

Alleima® 6RA11

Billets

Datasheet

Alleima® 6RA11 is an austenitic stainless free-machining steel with addition of sulphur.

Standards

- ASTM: 303
- UNS: S30300
- EN Number: 1.4305
- W.Nr.: 1.4305

Product standards

- EN 10088-3
- ASTM A-314

Certificates

Status according to EN 10 204 3.1

Chemical composition (nominal) %

C	Si	Mn	P	S	Cr	Ni
0.05	0.4	1.8	≤0.045	0.3	18	9

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

Testing is performed on separately solution annealed and quenched test piece.

The following figures apply on material in the solution annealed and quenched condition.

At 20°C (68°F)

Metric units

Proof strength		Tensile strength	Elong	Contr.	HB
$R_{p0.2}^{a)}$	$R_{p1.0}^{a)}$	R_m	$A^{b)}$	Z	
MPa	MPa	MPa	%	%	
					approx.
≥205	≥240	515-690	≥35	≥50	170

Imperial units

Imperial units

Proof strength		Tensile strength	Elong	Contr.	HB
$R_{p0.2}^{a)}$	$R_{p1.0}^{a)}$	R_m	$A^{b)}$	Z	
ksi	ksi	ksi	%	%	
					approx.
≥29.5	≥35	74.5-100	≥35	≥50	170

1 MPa = 1 N/mm²

a) $R_{p0.2}$ and $R_{p1.0}$ corresponds 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.

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.