

# P355NH All

## General Information

Hot rolled weldable steel bars for pressure purposes with specified elevated temperature properties.

## Similar designations

WStE 355, A 510AP, FeE 355-2

## Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	V %	Ti %	Cu %	Al %	Nb %	N %
2714	CC	CEV 0.43 <sub>max</sub>	Min	0.01	0.01	1.10	0.000	0.000	0.00	0.00	0.00	0.000	0.000	0.00	0.020	0.000	0.0000
		Pcm 0.27 <sub>max</sub>	Max	0.18	0.50	1.70	0.025	0.010	0.30	0.50	0.08	0.100	0.030	0.30	-	0.050	0.0120

## Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A <sub>5</sub> [%]	Impact (ISO-V) strength <sub>min</sub>
2714	+AR	Round bar	25 < 35	355*	490-630	22	-20 °C 40 J (long)
		Round bar	35 < 50	345*	490-630	22	-20 °C 40 J (long)
		Round bar	50 < 70	325*	490-630	22	-20 °C 40 J (long)
		Round bar	70 < 100	315*	470-610	21	-20 °C 40 J (long)
		Round bar	100 < 150	295*	450-590	21	-20 °C 40 J (long)

*R<sub>p0,2</sub> \* R<sub>eh</sub>, \*\* R<sub>el</sub>*

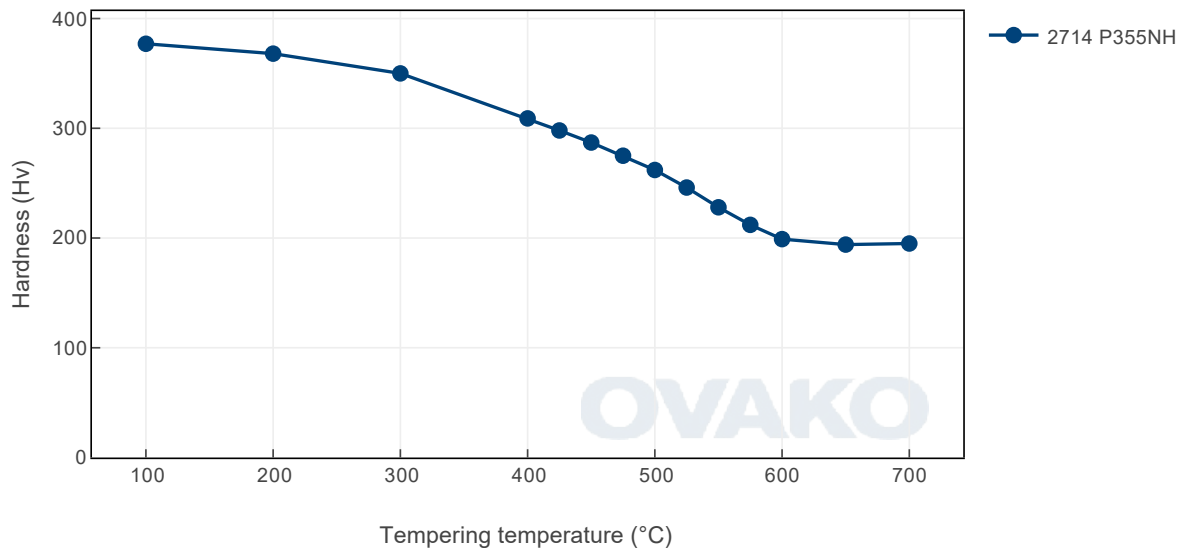
## Transformation temperatures

	Temperature °C
MS	432
AC1	717
AC3	847

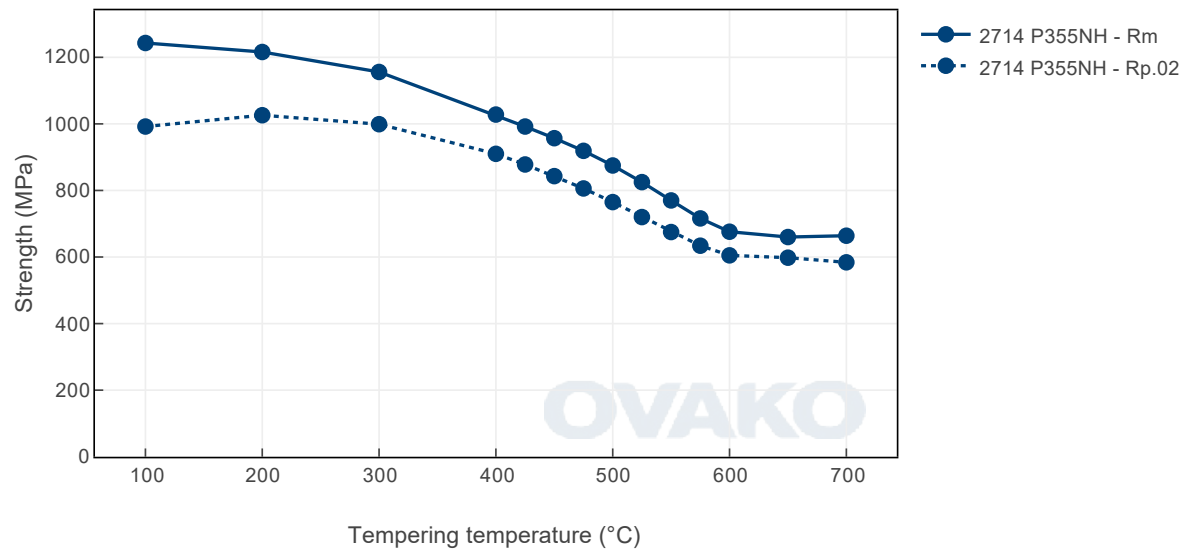
## Heat Treatment Guide generated Graphs

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.

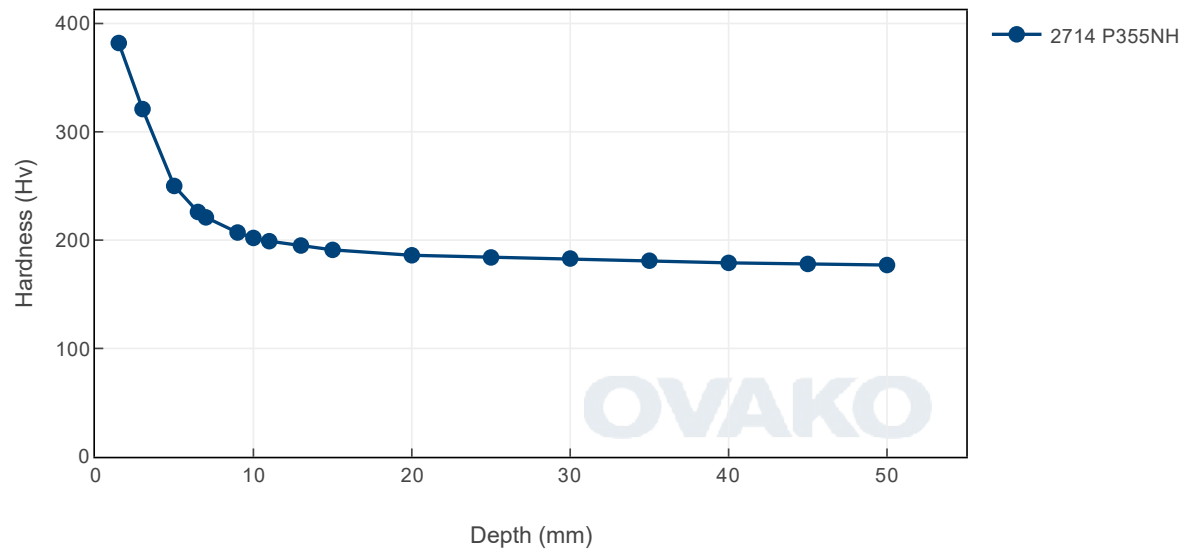
Tempering Diagram (hardness)



Tempering Diagram (strength)



# Jominy





## 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<sub>2</sub> 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
CO <sub>2</sub> e/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 (CO <sub>2</sub> e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO <sub>2</sub> e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
2714	Round bar	+AR	519	215

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/m <sup>3</sup> )
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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