MATERIAL DATA SHEET

STEEL GRADE

Last revised: Fri, 31 Jan 2025 15:17:36 GMT

OVAKO

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_{max}	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_{max}	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_5 [%]	Impact (ISO-V) $strength_{min}$
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)

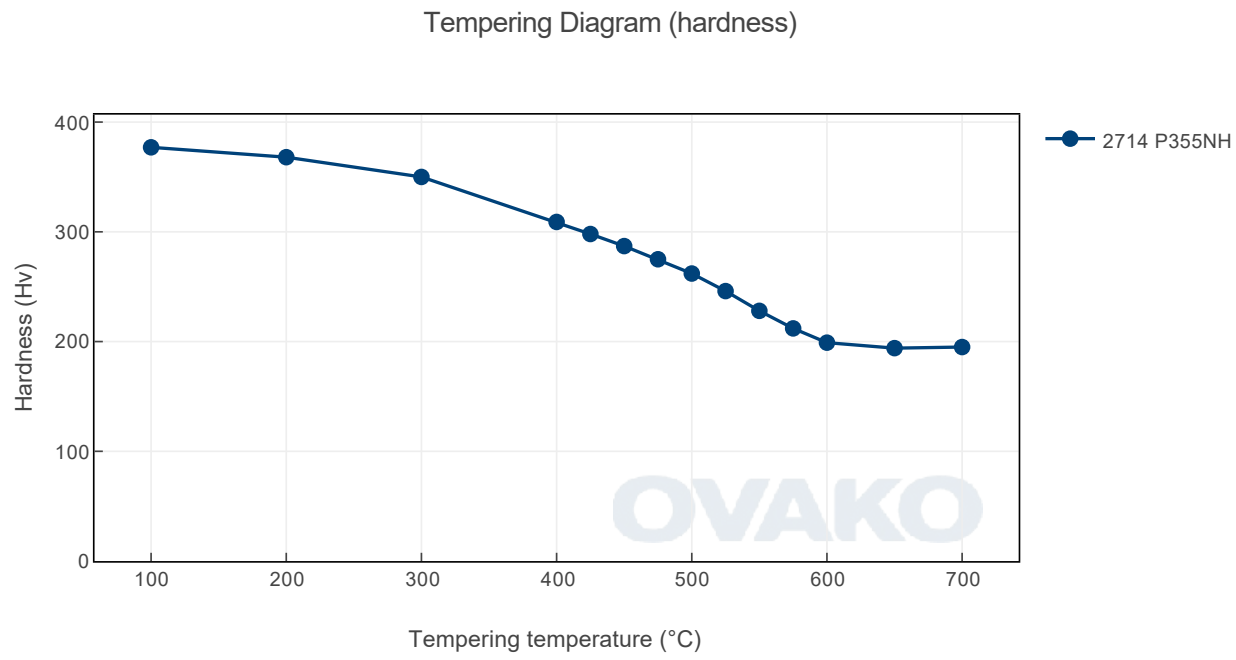
*$Rp_{0.2}$ * R_{eh}, ** R_{el}*

Transformation temperatures

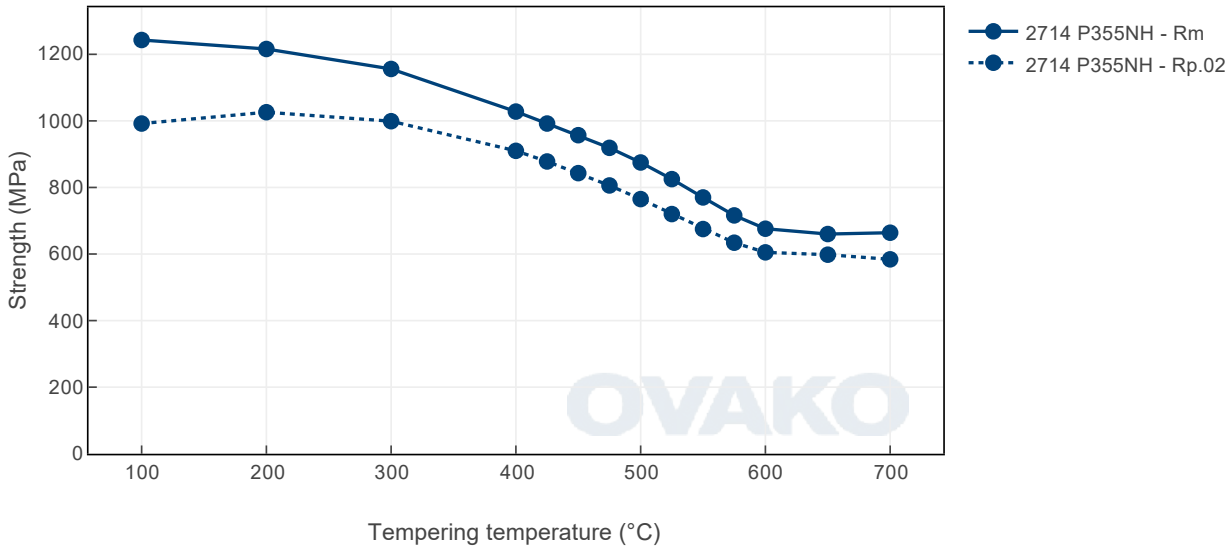
	Temperature °C
MS	432
AC1	717
AC3	847

Heat Treatment Guide generated Graphs

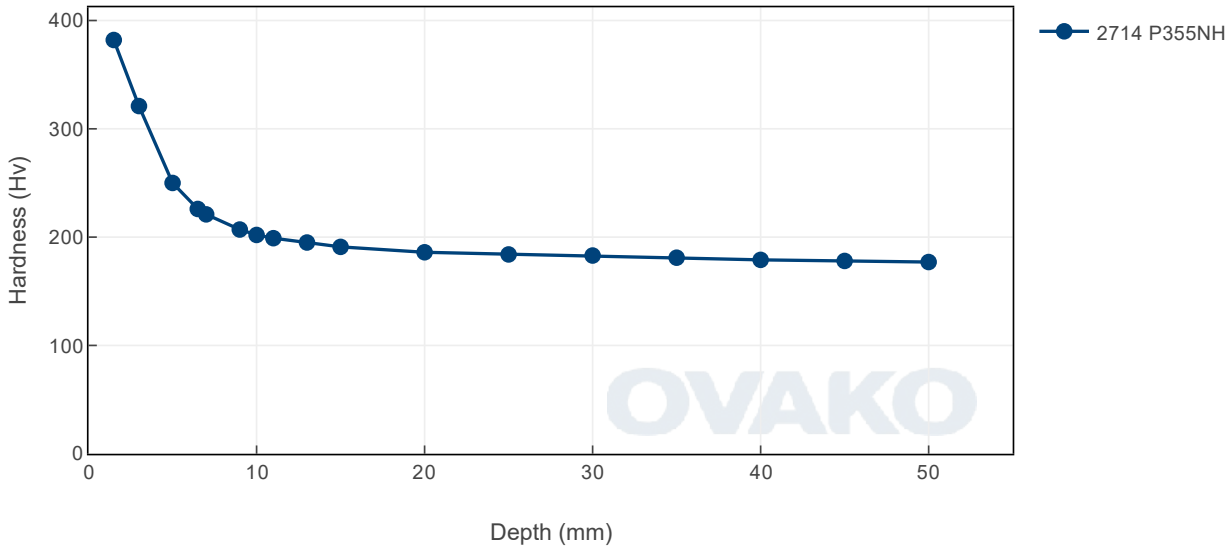
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



Tempering Diagram (strength)



Jominy


Hardness (Hv)
400
300
200
100
0
0
10
20
30
40
50
Depth (mm)
2714 P355NH
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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)
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/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/