


SINOXX^{...} 4362

LEAN DUPLEX STAINLESS STEEL

SINOXX 4362 is a lean duplex (austenitic-ferritic) stainless steel characterized by very good resistance to stress corrosion cracking, general properties that offer design advantages, high proof strength with approximately twice the value of austenitic stainless steel, good weldability, ease of fabrication and good toughness.

APPLICATIONS

- heat exchangers
- pressure vessels
- bridges
- components for structural components
- desalination plants

SPECIFICATIONS

Lean duplex stainless steel is designated as UNS S32304 and W. Nr. 1.4362, and is produced according to the following standards:

- ASTM A240, ASTM A480
- EN 10088-1, EN 10088-2, EN 10028-7

CHEMICAL COMPOSITION

Typical values [wt. %]

	C	Mn	P	S	Si	Cr	Ni	Mo	N	Cu
Min.	-	-	-	-	-	23.0	4.1	0.2	0.10	0.1
Max.	0.030	1.4	0.030	0.0003	0.40	23.3	4.3	0.4	0.12	0.4

$PREN = (Cr\%) + 3.3 (Mo\%) + 16 (N\%) \geq 25$

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

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]*
9.0–80.0	400	630	25	290	200–300

* typical value

MICROSTRUCTURE

The microstructure of SINOXX 4362 is ferritic-austenitic with a ratio close to 50:50. The typical microstructure is shown in *Figure 1*.

CORROSION RESISTANCE

The resistance to corrosion increases with high chromium content. All duplex stainless steels, including lean grades, generally have a high chromium content.

In strongly acidic environments, non-molybdenum alloyed steels (lean duplex) are often more resistant than the molybdenum alloyed steels. The lean duplex SINOXX 4362 is an excellent alternative.

The resistance to pitting and crevice corrosion increases with the content of chromium, molybdenum and nitrogen. The value for pitting resistant equivalent number (PREN) is min. 25.

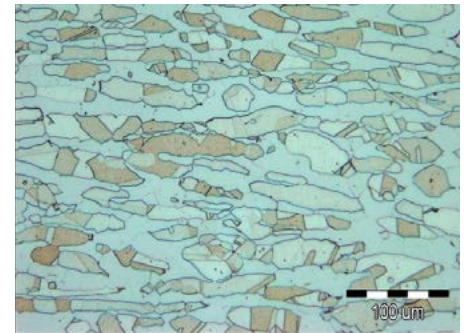


Figure 1: Ferritic-austenitic microstructure, ratio approx. 50:50

HOT FORMING

The hot forming temperature range is between 950 °C and 1150 °C (1742–2102 °F).

HEAT TREATMENT

Solution annealing at 1000 °C (1832 °F), followed by rapid cooling.

PICKLING

Plates are supplied in pickled condition (bright surface).

DIMENSIONS

SINOXX 4362	Thickness [mm]	Max. width [mm]	Max. length [mm]	Max. weight [kg]
Quarto plates	9.0–12.7 (0.35–0.5 in.)	2000 (78.74 in.)	12000 (472.44 in.)	9600 (21164 lbs)
Quarto plates	12.7–80.0 (0.5–3.15 in.)	2500 (98.42 in.)	12000 (472.44 in.)	9600 (21164 lbs)

The information and data in this product data sheet are intended for informative purpose only and may be revised at any time without notice. Presented typical properties of the materials are described only to help readers make their own evaluations and decisions. They are not guaranteed.