

TOOLOX44

Pre-hardened steel

Grinded and rolled plates cut to size

Toolox44 is a pre-hardened steel with a hardness of 45 HRC and a yield strength of 1300 N/mm². It is easy to work with suitable tools. Because of the low levels of internal stress, large sections may be machined without movement and stress relieving is neither necessary nor recommended. This steel which is used in mechanical engineering and tool making may be polished and etched with excellent results.

FINISHES

Thickness
Tolerance
Parallelism
Evenness

GRINDED

grinded $\leq Ra1.6$ (N7)
+0.2 /+0.1 mm
 ≤ 0.05 mm
 ≤ 0.2 mm

ROLLED

Thickness
Tolerance
Parallelism
Evenness

walzroh
DIN/EN 10029 class C
DIN/EN 10029
 ≤ 0.5 mm

BLANKS OF ALL SIZES

Length/width
HABA standard tolerance
Customer-specific tolerance

Ra6.3-12.5 cut with a precision circular saw
nominal size +0.8/+0.3 mm
within a tolerance field of 0.4 mm

We can also produce milled blanks on request as well as special thicknesses and tolerances.

TECHNICAL SPECIFICATIONS

Tensile strength R_m 1450 (N/mm²)
Yield strength $R_{p0.2}$ 1300 (N/mm²)
Breaking strain $(L_0 = 5 d_0) A_5$ ≥ 13 %
Impact energy A_V (J) typical values 130J/20°C
guaranteed values 20J/20°C
Brinell hardness HBW 450
HRC 45

COAT

All coatings at temperatures below 590°C are possible. With the influence of heat > 590°C the Toolox properties may get lost and can no longer be guaranteed.

CHEMICAL COMPOSITION

Carbon	C	0.32 %	Chromium	Cr	1.35 %
Silicium	Si	0.60-1.10 %	Molybdenum	Mo	0.80 %
Manganese	Mn	0.80 %	Nickel	Ni	≤ 1.00 %
Phosphor	P	≤ 0.010 %	Vanadium	V	0.14 %
Sulfur	S	≤ 0.002 %	Nitrogen	N	-
CET		0.55 - 0.57	CEI IW		0.94 - 0.98

MATERIAL IN USE

Mechanical engineering
Toolmaking
Jig manufacturing
Mould construction

APPLICATIONS

Rack gears
Guide rails
Forming tools
Plastic / Rubber moulds
Machine components for high tensility demands

PROPERTIES

stability great
free machining relatively
hardness very high
tensil strength very high
ideal for nitriding and PVD

NITRIDING

Toolox44 is excellent for gas nitriding and PVD. The table below shows the achievable hardnesses and case depths for different nitriding times. Additional oxidising protects against corrosion.

