

General information

OvaX 300 is an ingot cast high tensile quench and tempering steel with very high strength and toughness. OvaX 300 is an excellent choice for shafts and machine components. The high silicon content will give an improved tempering resistance. The grade is produced with the quality class IQ (isotropic quality). This ensures a very low number of elongated sulphide inclusions which will give more isotropic properties. The high oxidic cleanliness will enable the steel to meet the same high demands as for re-melted qualities. The carbon range will give a high surface hardness after surface induction hardening.

Comparable standard designations

UNS	AMS	ASTM/SAE
K 44220	6417, 6419	4340M

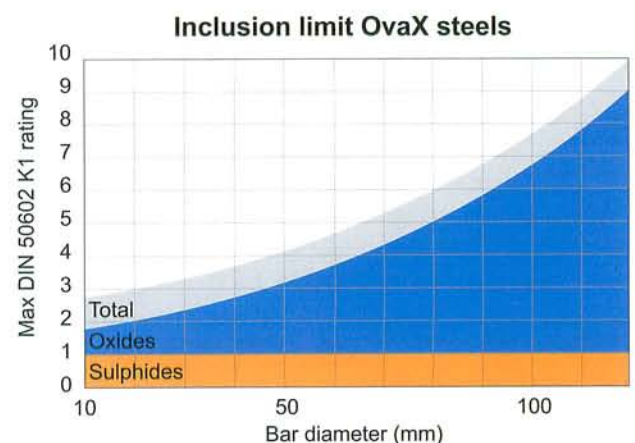
Chemical composition

	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	V %
min.	0.39	1.50	0.60			0.70	1.65	0.30	0.05
max.	0.44	1.80	0.90	0.025	0.001	0.95	2.00	0.45	0.10

Steel cleanliness

Micro inclusions	
Applied standard	DIN 50602 K1
Sampling	Six random samples from the final product dimension.
Limits	Dimension dependent, the average rating of six samples will not exceed the limits given in the right graph.

Macro inclusions		
Applied standard	ISO 3763 (Blue fracture)	10 MHz UST (internal)
Sampling	Statistical testing on billets. Three samples per tested heat.	
Limits	<1 mm/dm ²	Max. 32 defects/dm ³ >0,2 mm FBH



Heat treatment

	Temperature cycle °C	Cooling/Quenching
Forging	900-1200	Air cool
Austenitization	860-880 1h	Oil quench
Tempering	200-650 3h (double tempering)	Air cool

Other properties (typical values)

Young's modulus (GPa)	Poisson's ratio (-)	Shear modulus (GPa)	Density (kg/m ³)
205	0.3	80	7800

Average CTE 20-300°C (µm/m°K)	Specific heat capacity 50-100°C (J/kg°K)	Thermal conductivity Ambient temperature (W/m°K)	Electrical resistivity Ambient temperature (µΩm)
11	450	45	0.22

Product specification: PSF OvaX 300

Issue: 1

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Disclaimer

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Ovako Group HQ
Kanalvägen 1 A, 4 fl.
S-19 461 Upplands Väsby, Sweden
Tel. + 46 290 250 00
Fax. + 46 260 250 25