

# DUPLEX AND SUPER DUPLEX STAINLESS STEELS

## Available Product Shapes

Long Products	Plates	Semi-Finished Products / Billet
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## Product Description

Components in offshore, waste water, sea water desalination and chemical plants with aggressive chloride-containing media e.g. heat exchangers, separator parts, compressor and pump components, turbine blades.

## Properties

Ferritic-austenitic stainless steel. Excellent corrosion resistance against general corrosion, stress corrosion cracking, corrosion fatigue, pitting, crevice and erosion corrosion and possessing very high mechanical strength properties. Good weldability, post weld heat treatment not necessary. Max. temperature for long periods of service: 280°C (535°F) / (300°C/570°F possible for short periods). Surface condition for optimum corrosion resistance: pickled or machined.

## Applications

- > Comp. for Chemical plants (incl. LNG, FGD, Urea, LDPE, etc.)
- > Consumer Goods - General
- > Distributors or producers of standard parts without knowledge of final applications
- > Food processing Industry
- > Oil & Gas
- > Pumps and High Pressure Components
- > Valves and Actuators
- > Wire Lines
- > Components for Recycling Industry
- > CPI (inc. LNG, Urea)
- > Fasteners, Bolts, Nuts
- > Forging Applications
- > Other Components
- > Steel Industry
- > Well Completion Tools
- > Comps. for Food processing and Animal Feed
- > Distributors for Component Applications
- > Flowlines & Connectors
- > Mechanical Engineering / Machine Building General
- > Other Oil and Gas + CPI comps.
- > Tubular Products, Flanges, Fittings
- > Wellhead, X-mas trees and Manifolds (incl. Tubing hangers), BOPs

Material designation		Standards	
1.4501	SEL	10088-3	EN ISO
S32760	UNS	A182	ASTM
X2CrNiMoCuWN25-7-4	EN	A276	
F55	AISI	A479	

## Chemical composition

C	Si	Mn	Cr	Mo	Ni	W	Cu	N
0.02	0.25	0.55	25.20	3.70	7.00	0.65	0.60	0.21

## Delivery condition

### Solution annealed

Hardness	max. 290 HB   YS: min 550MPa
Ultimate tensile strength (UTS)	min. 750 MPa

### No quality heat treatment

## Heat treatment

### Solution annealing

Temperature (°C / °F)	1100 / 2012 - 1200 / 2192
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## Physical Properties at 20°C / 68°F

Density	7.8 / 0.28	[kg/dm <sup>3</sup> / lb/in <sup>3</sup> ]
Thermal conductivity	15 / 8.67	[W/(m.K) / BTU (IT) ft/hr/ft <sup>2</sup> /F]
Specific heat	500 / 119.42	[J/(kg.K) / BTU (IT) lb/F]
Spec. electrical resistance	0.8 / <0.001	[Ohm.mm <sup>2</sup> /m / Ohm.inch <sup>2</sup> /ft]
Modulus of elasticity	200 / 29.01	[10 <sup>3</sup> N/mm <sup>2</sup> / 10 <sup>3</sup> ksi]

## Thermal Expansions

Temperature (°C / °F)	100 / 212	200 / 392	300 / 572
Thermal expansion (10 <sup>-6</sup> m/(m.K) / 10 <sup>-6</sup> inch/(inch.F))	13 / 7.222	13.5 / 7.5	14 / 7.778

For more information see [www.voestalpine.com/boehler-edelstahl](http://www.voestalpine.com/boehler-edelstahl)

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ONE STEP AHEAD.