

# SINOXX<sup>...</sup> 4006

## MARTENSITIC STAINLESS STEEL

**SINOXX 4006** is a martensitic stainless steel characterized by high mechanical properties after heat treatment, superior wear resistance, adequate corrosion resistant and good weldability with recommended preheating.

### APPLICATIONS

- production of steam turbine blades
- components for water pumps
- hydraulic press valves
- components working in contact with water and steams
- hydropower industries

### SPECIFICATIONS

Martensitic stainless steel is designated as AISI 410, UNS S41000 and EN 1.4006, and conforms to the following standards:

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

### CHEMICAL COMPOSITION

Typical values in the range [wt. %]

	C	Mn	P	S	Si	Cr	Ni	Mo	N	Cu
Min.	-	-	-	-	-	11.8	-	-	-	-
Max.	0.135	0.6	0.040	0.005	0.50	12.2	0.5	0.50	0.03	0.3

### PHYSICAL PROPERTIES

Density	Specific heat	Thermal conductivity	Electrical resistivity
7.7 g/cm <sup>3</sup>	460 J/kgK*	30 W/mK*	0.6 Ωmm/m*

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

### MECHANICAL PROPERTIES AT ROOM TEMPERATURE IN ANNEALED CONDITION

Guaranteed values of mechanical test requirements for the specified thickness range.

Thickness [mm]	0.2 % Yield strength min. [MPa]	Tensile strength max. [MPa]	Elongation min. [%]	Hardness max. [HRB]
8.0–101.6	-	600	20	90

## MECHANICAL PROPERTIES AT ROOM TEMPERATURE IN QT550

Guaranteed values of mechanical test requirements for the specified thickness range.

Thickness [mm]	0.2 % Yield strength min. [MPa]	Tensile strength [MPa]	Elongation min. [%]	Hardness max. [HB]
8.0–101.6	400	550–750	15	-

## MECHANICAL PROPERTIES AT ROOM TEMPERATURE IN QT650

Guaranteed values of mechanical test requirements for the specified thickness range.

Thickness [mm]	0.2 % Yield strength min. [MPa]	Tensile strength [MPa]	Elongation min. [%]	Hardness max. [HB]
8.0–101.6	450	650–850	12	-

## MICROSTRUCTURE

The microstructure of SINOXX 4006 in annealed condition is ferritic with chromium carbides. Typical microstructure is shown in *Figure 1*.

## HOT FORMING

The hot forming temperature range is between 1100 °C and 800 °C (2012–1472 °F).

## HEAT TREATMENT

SINOXX 4006 is annealed at 800 °C. In the QT condition, SINOXX 4006 is quenched at 980 °C. The tempering treatment is performed in the 690–770 °C temperature range, depending on the QT condition.

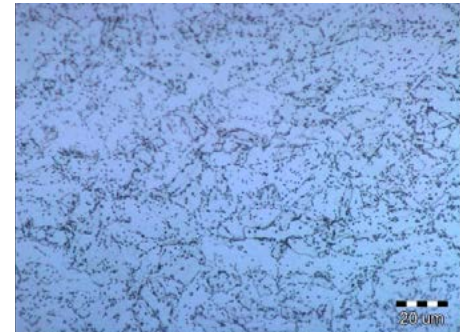


Figure 1: Ferritic microstructure with chromium carbides

## PICKLING

Plates are supplied in non-pickled condition.

## DIMENSIONS

SINOXX 4006	Thickness [mm]	Width [mm]	Length [mm]	Max. weight [kg]
Quarto plates	8–101.6 (0.31–4.0 in.)	2200 (86.61 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.