

Technical information

TOOLOX44



Usage

TOOLOX 44 is a new steel delivered quenched and tempered with high impact toughness and very low residual stresses to get good dimensional stability. Despite its hardness of 45 HRC, TOOLOX 44 is easily machined.

TOOLOX 44 has high strength at elevated temperature and is suitable for dies and tools such as plastic, rubber, die casting, bending and sheet forming tools. TOOLOX 44 is also well suited as machine components such as wear parts, guide rails, hot applications.

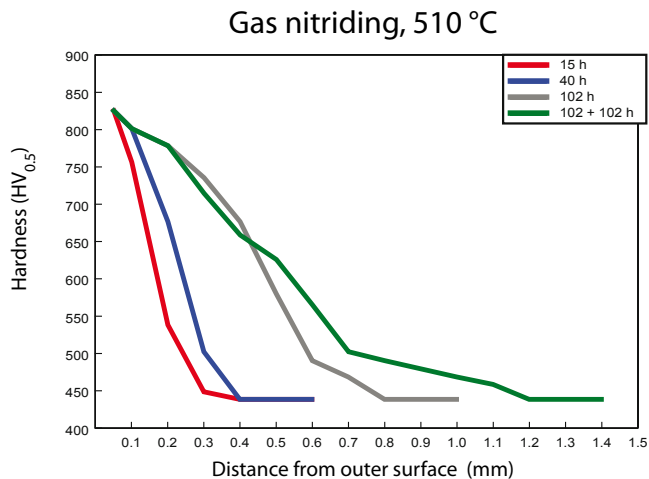
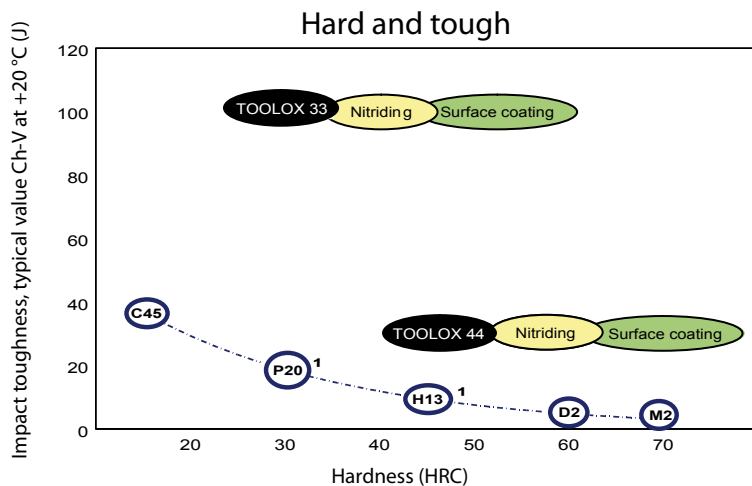
With proper surface treatment, the service life of the tool/component can be prolonged.

Typical values

Chemical composition		Mechanical properties					
C	0.32%		+20 °C	+200 °C	+300 °C	+400 °C	+500 °C
Si	0.6-1.1%	Tensile strength, R_m [MPa]	1450	1380			
Mn	0.8%	Yield strength, $R_{p0.2}$ [MPa]	1300	1200			
P	max 0.010%	Elongation, A_5 [%]	13	10			
S	max 0.003%	Compressive yield strength, $R_{c0.2}$ [MPa]					
Cr	1.35%	- after 170 h soaking time					
Mo	0.80%	Impact toughness [J]	30	60	80	80	
V	0.14%	Hardness, [HBW]	450				
Ni	max 1%	Hardness, [HRC]	45				
CE _{IIW}	0.92-0.96						
CET	0.55-0.57						

Inclusions		Physical properties				
Inclusion size (equiv. diam)	6 μm		+20 °C	+200 °C	+400 °C	+600 °C
Area fraction	0.015%	Heat conductivity [W/m · K]	28	29	29	21
Aspect ratio	1.2	Thermal expansion coefficient [10 ⁻⁶ /K]	13.5	13.5	13.5	

Surface technology



Footnote 1: P20 = W.Nr 1.2311 and H13 = W.Nr 1.2344