

Chemical analysis

	C	Si	Mn	S	P	Cr	Ni	Mo	N	Cu
Min.						24.0	6.0	3.5	0.24	
Max.	0.03	0.8	1.2	0.015	0.035	26.0	8.0	4.0	0.32	0.5

PREmin=40.0

Microstructure

SAF2507 is a ferritic/austenitic stainless steel, type 25Cr duplex. The ferrite content lies between 35%-55%. It is delivered in solution annealed condition.

Comparable standard

Standard	Designation/Type
DIN	X2CrNiMoN25-7-4
EN	1.4410
ASTM	F53
UNS	S32750
NACE	S32750
NORSOK	S32750

Main features and applications

General areas of application are:

- Mechanical components requiring high strength.
- Oil and gas industry.
- Oil refining, petrochemical and gas processing.
- Desalination plants.
- Desulphurization units.

These areas take advantage of:

- High resistance to stress corrosion cracking in chloride-containing environments
- High resistance to general corrosion, pitting and crevice corrosion.
- High mechanical strength.
- High resistance to erosion corrosion and corrosion fatigue.

Process

Produced from scrap and alloys. Melting process: Electric Arc Furnace + AOD.
Forged on a free-form 1600 t hydraulic press.

Minimum mechanical properties:

Minimum test requirements for D ≤ 200 mm, as forged.

Yield strength R _{p0.2} [MPa]	Tensile strength R _m [MPa]	Fracture Elongation A [%]	Impact Charpy-V [J]	Hardness BHN [kg/mm ²]
550	750	25	45 (-46 °C)	max. 290

For other dimensions, please contact us. We will be pleased to give you additional information.

Corrosion resistance guidelines:

Method	ASTM G48 practice A (50 °C, 24h)	EN-ISO3651-2 Method C
Acceptance criteria	- No pitting detected at 20 X magnification - Weight loss < 4.0 g/m ²	No cracking*

*See EN-ISO3651-2 Method C, paragraph 7.

Heat treatment

Solution annealing, between 1040 and 1120 °C, followed by water quenching.

Weldability

SAF2507 belongs to group 10.2, Austenitic/ferritic stainless steel with Cr>24%, according to ISO/TR 15608:2005.

The weldability of SAF2507 is good.

Physical properties at room temperature (typical values)

Density, 20 °C [kg/m ³]	Relative magnetic permeability	Coefficient of thermal expansion		Specific heat, 20°C [J/(kg °C)]	Thermal conductivity [W/m °C]	Electrical resistivity [Ωmm ² /m]	Young's modulus, 20 °C [GPa]
		Range [°C]	Coefficient [K ⁻¹]				
7700	33	30 - 100	13.5·10 ⁻⁶	490	14.2	0.83	200
		30 - 200	14.0·10 ⁻⁶				
		30 - 300	14.0·10 ⁻⁶				
		30 - 400	14.5·10 ⁻⁶				

General

Stavanger Steel is qualified according to NORSOK M650 – Edition 4.

Qualified dimensions on request.