

TOOLOX® IN ROUND BARS

ULTRA HIGH STRENGTH STEEL DELIVERED HEAT-TREATED



Toolox® in round bars, delivered heat treated to high tensile strength levels of typically 210 ksi, represents entirely new possibilities for product design. The need for heat treatments on standard steel grades is eliminated and the time-to-market becomes shorter.

Toolox® represents a step forward in steel development. By optimizing our in-house quench and tempering process, with low alloy chemistry, we have been able to combine superior mechanical strength with high crack resistance. This not only represents a unique mechanical performance, but it also provides the possibility to lower the weight of components.

Toolox® is made in Sweden by SSAB, which for more than 40 years has been the market leader in high strength quenched and tempered plates, such as the famous brands Hardox® and Weldox®. Exhaustive quality control, including ultrasonic and mechanical testing, is performed on each heat treatment batch. This provides a completely different property guarantee compared with standard grades of often unknown origin. For heavy plate, Toolox® has been in the market since 2002. It is a well-proven product both for mould and die making as well as machine components.



Toolox® bar id.

Machining

Toolox® is based on a low carbon concept, which results in excellent machinability.

Toughness

The high hardness combined with excellent toughness ensures less wear and a longer operating life for components, when compared to standard steels.

Fatigue

Due to its ultra-high cleanliness, the surface, rather than the steel, is the critical question for fatigue properties. In applications where increased surface hardness is necessary in order to resist wear, Toolox® can be nitrided/PVD-coated. Furthermore, Toolox® can also be used in applications that work at elevated temperatures, up to 1094 F.



Polishing & Texturing

Another distinctive feature of Toolox® is excellent properties for processes such as etching, polishing and coating.

Experience the full potential of Toolox® in round bars!



Toolox® offers applications a wide range of benefits.

Toolox® vs 42CrMo4

	42CrMo4			Toolox® 44
	>0.630 – 1.575	>1.575 – 3.937	>3.937 – 6.299	
Ø in	>0.630 – 1.575	>1.575 – 3.937	>3.937 – 6.299	0.827 – 13.898
Yield strength Rp0.2(ksi)	>109	> 94	>80	Typ. 188
Tensile strength Rm (ksi)	145 - 181	130 - 159	116 - 138	Typ. 210
A5 (%)	>11	>12	>13	Typ. 13
Impact toughness Ch-V @ RT	>26	>26	>26	>13
ESR Properties	No	No	No	Yes
C % typical	0.42	0.42	0.42	0.32
Mn % typical	0.75	0.75	0.75	0.8
S % Max	0.035	0.035	0.035	0.002
Cr % typical	1.10	1.10	1.10	1.35
Mo % typical	0.22	0.22	0.22	0.80
CE II W	1.01 - 1.27	1.01 - 1.27	1.01 - 1.27	0.90 - 0.94

Availability

Diameters between 0.827" - 13.898" mm with lengths up to 196.850". Diameter ovality is in accordance to SS-EN 10060. Bright bar half of the SS - EN 10060 and impact testing in accordance to EN 10 025.

Toolox® diameters are available from the local SSAB stock in Antwerp. Cut pieces of Toolox® can be obtained through the well-established global network of Approved Toolox® Distributors. Both SSAB and distributors can also provide you with good application support as well as technical guidelines.

Contact and more information

Contact your local sales representative to learn more, visit www.toolox.com or consult Tech Support at: help@ssab.com