

Alleima® 6LR62

Tube and pipe, seamless

Datasheet

Alleima® 6LR62 is a molybdenum-alloyed austenitic stainless steel.

Standards

- ASTM: TP316, TP316H
- UNS: S31600, S31609
- EN Number: 1.4401
- EN Name: X5CrNiMo17-12-2
- W.Nr.: 1.4401
- AFNOR: Z6ZND17-12

Chemical composition (nominal)

Chemical composition (nominal) %

C	Si	Mn	P	S	Cr	Ni	Mo
0.05	0.6	1.5	≤0.040	≤0.015	17	11.5	2.1

Mechanical properties

At 20°C (68°F)

Proof strength		Tensile strength		Elong.
$R_{p0.2}^a)$		R_m		$A^{b)}$
MPa	ksi	MPa	ksi	%
≥205	≥30	515-790	75-115	≥45

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}	
°C		MPa	
		min.	
50		196	
100		175	
150		158	
200		145	
250		135	
300		127	
350		120	
400		115	
450		112	
500		110	
550		108	

Imperial units

Temperature		Proof strength	
		R _{p0.2}	
°F		ksi	
		min.	
200		26	
400		21	
600		18	
800		16	
1000		16	

Creep strength

Temperature		Creep-rupture strength			
°C	°F	10 000h		100 000h	
		MPa approx.	ksi approx.	MPa approx.	ksi approx.
550	1020	255	37.0	177	25.7
575	1065	214	31.0	137	19.9
600	1110	172	24.9	108	15.7

625	1155	137	19.9	86	12.5
650	1200	108	15.7	64	9.3
675	1245	83	12.0	46	6.7
700	1290	64	9.3	33	4.8
725	1335	49	7.1	25	3.9
750	1380	37	5.4	18	2.6

Welding

The weldability of Alleima® 6LR62 is good. Welding must be carried out without preheating and subsequent heat treatment is normally not required. Suitable methods of fusion welding are manual metal-arc welding (MMA/SMAW) and gas-shielded arc welding, with the TIG/GTAW method as first choice.

For Alleima® 6LR62, heat input of <2.0 kJ/mm and interpass temperature of <150°C (300°F) are recommended.

Recommended filler metals

TIG/GTAW or MIG/GMAW welding

ISO 14343 S 19 12 3 H / AWS A5.9 ER316H

MMA/SMAW welding

ISO 3581 E 19 12 2 R / AWS A5.4 E316H-17

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.