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**OVAKO** 

# 18CrNiMnMo7-5-5\* A

#### **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		С%	Si %	Mn %	Р%	S %	Cr %	Ni %	Mo %	DI %
250R	IC	CEV 1.01 <sub>max</sub>	Min	0.17	0.20	1.15	-	-	1.70	1.15	0.42	0.00
		Pcm 0.44 <sub>max</sub>	Max	0.19	0.30	1.30	0.015	0.010	1.90	1.30	0.48	10.50

# Transformation temperatures

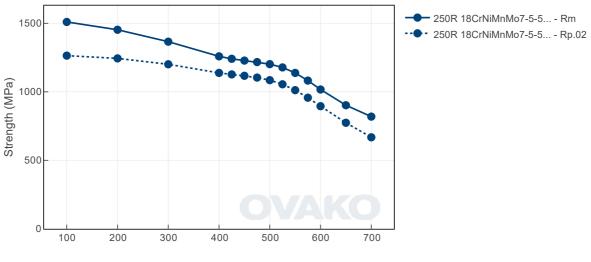
	Temperature °C
AC1	726
AC3	817

### 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.

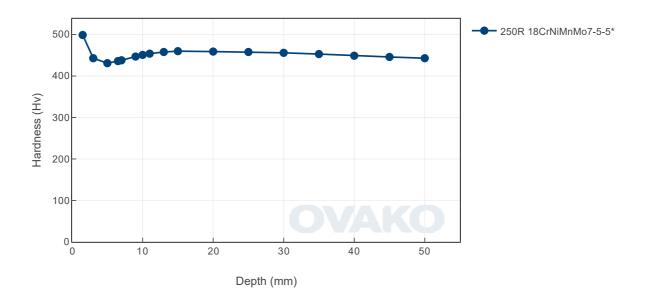
Tempering Diagram (hardness) - 250R 18CrNiMnMo7-5-5\* 400 Hardness (Hv) 300 200 100 0 200 400 500 600 100 300 700 Tempering temperature (°C)

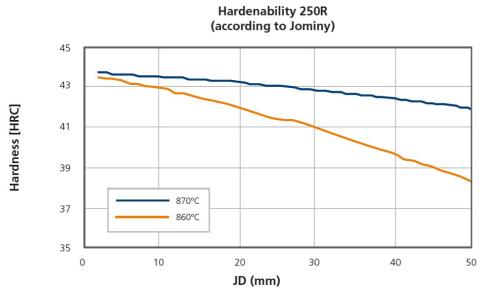




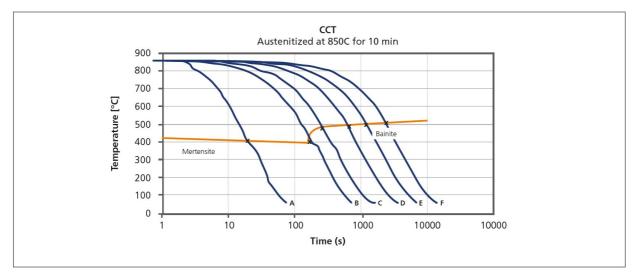
Tempering temperature (°C)

Jominy





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



## CCT - Ovako 250R

8	А	В	С	D	E	F&
t <sub>8-5</sub> [s]	10	100	200	500	1000	2000
Hv <sub>30</sub>	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	AST	ASTM A295					Sampling	Statistical testing on billets		
Maximum average	А	A B				C D				
limite	Th	He	Th	He	Th	He	Th	He	Limits	< 5 mm/dm <sup>2</sup>
limits	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  $CO_2$  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	-		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 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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Via telephone: +46 8 622 1300

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

#### Disclaimer

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