

CREEP RESISTANT STEELS

Application Segments

Land Based Turbines

Available Product Variants

Long Products*

* Presented data refer exclusively to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Product Description

This specification covers a corrosion and heat resistant steel in the form of bars, wire, forgings and forging stock. It is an austenitic, precipitation hardenable, iron-nickel-chromium-molybdenum-titanium steel of ESR quality. Alloying elements of aluminium and titanium allow this material to undergo precipitation hardening (ageing) through the formation of intermetallic phases. The addition of molybdenum increases the mechanical properties and resistance to creep at high temperatures. These products have been typically used for parts in power generation engineering i.e. gas turbines requiring moderate strength up to 704 °C (1300 °F) and oxidation resistance up to 816 °C (1500 °F), but their use is not limited to such applications.

Process Melting

Airmelted + ESR

Applications

- > Mechanical Engineering
- > Blades & Shafts for Turbines and Compressors
- > Steam Valves
- > Other Power Generation Components
- > Fasteners, Bolts, Nuts
- > Tubular Products, Flanges, Fittings
- > Power Generation (Gas/Steam/Nuclear)
- > Shafts

Technical data

Material designation		Standards	
Alloy 286	Market grade	VdTÜV WB435/3	Others
1.4980	SEL		
X6NiCrTiMoVB25-15-2	EN		
S66286	UNS		

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	V	Ti	B
max. 0.080	max. 1.000	max. 2.000	max. 0.030	max. 0.030	13.500 to 16.000	1.000 to 1.500	24.000 to 27.000	0.100 to 0.500	1.900 to 2.300	0.003 to 0.010

Refers to VdTÜV 435/3

Delivery condition**Solution annealed + precipitation hardened**

Tensile Strength (MPa)	900 to 1,200
Yield Strength (MPa)	min. 600

Round Bars and Wire Rod (if any)

		Diameter mm	
		ROLLED	
12.50	-	130.00	
		FORGED	
130.10	-	254.00	

More information regarding MOQ, lengths and tolerances upon request. Flat bar on request.

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.