SINOXX 4301, 4307, 4948

AUSTENITIC STAINLESS STEELS

SINOXX 4301, **SINOXX 4307** and **SINOXX 4948** are the most widely used of the austenitic stainless steel supplied into numerus industry sectors. Their mechanical properties, chemical composition, corrosion resistance and weldability provide the best all-round performance stainless steels at a relatively low cost. The austenitic structure gives these grades an excellent toughness.

SINOXX 4301 can be severely deep drawn without intermediate annealing. It has excellent forming and welding characteristics. SINOXX 4307 is resistant to carbide precipitation. It does not require post-weld annealing and finds extensive use in heavy gauge components where freedom of precipitations is often required. SINOXX 4948 has higher strength at elevated temperatures and is often used for structural applications at temperatures above approx. 500 °C and up to approx. 800 °C.

APPLICATIONS

- pipelines
- heat exchangers
- pressure vessels
- flanges and fittings
- processing equipment
- general construction

SPECIFICATIONS

Austenitic stainless steel grades SINOXX 4301, SINOXX 4307 and SINOXX 4948 are designated as AISI 304, 304L and 304H, UNS S30400, UNS S30403 and UNS S30409, and EN 1.4301, 1.4307 and 1.4948, respectively. They conform to the following standards:

- ASTM A 240/A240M–16
- EN 10088–2: 2015
- EN 10088–4: 2009
- EN 10028–7: 20016

CHEMICAL COMPOSITION

Typical values [wt. %]

	C	Mn	P	S	Si	Cr	Ni	Al	N
SINOXX 4301	0.035	1.60	0.035	0.0010	0.35	18.10	8.10	0.008	0.070
SINOXX 4307	0.025	1.80	0.035	0.0010	0.35	18.10	8.10	0.008	0.085
SINOXX 4948	0.050	1.70	0.030	0.0010	0.35	18.10	8.10	0.008	0.060

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AVERAGE PHYSICAL PROPERTIES FOR ALL GRADES

Density	Specific heat	Thermal conductivity	Electrical resistivity
7.9 g/cm^3	500 J/kgK*	15 W/mK*	0.73 Ωmm^2/m*

* values at 20 °C in accordance with EN 10088-1

MECHANICAL PROPERTIES

Minimum guaranteed values of mechanical properties in accordance with specified standards.

	0.2 % Yield strength min. [MPa]	Tensile strength min. [MPa]	Elongation min. [%]	Hardness max. [HB]	Impact Charpy V, 20 °C, min. [J]
SINOXX 4301	210	520	45	217	100
SINOXX 4307	200	500	45	201	100
SINOXX 4948	205	515	45	201	100

MICROSTRUCTURE

The typical microstructure of the original “18-8” austenitic stainless steel is shown in *Figure 1*. The average grain size is No. 5, in accordance with ASTM E112.

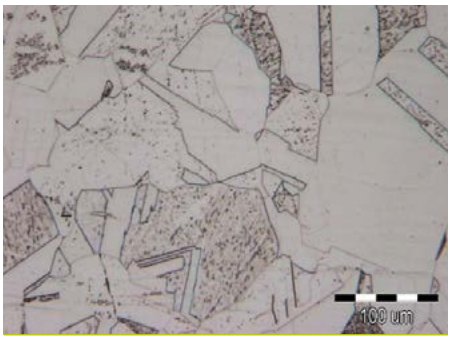

Figure 1: Austenitic microstructure

HOT FORMING

The hot forming temperature range is between 850 °C and 1200 °C (1562–2192 °F).

HEAT TREATMENT

Solution annealing at min. 1050 °C (1922 °F), followed by rapid cooling.

PICKLING

Plates are supplied in pickled condition (bright surface).

DIMENSIONS

SINOXX 4301/4307/4948	Thickness [mm]	Max. width [mm]	Max. length [mm]	Max. weight [kg]
Quarto plates	6.5–8.0 (0.26–0.31 in.)	2150 (84.65 in.)	12000 (472.44 in.)	9600 (21164 lbs)
Quarto plates	8.0–130.0 (0.31–5.11 in.)	2500 (98.42 in.)	12000 (472.44 in.)	9600 (21164 lbs)

SINOXX 4301-4307-4948-1/07-2023-EN

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