Alleima® 8R40
Billets
Datasheet

Alleima® 8R40 is an austenitic, niobium-stabilized stainless chromium-nickel steel for use at temperatures up to 850°C (1560°F).

Standards

- ASTM: 347, 347H
- UNS: S34700, S34709
- EN Number: 1.4550
- EN Name: X6CrNiMo18-10
- W.Nr.: 1.4550
- SS: 2338

Product standards

- EN 10088-3
- ASTM A-314

Suitable for production of flanges etc. according to ASTM A-182 Grade F347/347H.

Certificates

Status according to EN 10 204 3.1

Chemical composition (nominal) %

C	Si	Mn	P	S	Cr	Ni	Mo	Others
0.06	0.6	1.7	≤0.030	≤0.015	17.5	11	-	Nb>10xC

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

Datasheet last updated 5/9/2025 6:38:06 AM (supersedes all previous editions)

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 to material in the solution annealed and quenched condition.

Datasheet last updated 5/9/2025 6:38:06 AM (supersedes all previous editions)

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	%	%	
≥210	≥245	515-700	≥40	≥50	≤215

Imperial units

Proof strength		Tensile strength	Elong.	Contr.	HB
$R_{p0.2}$ [a)]	$R_{p1.0}$ [a)]	R_m	A [b)]	Z	
MPa	MPa	MPa	%	%	
≥30.5	≥35.5	75-101.5	≥40	≥50	≤215

1 MPa = 1 N/mm^2
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.

Impact strength

Due to its austenitic microstructure, Alleima 8R40 has very good impact strength both at room temperature and at cryogenic temperatures.

At high temperatures

Metric units

Temperature	Proof strength		Tensile strength
	$R_{p.02}$	$R_{p1.0}$	R_m
°C	MPa	MPa	MPa
	min.	min.	min.
100	175	205	440
200	155	185	390
300	135	167	375
400	125	156	375
500	119	149	360

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

Datasheet last updated 5/9/2025 6:38:06 AM (supersedes all previous editions)

in technical data without notice. This datasheet is only valid for Alleima materials.

Datasheet last updated 5/9/2025 6:38:06 AM (supersedes all previous editions)