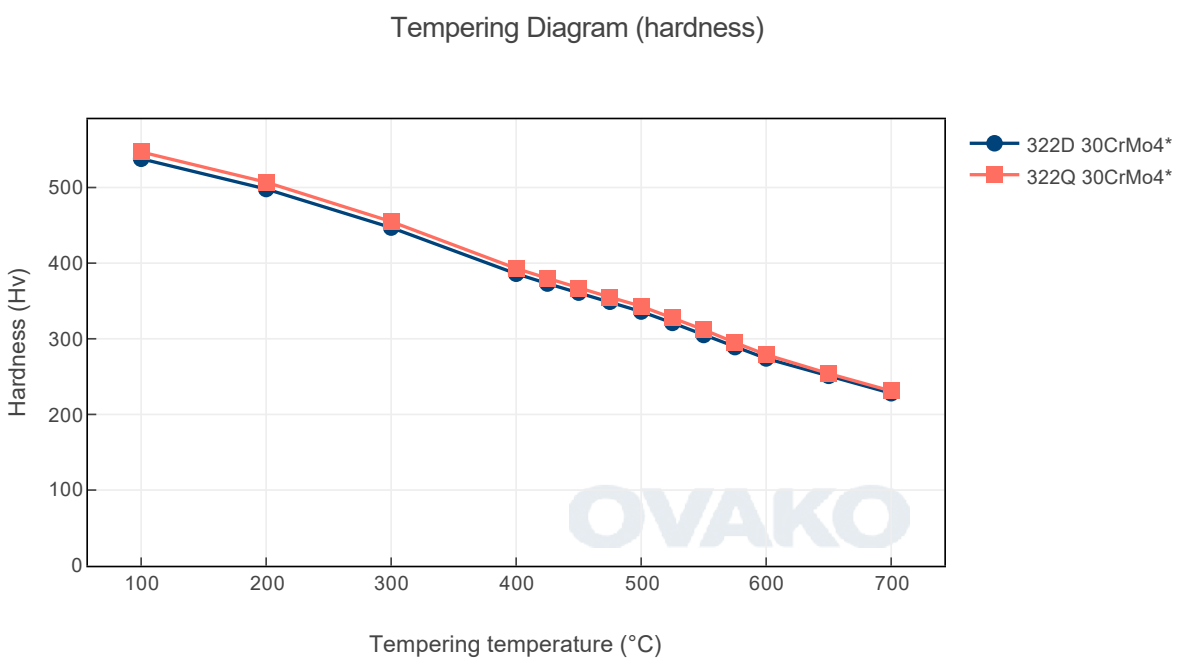
*$Rp_{0.2}$ * R_{eh}, ** R_{el}*

Transformation temperatures

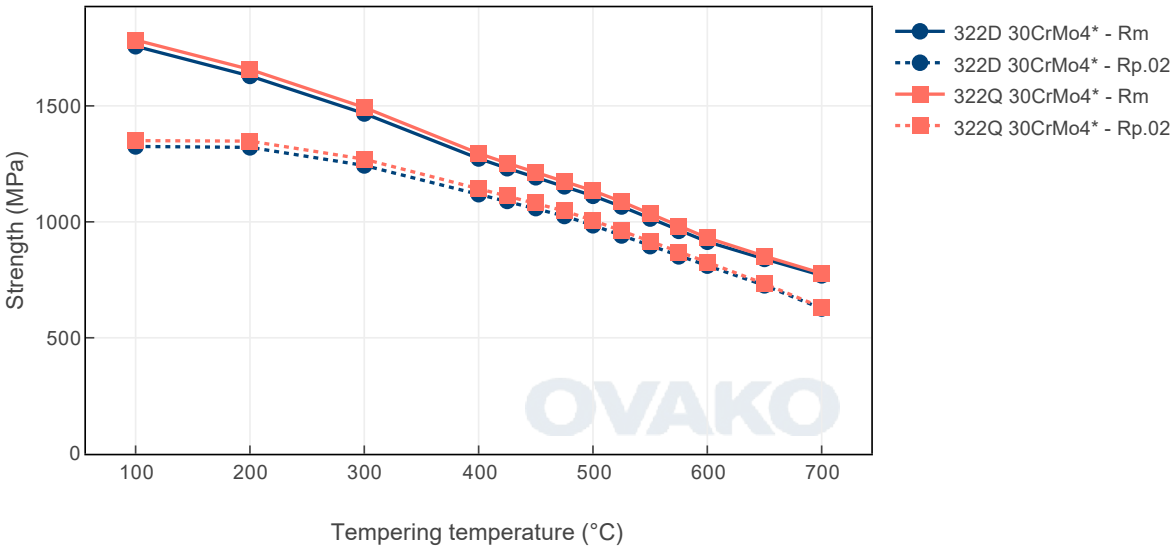
	Temperature °C
MS	391
AC1	746
AC3	826

Heat Treatment Guide generated Graphs

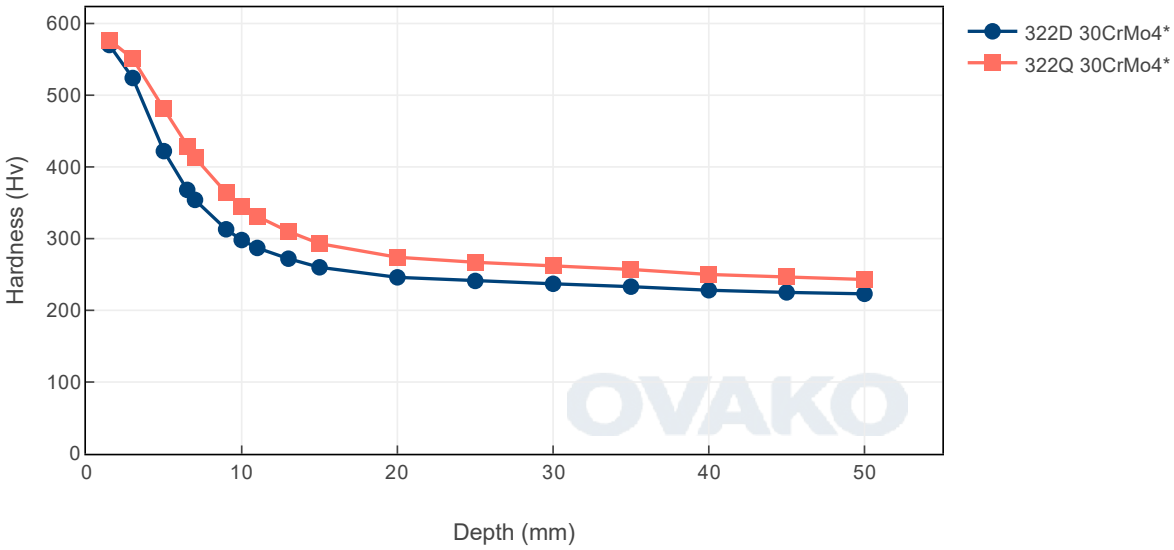
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



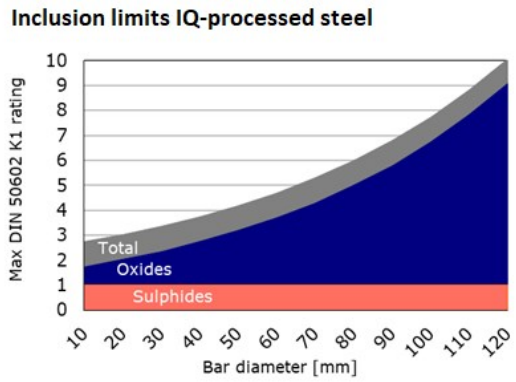
Tempering Diagram (strength)



Jominy


Hardness (Hv)
600
500
400
300
200
100
0
0
10
20
30
40
50
Depth (mm)
322D 30CrMo4*
322Q 30CrMo4*
OVAKO

IQ



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_2 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)
322D	Round bar	+AR	607	207
322D	Round bar	+QT	612	211
322D	Tube,wall	+AR	629	231
322D	Tube,wall	+QT	637	238

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

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