CREEP RESISTANT STEELS

Application Segments

Aerospace | Automotive

Available Product Variants

Long Products* | Semi-Finished Products / Billet | Plates | Open Die Forgings

* 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-molydenum-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

- Other Aerospace Components
- Fasteners, Bolts, Nuts
- Structural parts (Aerospace)
- Shafts for Mechanical Engineering
- Other Automotive Components (Sealing Rings, Sensors, Steering Systems)
- Turbo Chargers

Technical data

Material designation	
A286	Market grade
1.4943	SEL
1.4944	
X4NiCrTiMoV26-15	EN
X6NiCrTiMoV26-15	
S66286	UNS

Standards	
5732	AMS
5731	

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	V	Cu	Co	Ti	Al	B
max. 0.08	max. 1.00	max. 2.00	max. 0.025	max. 0.025	13.50 to 16.00	1.00 to 1.50	24.00 to 27.00	0.10 to 0.50	max. 0.50	max. 1.00	1.90 to 2.35	max. 0.35	0.003 to 0.010

Refers to AMS 5732

Delivery condition

Solution annealed + precipitation hardened	
Hardness (HB)	248 to 341
Tensile Strength (MPa)	min. 896
Yield Strength (MPa)	min. 586

Round Bars and Wire Rod (if any)

Diameter mm			MOQ ex mill kg	Length m			Tolerance
ROLLED							
12.50	-	55.00	1,150	3.00	-	4.00	IT h/k 11
55.01	-	120.00	2,350	3.00	-	4.00	IT h/k 11
120.01	-	130.00	2,350	3.00	-	5.00	IT h/k 14
FORGED							
130.01	-	152.40	1,260	2.00	-	5.00	IT h/k 14

Flat Bars

Width mm			Thickness mm			MOQ ex mill kg	Length m			Tolerance
ROLLED										
15.00	-	121.00	10.00	-	86.00	1,250	3.00	-	4.00	LN 1017
120.00	-	150.00	25.00	-	85.00	2,650	3.00	-	4.00	LN 1017
150.00	-	275.00	20.00	-	100.00	2,550	3.00	-	4.00	LN 1017
275.00	-	330.00	25.00	-	80.00	2,650	3.00	-	4.00	LN 1017
FORGED										
100.00	-	392.00	50.00	-	250.00	3,800	2.00	-	5.00	

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
https://www.voestalpine.com/bohler-edelstahl/de/

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