Material data sheet Steel grade







General Information

20Cr2* is a carburizing steel with good toughness and high fatigue strength. Equivalent to the US Standard grade 4118.

126H is a Bearing Steel Quality (BQ) variant.

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

BQ-Steel®

BQ-Steel® is a bearing quality clean steel optimized for fatigue strength and is also ideal for new design solutions outside the bearing industry.

Similar designations

4118H

Chemical composition

Variant	Cast	Weldability		C%	Si %	Mn %	Р%	s%	Cr%	Ni %	Mo%	V%
126H	IC	CEV 0.59 _{max}	Min	0.18	0.20	0.70	-	-	0.40	-	0.08	-
		Pcm 0.36 _{max}	Max	0.23	0.35	0.90	0.025	0.015	0.60	0.25	0.15	0.100

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Hardness		
126H	+AR	Tube,wall	7 < 23	190 HB typical		

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

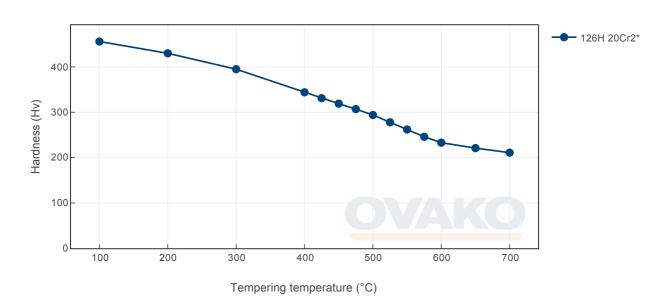
Transformation temperatures

	Temperature °C
MS	421
AC1	730
AC3	818

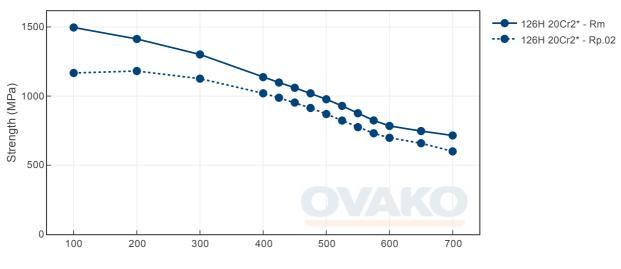
Heat Treatment Guide generated Graphs

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)

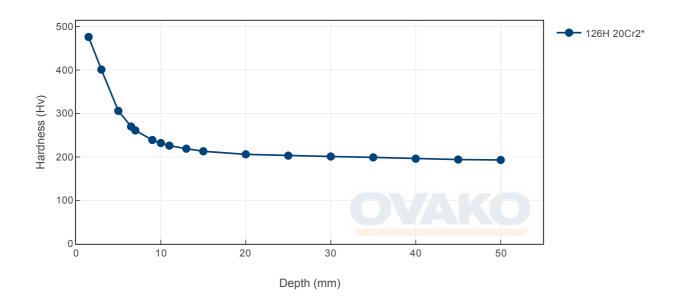


Tempering Diagram (strength)



Tempering temperature (°C)

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Steel cleanliness

Micro inclusions									Macro inclusions			
										ISO 3763		
Applied standard	ASTN	ASTM E45							Applied standard		(Blue fracture)	
Sampling	ASTM A295						Sampling	Statistical testing on billets				
Maximum average	А В			С		D						
limits	Th	Не	Th	Не	Th	Не	Th	Не		Limits	< 2,5 mm/dm ²	
iiiiitə	2,0	1,5	0,8	0,1	0	0	0,5	0,4				

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.

In many international comparisons the crude steel Scope 1-2 emission is a key parameter, ie. the CO_2 emission from the steel works itself.

As of 1 January 2022 we carbon offset all our scope 1 and 2 volume shown below.

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 CO₂ 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 Scope 1-3 (CO2e kg /1000 kg steel)		. `	Climate compensated Net emission = Scope 3 (CO2e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)				
126H	Round bar	+AR	596	203				
126H	Round bar	+SA	601	204				
126H	Tube,wall	+AR	622	221				
126H	Tube,wall	+SA	623	221				

To get the full picture of our products environmental impact we have to look at all of our CO₂ 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.

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

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

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