

# 12NiCrMo13-6\* All

## General Information

12NiCrMo13-6\* or 9313 as it is also named in US standards is a case hardening steel used in forgings to eg rock drilling tools.

For additional Heat Treatment Data, please visit the Heat Treatment Guide.

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

## Similar designations

AISI9313

## Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Cu %
254R	IC	CEV0.8 <sub>max</sub>	Mn	0.11	0.20	0.65	-	-	1.40	3.15	0.10	-
		Pcm 0.33 <sub>max</sub>	Max	0.15	0.26	0.75	0.010	0.005	1.50	3.35	0.14	0.25
4708	CC	CEV0.76 <sub>max</sub>	Mn	0.11	0.20	0.60	-	-	1.35	3.15	0.10	-
		Pcm 0.3 <sub>max</sub>	Max	0.14	0.35	0.70	0.015	0.015	1.45	3.35	0.14	0.25

## Mechanical Properties

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### Variant

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$R_{p0.2}$  \*  $R_{eh}$ , \*\*  $R_{el}$

### Transformation temperatures

	Temperature °C
MS	386
AC1	693
AC3	806

## 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

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