SINOXX 4410

SUPER DUPLEX STAINLESS STEEL

SINOXX 4410 is a standardized super duplex stainless steel for demanding applications which require exceptional strength and corrosion resistance. It combines high tensile and impact strength with low coefficient of thermal expansion. These properties are suitable for many structural and mechanical components.

APPLICATIONS

- offshore platforms
- high strength, corrosion resistant parts
- heat exchangers
- desalination plants
- oil and gas industry equipment

SPECIFICATIONS

Super duplex stainless steel is a designated as AISI 2507, UNS S32750 and EN 1.4410, and conforms to the following standards:

- ASTM A 240, A480
- EN 10088-2

CHEMICAL COMPOSITION

Typical values [wt. %]

	C	Mn	P	S	Si	Cr	Ni	Mo	N	Al
Min.	-	-	-	-	-	25.20	6.80	3.60	0.27	-
Max.	0.030	0.90	0.030	0.0007	0.40	25.50	7.10	3.80	0.29	0.015

PREN = (Cr%) + 3.3 (Mo%) + 16 (N%) ≥ 41

PHYSICAL PROPERTIES

Density	Specific heat	Thermal conductivity	Electrical resistivity
7.8 g/cm^3	500 J/kgK*	15 W/mK*	0.8 Ωmm/m*

* values at 20 °C according to EN 10088-1

SIJ ACRONI d.o.o.
Cesta Borisa Kidriča 44,
4270 Jesenice,
SLOVENIA, EU

+386 4 58 41 000
uprava@acroni.si
sij.acroni.si

MECHANICAL PROPERTIES

Minimum guaranteed values of mechanical test requirements, for the specified thickness range.

Thickness [mm]	0.2 % Yield strength min. [MPa]	Tensile strength min. [MPa]	Elongation min. [%]	Hardness max. [HB]	Impact Charpy V, 20 °C [J]*
9.5–25.4	550	795	20	310	200–300

* typical value

MICROSTRUCTURE

The microstructure of SINOXX 4410 is ferritic-austenitic with a ratio close to 50:50. The typical microstructure is shown in *Figure 1*.

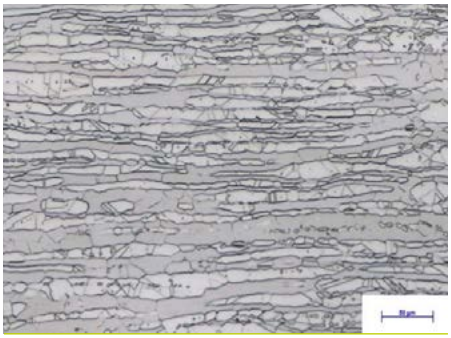

Figure 1: Ferritic-austenitic microstructure, ratio approx. 50:50

CORROSION RESISTANCE

The high chromium molybdenum content of SINOXX 4410 makes it extremely resistant to uniform corrosion. Its duplex structure provides excellent resistance to chloride stress corrosion cracking (SCC). SINOXX 4410 is also highly resistant to carbide-related intergranular corrosion.

HOT FORMING

The hot forming temperature range is between 950 °C and 1200 °C (1742–2192 °F).

HEAT TREATMENT

Solution annealing at 1100 °C (2012 °F), followed by rapid cooling.

PICKLING

Plates are supplied in pickled condition (bright surface).

DIMENSIONS

SINOXX 4410	Thickness [mm]	Max. width [mm]	Max. length [mm]	Max. weight [kg]
Quarto plates	9.5–12.7 (0.37–0.5 in.)	2000 (78.74 in.)	12000 (472.44 in.)	9600 (21164 lbs)
Quarto plates	12.7–40 (0.5–1.57 in.)	2300 (90.55 in.)	12000 (472.44 in.)	9600 (21164 lbs)

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