

First choice for furnace construction

Information about **1.4835** | **S30815** | **X9CrNiSiNCe 21-11-2** | **253MA®**

Material 1.4835 is an **austenitic, rust-proof and heat-resistant chromium-nickel stainless steel** for the high-temperature range. It is essentially similar to grade 1.4828, but has a higher nitrogen content and is characterised by the addition of cerium (rare-earth metal). It exhibits very good scaling resistance in dry air at temperatures up to 1150°C and has good mechanical properties.

The standard heat treatment state of material 1.4835 is the **solution-annealed state**. The material is not magnetic in this state. In cold-finished rods and wires, the formation of strain-induced martensite can result in low magnetisation. Increase in strength can be achieved only by work-hardening deformation.

Due to its high nitrogen and carbon content, material 1.4835 has low resistance to oxidising and sulphur-containing gases.



ROUND STEEL

AVAILABLE DIMENSIONS

30, 40, 50, 60, 70, 80, 90, 100, 125 and 150 mm



APPLICATIONS

- (Industrial) furnace construction
- Heat treatment plants of the metal industry
- Petroleum plants / petrochemicals
- Accessories for hardening plants
- Cement industry
- Chain industry
- Apparatus construction / power plant construction

WELDING

Material 1.4835 can be welded easily using common welding methods such as TIG, MIG, PAW or SAW. If several layers are welded, the material should cool down to approx. 150°C before welding the next layer. Grade 1.4842 is suitable as a welding filler.

MACHINING

Due to the work-hardening tendency of material 1.4835, a low cutting speed should be selected. If possible, the cutting tool should be kept engaged constantly.

MECHANICAL CHARACTERISTICS AT INCREASED TEMPERATURES

Strength characteristic	Delivery condition	Temperature °C				
		100	200	300	400	500
Rp0.2	solution annealed	≥230	≥185	≥170	≥160	≥150
Rm	solution annealed	≥585	≥545	≥535	≥530	≥495

MECHANICAL CHARACTERISTICS AT ROOM TEMPERATURES

Stated values apply to steel bars up to max. 160 mm
(EN 10095)

Yield strength Rp0.2 (N/mm²): min. 310	Tensile strength Rm (N/mm²): 650 - 850
Yield point Rp1.0 (N/mm²): min. 350	Elongation at break A5 (%): min. 40

HEAT TREATMENT

Solution annealing: 1020 - 1120 °C	Stress relief: 900 °C
Hot forming: 900 - 1150 °C	Cooling: air or water

CHEMICAL ANALYSIS (EN 10095)

chemical element	1.4835	
	min.	max.
C	0.05	0.12
Si	1.40	2.5
Mn	0	1.00
P	0	0.045
S	0	0.015
Cr	20.0	22.0
Ni	10.0	12.0
N	0.12	0.2
Ce	0.03	0.08

STAPPERT Sverige AB

Gamla Slätthultsvägen 3 · 34334 Älmhult · Sverige
T +46 476 48550 · F +46 476 48560

aelmhult@stappert.biz
sverige.stappert.biz



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INOX INTELLIGENCE.