

# 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/mm<sup>2</sup>. 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	grinded Ra1.6 (N7)
Tolerance	+0.2 /+0.1 mm
Parallelism	≤0.05 mm
Evenness	≤0.2 mm

## GRINDED

Thickness	walzhoh
Tolerance	DIN/EN 10029 class C
Parallelism	DIN/EN 10029
Evenness	≤0.5 mm

## ROLLED

Thickness	walzhoh
Tolerance	DIN/EN 10029 class C
Parallelism	DIN/EN 10029
Evenness	≤0.5 mm

## BLANKS OF ALL SIZES

Length/width	Ra6.3-12.5 cut with a precision circular saw
HABA standard tolerance	nominal size +0.8/+0.3 mm
Customer-specific tolerance	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/mm <sup>2</sup> )
Yield strength	$R_{p0.2}$	1300 (N/mm <sup>2</sup> )
Breaking strain	$(L_o = 5 d_o) A_5$	≥13 %
Impact energy	$A_V$ (J)	typical values 130J/20°C guaranteed values 20J/20°C
Brinell hardness	HBW	450
	HRC	45
Density		7.85 kg/dm <sup>3</sup>

## 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	CEIIW		0.94 - 0.98

## MATERIAL IN USE

Mechanical engineering  
Toolmaking  
Jig manufacturing  
Mould construction

## APPLICATIONS

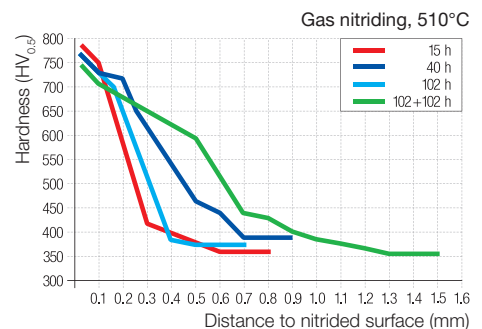
Rack gears  
Guide rails  
Forming tools  
Plastic / Rubber moulds  
Machine components for high tensility demands

## PROPERTIES

stability great  
free machining relatively  
hardness very high  
tensile 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.



We declare that our products are not suitable for any other applications and purposes, other than those specified here and do not have other product properties than those specified here.

