

Alleima® 7RE10

Billets

Datasheet

Alleima® 7RE10 is an austenitic, stainless chromium-nickel steel of the 25/20 type. It has good resistance to carburization, sulfidation and oxidation combined with moderate creep strength and structural stability. Maximum service temperature in air is 1100°C (2010°F).

Standards

- ASTM: 310S, 310H
- UNS: S31008, S31009
- EN Number: 1.4845
- W.Nr.: 1.4845
- DIN: X12 CrNi 25 21
- SS: 2361
- AFNOR: Z12CN25-20
- BS: 310S31

Product standards

ASTM A-314
Suitable for production of flanges etc. acc. to ASTM A-182

Certificates

Status according to EN 10 204/3.1

Chemical composition (nominal) %

C	Si	Mn	P	S	Cr	Ni	Mo	Others
0.05	0.5	1.3	≤0.030	≤0.010	24.5	21	-	-

Forms of supply

Sizes and tolerances

Round-cornered square, as well as round billets, are produced in a wide range of sizes according to the following tables. Larger sizes offered on request.

Surface conditions

Square billets

Unground, spot ground or fully ground condition.

Round billets

Peel turned or black condition.

Square billets

Size	Tolerance	Length
mm	mm	m
80	+/-2	4 - 6.3
100, 114, 126, 140, 150	+/-3	4 - 6.3
160, 180, 195, 200	+/-4	4 - 6.3
>200 - 350	+/-5	3 - 5.3

Sizes and tolerances apply to the rolled/forged condition.

Peel turned round billets

Size	Tolerance	Length
mm	mm	m
75 - 200 (5 mm interval)	+/-1	max 10
>200 - 450	+/-3	3 - 8

Unground round billets

Size	Tolerance	Length
mm	mm	m
77 - 112 (5 mm interval)	+/-2	max 10
124, 134	+/-2	max 10
127, 147, 157	+/-2	max 10
142, 152, 163	+/-2	max 10
168, 178, 188	+/-2	max 10
183, 193	+/-2	max 10

Other products

- Hollow bar

Mechanical properties

At 20°C

Metric units

Proof strength		Tensile strength	Elong.		Hardness
R _{p0.2} ^a	R _{p1.0} ^a	R _m	A ^b	A ₂ "	HRB
MPa	MPa	MPa	%	%	
≥220	≥240	515-750	≥35	≥35	≤90

At 68°F

Imperial units

Proof strength		Tensile strength	Elong.		Hardness
R _{p0.2} ^a	R _{p1.0} ^a	R _m	A ^b	A ₂ "	HRB
ksi	ksi	ksi	%	%	
≥32	≥35	75-109	≥35	≥35	≤90

1 MPa = 1 N/mm²

a) R_{p0.2} and R_{p1.0} correspond to 0.2% offset and 1.0% offset yield strength, respectively.

b) Based on $L_0 = 5.65 \sqrt{S_0}$ where L_0 is the original gauge length and S_0 the original cross-section area.

At high temperatures

Metric units

Temperature	Proof strength	
	R _{p0.2}	R _{p1.0}
	MPa	MPa
	min	min
50	200	230
100	190	220
150	180	210
200	170	200
250	165	195
300	160	190
350	155	185
400	150	180

450	145	175
500	140	170
550	135	165
600	130	160
650	125	155
700	120	150

Disclaimer: Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for Alleima materials.