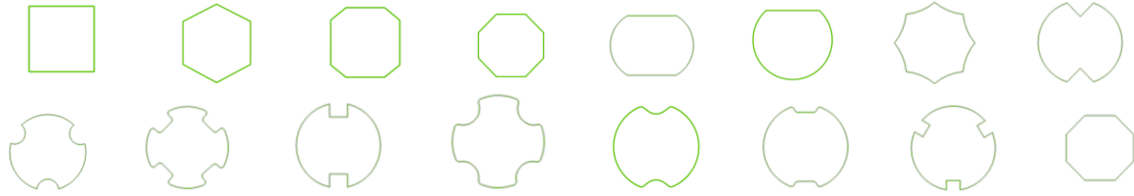


PRECISION WIRE LINECARD SOFT MAGNETIC STAINLESS STEELS



ZAPP IS CERTIFIED TO ISO 9001



In the following you will get the most important information in regard of our soft magnetic stainless steels.

If there are any questions left, please do not hesitate to contact us under Phone +49 2304 79-148.

DELIVERY FORMS AND FINISHES

Product Form/ Finishes	Round Bars	Profiles
Size Range	<p>∅ 6 - 27 mm</p> <p>< 6 mm and > 27 mm on request</p>	<p>5 - 30 mm four-, six- and eight-edge for further profile geometry, see diagram</p> <p>other sizes and special shapes on request</p>
Finish	<p>drawn, annealed</p> <p>ground, polished</p> <p>crack detected acc. DIN ISO 10277 - class 1 to 4</p> <p>US-tested on request</p> <p>unchecked ends removed on request</p>	<p>drawn to section, annealed</p> <p>crack detection acc. DIN ISO 10277 - Table 1 - class 1 on request</p> <p>-</p> <p>unchecked ends removed on request</p>
Form of Delivery	bars up to 4,200 mm	bars up to 3,000 mm
Bar End Machining	sizes 6 - 25 ∅ mm both bar ends chamfered/ pointed or end-faced	chamfered (one or both ends) or both bar ends end-faced
Surface Roughness	$R_{max} < 5 \mu m$	$R_{max} < 10 \mu m$
Magnetic Properties	as denoted above	on request
Tolerances	according to DIN standard, ISO standard or according to special specification	

ANALYSIS OF SOLENOID STAINLESS STEELS

Brand Name	Comparable Grades According to AISI/ SAE	Abbreviation EN 10027-1	Analysis *							
			C	Si	Mn	P	S	Cr	Mo	Others
Ergste® 1.4003IA	AISI 414	X2CrNi12	< 0.03	< 1.00	0.00-1.50	< 0.040	0.015	10.5-12.5	-	Ni: 0.3-1.0
Ergste® 1.4005IA	AISI 416	X2CrS13*	< 0.02	< 1.00	< 1.50	< 0.040	0.25-0.35	12.0-14.0	< 0.60	-
Ergste® 9.9013IL	-	-	< 0.02	1.0-1.5	< 1.50	< 0.040	0.15-0.35	12.0-14.0	0.9-1.4	V: 0.7-1.2 Cu: 0.5-1.0
Ergste® 1.4105IL	AISI 430F	X5CrMoS17	< 0.03	< 1.50	< 1.50	< 0.040	0.20-0.35	16.0-18.0	0.20-0.60	-
Ergste® 1.4105IM	AISI 430F	X5CrMoS17	< 0.05	< 1.00	< 1.50	< 0.040	0.20-0.35	16.0-18.0	0.20-0.60	-
Ergste® 1.4016IM	AISI 430	X6Cr17	< 0.06	< 1.00	< 1.00	< 0.040	< 0.015	16.0-18.0	-	-
Ergste® 1.4113IM	AISI 434	X5CrMoS 17-1*	< 0.03	< 1.80	< 1.00	< 0.040	0.20-0.35	17.0-18.5	1.5-2.5	-
Ergste® 1.4113IL	AISI 434	X5CrMoS17-1	< 0.05	< 1.00	< 1.00	< 0.040	< 0.03	16.0-18.0	0.90-1.40	-
Ergste® 1.4511IA	-	X3CrNb17	< 0.03	< 1.00	< 1.00	< 0.040	< 0.015	16.0-18.0	-	Nb:0.2-0.5

* deviation from ISO

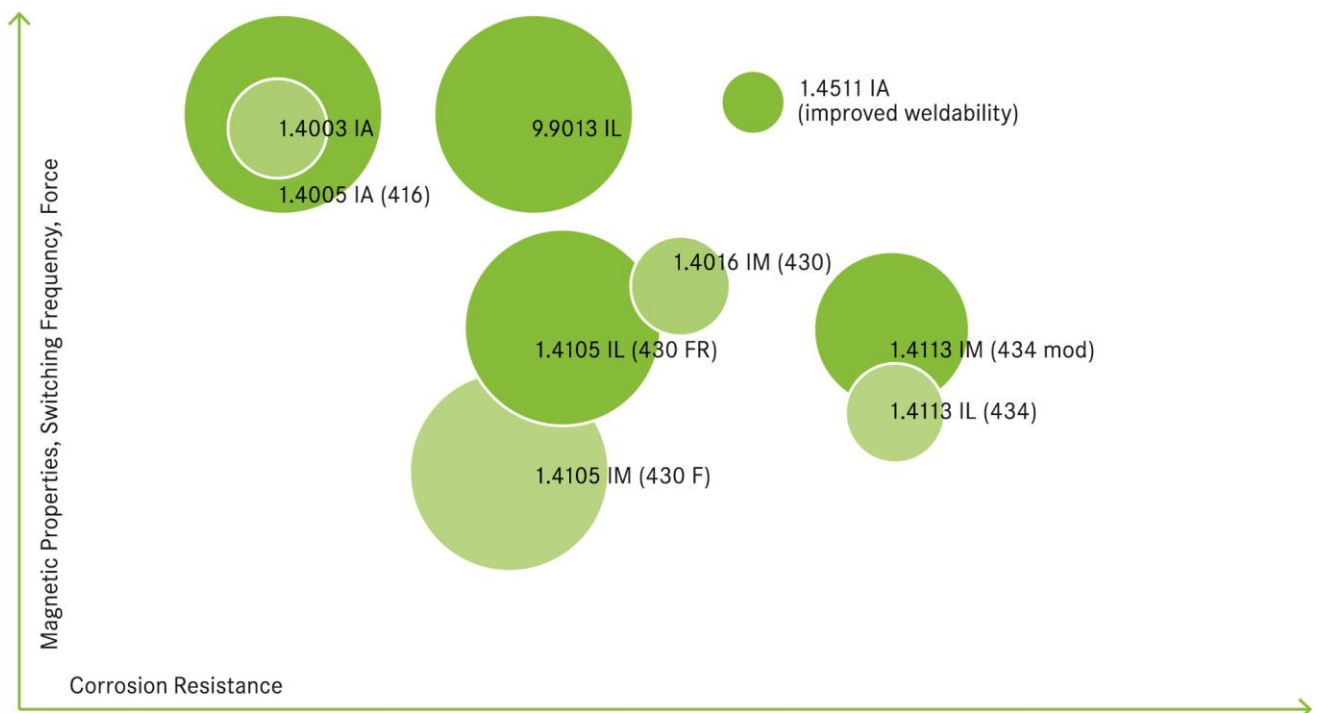
MAGNETIC AND PHYSICAL PROPERTIES – ROUND BARS (Ø 6 - 25 MM)*

	Ergste® 1.4003IA AISI 414	Ergste® 1.4005IA AISI 416	Ergste® 9.9013IL	Ergste® 1.4105IL AISI 430F	Ergste® 1.4105IM AISI 430F	Ergste® 1.4016IM AISI 430	Ergste® 1.4113IM AISI 434	Ergste® 1.4113IL AISI 434	Ergste® 1.4511IA
Saturation Polarization Js [T]	> 1.70	> 1.70	~ 1.70	> 1.50	> 1.55	> 1.60	> 1.50	> 1.50	>1.60
Remanence Br [T]	0.7 – 1.2	0.6 – 1.1	0.8 – 1.2	0.5 – 1.1	0.5 – 1.1	0.5 – 1.1	0.5 – 1.1	0.5 – 1.1	0.5 – 1.2
Max. Permeability μ_{max}	> 1,700	> 1,700	> 1,700	> 1,500	> 1,000	> 1,500	> 1,500	> 1,300	> 2,000
Coercivity jH_C [A/m]	< 180	< 180	< 180	< 200	< 280	< 200	< 200	< 240	< 160
Specific el. Resistance ρ [$\mu\Omega m$]	> 0.55	> 0.63	> 0.60	> 0.79	> 0.62	> 0.53	> 0.82	> 0.64	> 0.56
Tensile Strength [MPa]	350 - 550	350 - 550	350 - 550	350 - 550	350 - 550	350 - 550	400 - 600	400 - 600	350 - 550

* Other sizes and shapes on request

MAGNETIC PROPERTIES AND CORROSION RESISTANCE OF SOFT MAGNETIC STAINLESS STEELS

Circle size indicates machinability



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Further information regarding our products and locations are available in our image brochure and under www.zapp.com

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