



INTERNATIONAL TOOL STEEL

The World's Finest Tool Steel

ITS 420 STAINLESS

PRODUCT INFORMATION

PROCESSING

This material can be heat treated to achieve high strength values due to its high C content.

Heat tints or scale from heat treatment reduce corrosion resistance and should be removed chemically (e.g. pickling baths or pickling pastes) or mechanically (e.g. by grinding or blasting with glass beads or iron- and sulfur-free quartz sand).

Machining is comparable to that of an unalloyed structural steel.
Tools should be made of good quality high-speed steel or carbide.
ITS 420 Stainless can be polished.

APPLICATIONS

ITS 420 Stainless is used for parts which are subject to wear, e.g. blades for table and kitchen knives, penknife blades and meat knives as well as for caliper gauges, surgical instruments, brake discs and press plates.

CHEMICAL ANALYSIS (% BY WEIGHT)	
Carbon	0.43 min/0.50 max
Manganese	0.50 min/1.0 max
Phosphorus	---
Sulfur	---
Silicon	---
Chromium	12.5 min/14.5 max
Vanadium	---
Tungsten	---
Molybdenum	---
Cobalt	---

MECHANICAL PROPERTIES

Dimensions Range	R _m Tensile strength N/mm ²	A ₅ Elongation %	A ₈₀ Elongation %	Hardness HB
Cold Rolled Strip s +/- 8mm Hot Roll Strip s +/-13.5mm	Max 780	+/-12	+/-12	+/-245

Based on transverse samples at room temp. to EN 10 088-2

Hardened and tempered approximately 55 HRC. Calculating tensile strength from hardness is subject to weight fluctuations

HEAT TREATMENT

Heat Treatment/ Hardened	Cooling	Microstructure
TEMP 980-1030 °C	Oil/Water	Martensite (transformation structure)

PHYSICAL PROPERTIES

Density kg/dm ³	Modulus of elasticity in kN/mm ² at					Thermal expansion in 10 ⁻⁶ -K ⁻¹ between 20 °C J/kg-K			
	20°C	100°C	200°C	300°C	400°C	100°C	200°C	300°C	400°C
	7.7	215	212	205	200	190	10.5	11.0	11.5

Thermal Conductivity at 20° W/m-K	Specific Heat Capacity At 20° J/kg-K	Electrical Resistivity at 20° W/m-K	Magnetisability
30	460	0.65	present

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