

STEEL GRADE

Last revised: Thu, 16 Jan 2025 14:19:05 GMT

18CrNiMnMo7-5-5*

All

General Information

Ovako 250R is a quench and tempering steel that is used for large chains.

- Weldable using normal chain welding methods
- Available as bar in as rolled condition

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

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	DI %
250R	IC	CEV 1.01 _{max}	Min	0.17	0.20	1.15	-	-	1.70	1.15	0.42	0.00
		Pcm 0.44 _{max}	Max	0.19	0.30	1.30	0.015	0.010	1.90	1.30	0.48	10.50

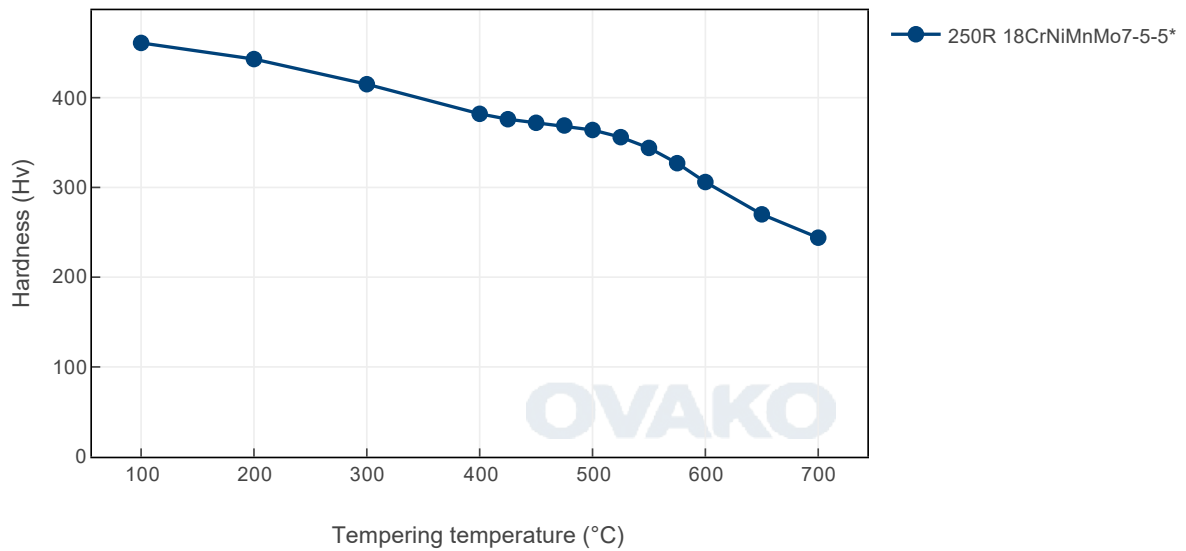
Transformation temperatures

	Temperature °C
AC1	726
AC3	817

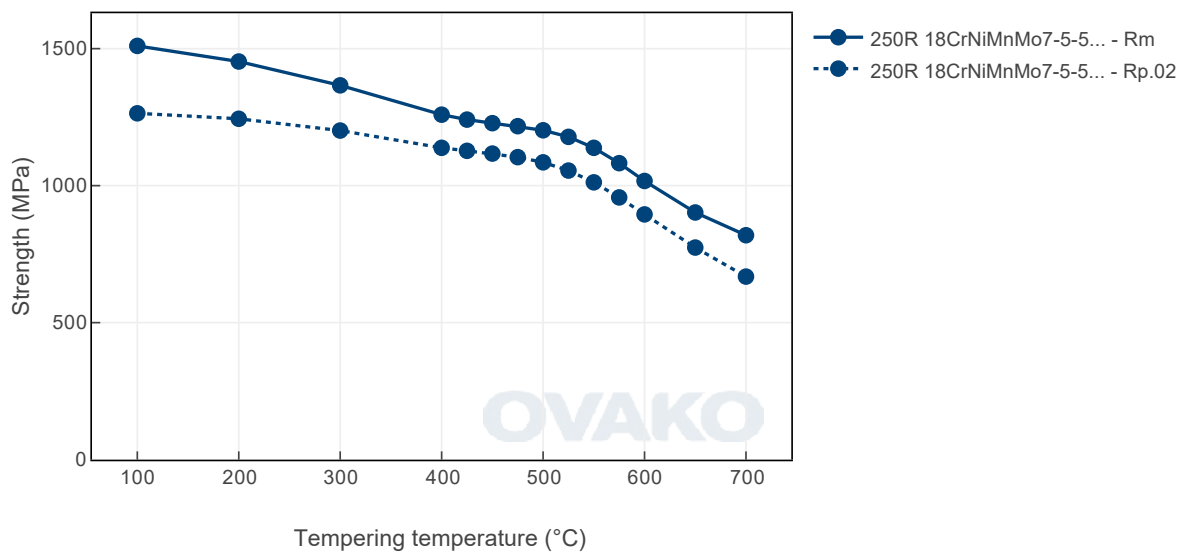
Heat Treatment Guide generated Graphs

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.

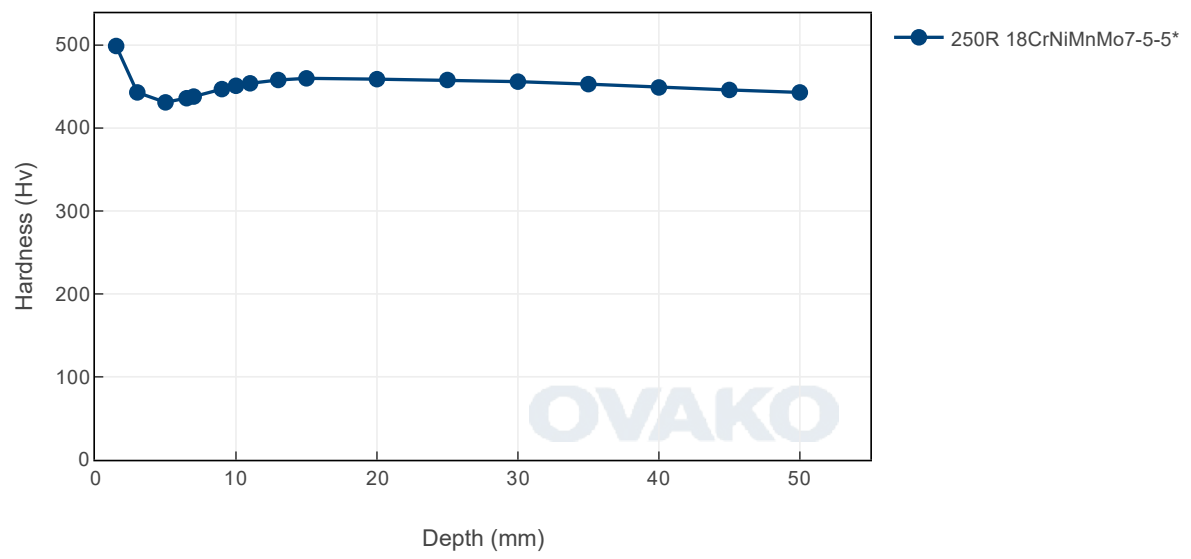
Tempering Diagram (hardness)



Tempering Diagram (strength)

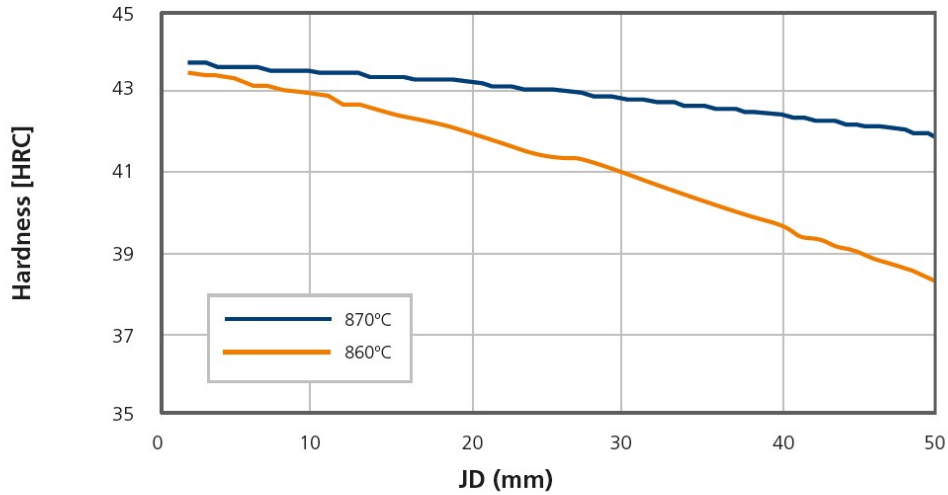


Jominy



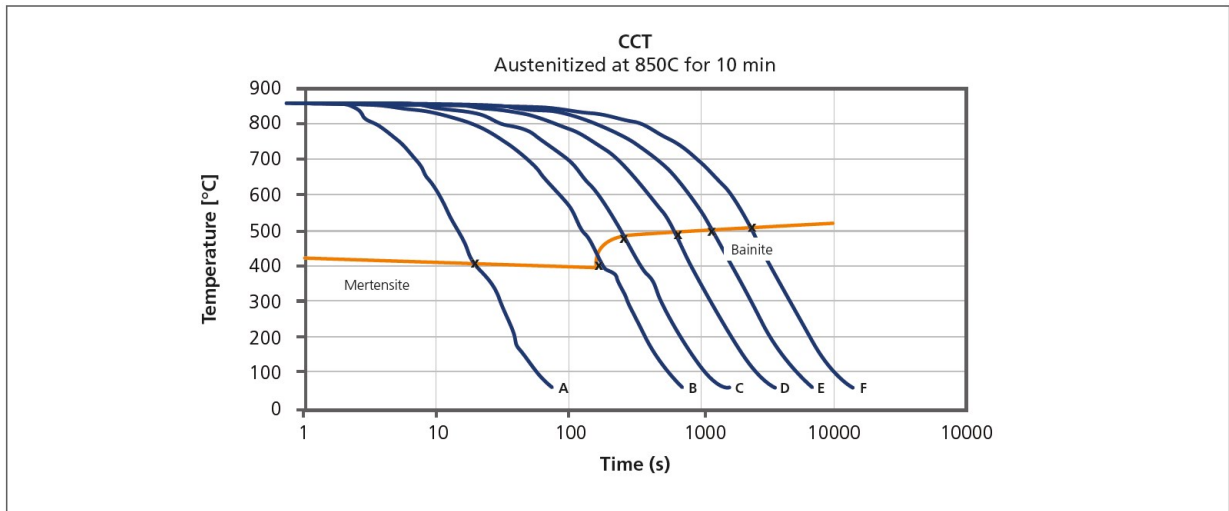
Ovako 250R

**Hardenability 250R
(according to Jominy)**



Hardenability of Ovako 250R calculated from CCT measurements and two-dimensional quenching of a bar.

CCT - Ovako 250R



	A	B	C	D	E	F&
t_{8-5} [s]	10	100	200	500	1000	2000
HV ₃₀	450	424	422	393	377	345

Steel cleanliness

Micro inclusions - steel grade 250R								Macro inclusions - 250R		
Applied standard	ASTM E45							Applied standard	ISO 3763 (Blue fracture)	
Sampling	ASTM A295							Sampling	Statistical testing on billets	
Maximum average limits	A		B		C		D		Limits	< 5 mm/dm ²
	Th	He	Th	He	Th	He	Th	He		
	2.5	1.5	1.0	0.5	0	0	0.5	0.5		

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 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	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)
250R	Round bar	+AR	842	443

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:

Via e-mail: info@ovako.com

Via telephone: +46 8 622 1300

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

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