

1.4307 Stainless Steel Technical Specification

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- EN Designation: 1.4307
- EN Standard: EN 10088-1 / EN 10028-7
- Name: X2CrNi18-9
- AISI Equivalent: 304L
- GOST Equivalent: Closest to 03X18H11 (low-C version of 08X18H10)

Chemical Composition (EN 10088-1)

Element	Content (%)
C (Carbon)	≤ 0.030
Si (Silicon)	≤ 1.00
Mn (Manganese)	≤ 2.00
P (Phosphorus)	≤ 0.045
S (Sulfur)	≤ 0.015
Cr (Chromium)	17.5 - 19.5
Ni (Nickel)	8.0 - 10.5
Fe (Iron)	Balance

Mechanical Properties (Annealed Condition)

Property	Value
Tensile Strength (Rm)	500 - 700 MPa
Yield Strength (Rp0.2)	≥ 190 MPa
Elongation (A5)	$\geq 40\%$
Hardness (HB)	≤ 215 HB
Density	~ 7.9 g/cm ³
Magnetism	Non-magnetic in annealed state

Physical Properties

Property	Value
Thermal Conductivity	16.2 W/m • K at 20° C
Electrical Resistivity	0.73 $\mu\Omega \cdot m$
Thermal Expansion	$\sim 17.2 \times 10^{-6}$ /K (20 – 100° C)
Specific Heat Capacity	500 J/kg • K
Melting Point	1400 – 1450° C

Corrosion Resistance

- Excellent corrosion resistance in **mildly aggressive environments**.
- **Improved weldability** and resistance to intergranular corrosion compared to 1.4301/304.
- Suitable for use **without post-weld heat treatment**.

Applications

- Welded tanks and pipes in food and beverage industry
- Heat exchangers and condensers
- Architectural components
- Piping and tubing in chemical and pharmaceutical industries
- Cleanroom and hygienic environments
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Applications

- Seamless & welded **pipes and tubes**
- Cold and hot rolled **sheets and plates**
- Bars, rods, and wires
- Fittings and flanges

Material Standards (Chemical & Mechanical Properties)

Standard	Description
EN 10088-1	Stainless steels - List of stainless steel grades
EN 10088-2	Technical delivery conditions for flat products
EN 10088-3	Technical delivery conditions for long products
EN 10028-7	Stainless steels for pressure purposes (flat products)
EN 10272	Stainless steels for pressure purposes (bars)

Pipe & Tube Standards

Standard	Application
EN 10216-5	Seamless tubes for pressure purposes (stainless)
EN 10217-7	Welded tubes for pressure purposes (stainless)
EN 10357	Hygienic welded stainless steel tubes
ASTM A312 / A213	Seamless/welded stainless steel pipes & tubes)

• Fitting & Flange Standards

Standard	Application
EN 10253-3 / - 4	Butt-weld fittings
EN 1092-1	Flanges and their joints
ASTM A403	Wrought stainless steel fittings
EN ISO 1127	Tubes - Tolerances, dimensions, and sectional properties