

Steel grade

Material No. / Werkstoff-Nr.	PREMIUM Toolox 33
Description	Toolox 33
AISI/SAE	Toolox 33
Search for alternatives in the ABRAMS STEEL GUIDE®	www.steel-guide.eu/alternatives/T33

Specifications



€co-Präz* [€co]
L: 500 mm

Chemical composition AISI/SAE Toolox 33 (reference value %)

C	Si	Mn	P	S	Cr	Mo	Ni	V
0,22 - 0,24	0,6 - 1,1	0,8 - 0,8	0 - 0,01	0 - 0,003	1,0 - 1,2	0,3 - 0,3	0 - 1,0	0,1 - 0,11

Physical properties

Hardness (delivery condition)	max. 330 HB, tempered			
Tensile strength R _m (as received condition)	approx. 1.125 N/mm ²			
Working hardness	max. 36 HRC			
Thermal expansion coefficient 10 ⁻⁶ m/(m • K)	20 - 200°C			
	13,1			
Thermal conductivity W/(m • K)	20°C	200°C	400°C	600°C
	35,0	35,0	30,0	23,0

Technical properties

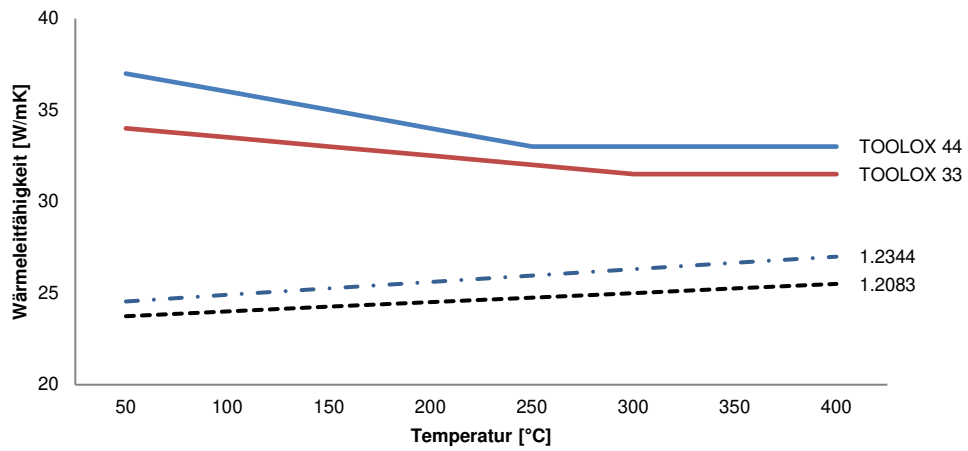
Quenched and tempered low-alloyed toolsteel with good machinability, high toughness and low residual stresses. Can easily be polished, grained, eroded, etched, sliced, welded, nitrided, and coated with PVD (Physical Vapour Deposition). Further heat treatment is not intended.

Applications

Mechanical engineering, machine parts, guide rails, base plates, assembling parts, press brake tools, plate forming tools, wear parts, plastic moulds, moulding frames, forming tools, rubber moulds, die casting moulds.



Thermal conductivity



Surface Treatment - hardness / charpy impact energy

