

## First Choice for the Food and Construction Industry

Material datasheet for 1.4307 | S30403 | X2CrNi 18-9 | AISI 304L

1.4307 is a **stainless austenitic** steel notable for its strong resistance against intercrystalline corrosion. It has good workability and can be polished both mechanically and electrolytically. Its low carbon content means it can substitute practically all type 1.4541 titanium-stabilised materials.

With its good processing options due to its good machining, weldability and cold forming properties, 1.4307 is enjoying increasing demand in a range of areas. It is frequently found in the food industry, construction industry, aerospace industry and the automotive industry, for example, as well as the oil and petrochemical industry.

### WELDING

The material can be welded with or without welding filler (1.4316 is recommended if one is used). Its corrosion resistance is affected by the thermal input made during welding. No heat treatment is required following welding.



### BAR STEEL

#### AVAILABLE DIMENSIONS

20, 22, 23, 24, 25, 28, 30, 32, 36, 38, 40, 42, 45, 48, 50, 51.2, 55, 56.2, 60, 61.2, 65, 66.2, 70, 71.4, 75, 76.4, 80, 81.4, 85, 86.4, 90, 91.4, 95, 96.4, 100, 102, 105, 107, 110, 112, 115, 117, 120, 122, 125, 130, 135, 140, 145, 150, 155, 160, 165, 170, 175, 180, 185, 190, 195, 200, 210, 220, 230, 240, 250, 260, 270, 280, 285, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 400, 410, 425, 450, 475, 500, 525, 550 and 575 mm



#### APPLICATIONS

- Construction industry
- Electronic equipment
- Automotive industry
- Food industry
- Chemical industry
- Decorative purposes and kitchen fittings
- Oil industry / petrochemical industrial
- Mechanical engineering, aerospace industry

#### MACHINING

The absence of titanium and resulting precipitation means that 1.4307 has good machinability, which is reflected in higher tool speeds and longer tool life.

## MECHANICAL PROPERTIES UNDER HIGH TEMPERATURES

Strength characteristic	Delivery condition	Temperature °C							
		100	150	200	250	300	350	400	450
Rp 0.2	solution annealed	≥145	≥130	≥118	≥108	≥100	≥94	≥89	≥85
Rp 1.0	solution annealed	≥180	≥160	≥145	≥135	≥127	≥121	≥116	≥112

## MECHANICAL PROPERTIES AT ROOM TEMPERATURE

Stated values apply to bar steel up to 160 mm max.  
(EN 10088-3)

<b>Yield strength Rp0.2 (N/mm<sup>2</sup>):</b> at least 175	<b>Elongation at fracture A5 (%):</b> longitudinal: min. 45
<b>Yield strength Rp1.0 (N/mm<sup>2</sup>):</b> at least 210	<b>Impact value (ISO-V) J:</b> longitudinal: min. 100
<b>Tensile strength Rm (N/mm<sup>2</sup>):</b> 500 - 700	

## CHEMICAL ANALYSIS

Chem. element	1.4307	
	min.	max.
C	-	0.03
Si	-	1.0
Mn	-	20
P	-	0.045
S	-	0.03
Cr	17.5	19.5
Ni	8.0	10.5
N	-	0.1

## HEAT TREATMENT

<b>Solution annealing:</b> 1000 - 1100 °C	<b>Cooling:</b> Air or water
<b>Hot forming:</b> 900 - 1200 °C	

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