



SINOXX E770 Steel

Designation by Standards

Brand Name	Ravne	Mat. No.	DIN	EN	AISI/SAE
SINOXX E770	PK3NI	1.4021	X20Cr13	-	~ 410

Chemical Composition (in weight %)

C	Si	Mn	Cr	Mo	Ni	V	W	Others
0.21	0.35	0.60	13.00	-	0.60	-	-	-

Description

Stainless steel. Heat treatable chromium steel.

Applications

Machine components, valve and pump parts, cutlery, surgical instruments, steam turbine blades, small arms, sport articles, hand tools.

Physical properties (average values) at ambient temperature

Modulus of elasticity [GPa]: 215

Density [g/cm^3]: 7.70

Thermal conductivity [W/m.K]: 30

Electric resistivity [$\text{Ohm mm}^2/\text{m}$]: 0.60

Specific heat capacity [J/kg x K]: 460

Magnetizable: Yes

Soft Annealing

Annealing semi finished products: 745-825°C + air.

Annealing plates and strips: 730-790°C + air.

Stress Relieving

650-750°C or below last tempering temperature.

Hardening

Hardening semi finished products: 950-1050°C -> oil/air + 650-750°C.

Hardening semi finished products: 950-1050°C -> oil/air + 600-700°C.

Hardening plates and strips: 950-1050°C -> oil/air + 200-350°C.

Hardening plates and strips: 950-1010°C -> oil/air + 700-780°C.

Hardening plates and strips: 950-1010°C -> oil/air + 620-700°C.

Tempering

See the bellow diagrams.

Tempering Diagram

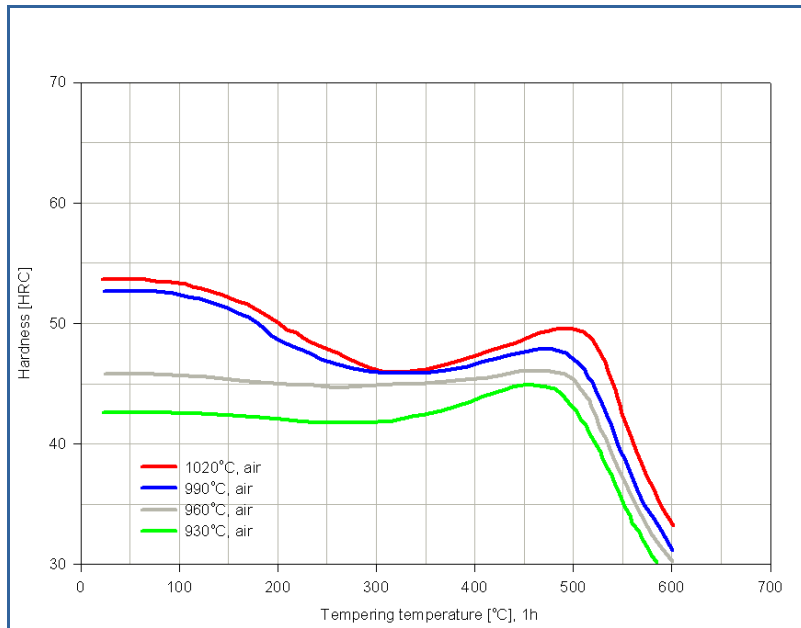
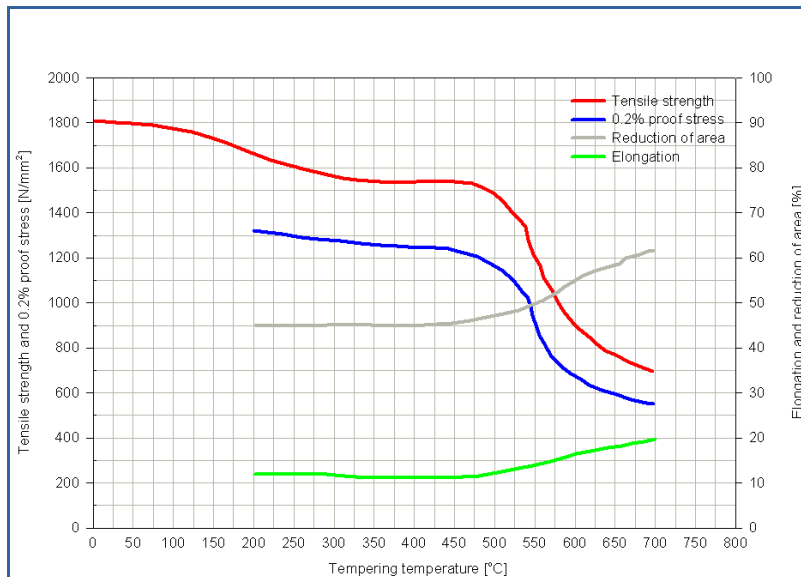


Diagram Tempering Temperature - Mechanical Properties



Forging

Hot forming temperature: 1100-800°C, slow cooling.

Machinability

No data.

Welding

Conditional weldable with TIG, MIG, arc welding and resistance welding. Related filler metals: for example 1.4009; 1.4302; 1.4502; 1.4551; 2.4806. Preheating 300-400°C. After cooling below Ms (120°C) consecutively hardening and tempering or tempering.

Forms manufactured: Please see the [Dimensional Sales Program](#).

Disclaimer

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