

# CREEP RESISTANT STEELS

## Available Product Variants

Plates

Open Die Forgings

## Product Description

Components featuring elevated high temperature strength for use in thermal engines, such as turbine blades and turbine discs.

## Process Melting

VID

## Applications

- > Blades & Shafts for Turbines and Compressors
- > Fasteners, Bolts, Nuts
- > Other Power Generation Components
- > Steam Valves

## Technical data

Material designation		Standards	
X19	Market grade	E10	ASTM
1.4913	SEL	S150	BS
X19CrMoNbVN11-1	EN		

## Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	Ni	V	Nb	N
0.17	0.35	0.7	10.6	0.6	0.4	0.25	0.3	0.07

## Thermal Expansions between 20°C | 68°F and ...

Temperature (°C)	100	200	300	400	500	600
Thermal expansion (10 <sup>-6</sup> m/(m.K))	10.5	11	11.5	12	12.3	12.5

If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

**voestalpine BÖHLER Edelstahl GmbH & Co KG**  
 Mariazeller Straße 25  
 8605 Kapfenberg, AT  
 T. +43/50304/20-0  
 E. [info@bohler-edelstahl.at](mailto:info@bohler-edelstahl.at)  
<https://www.voestalpine.com/bohler-edelstahl/de/>

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ONE STEP AHEAD.