

# CREEP RESISTANT STEELS

## Available Product Shapes

Ground Flat
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## Product Description

Highly stressed turbine blades.

## Properties

Creep resisting steel, hardened and tempered. Usual upper temperature limit for continuous operating at 580°C.

Material designation	
~1.4913	SEL
~1.4914	
X19CrMoNbVN11-1	EN
403Cb+	AISI

## Chemical composition

C	Si	Mn	Cr	Mo	Ni	V	Nb	B	N
0.17	0.35	0.70	10.80	0.85	0.55	0.25	0.45	0.005	0.05

## Physical Properties at 20°C / 68°F

Density	7.7 / 0.28	[kg/dm <sup>3</sup> / lb/in <sup>3</sup> ]
Thermal conductivity	30 / 17.33	[W/(m.K) / BTU (IT) ft/hr/ft <sup>2</sup> /F]
Spec. electrical resistance	0.6 / <0.001	[Ohm.mm <sup>2</sup> /m / Ohm.inch <sup>2</sup> /ft]
Modulus of elasticity	216 / 31.33	[10 <sup>3</sup> N/mm <sup>2</sup> / 10 <sup>3</sup> ksi]

## Thermal Expansions

Temperature (°C / °F)	100 / 212	200 / 392	300 / 572	400 / 752	500 / 932	600 / 1112
Thermal expansion (10 <sup>-6</sup> m/(m.K) / 10 <sup>-6</sup> inch/(inch.F))	10.5 / 5.833	11 / 6.111	11.5 / 6.389	12 / 6.667	12.3 / 6.833	12.5 / 6.944

For more information see [www.voestalpine.com/boehler-edelstahl](http://www.voestalpine.com/boehler-edelstahl)

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ONE STEP AHEAD.