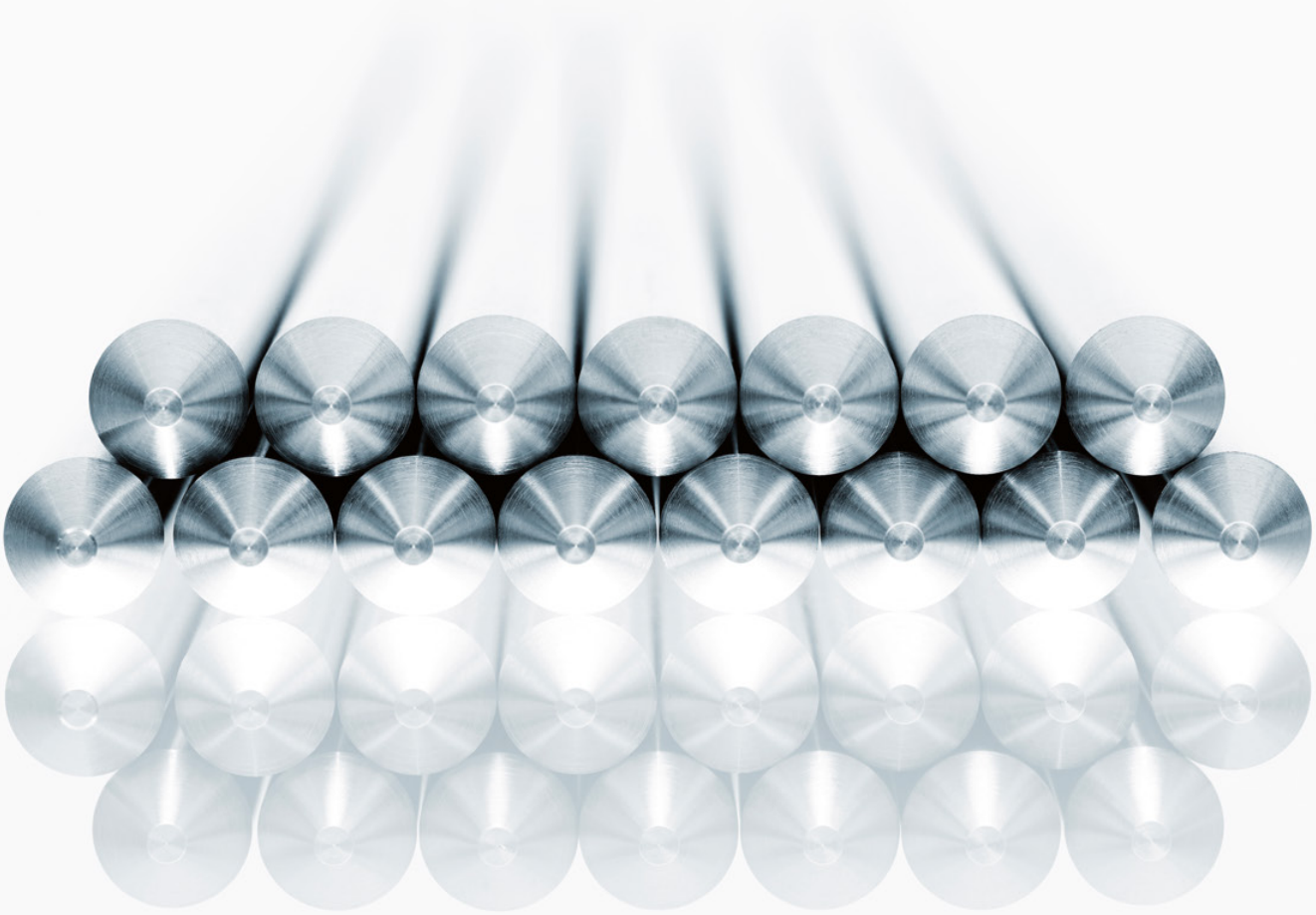
PRECISION WIRE

New since 1701
Zapp Precision Metals GmbH

zapp



The illustrations, drawings, dimensional and weight data and other information included in this brochure are intended only for the purposes of describing our products and represent non-binding average values. They do not constitute quality data, nor can they be used as the basis for any guarantee of quality or durability. The applications presented serve only as illustrations and can be construed neither as quality data nor as a guarantee in relation to the suitability of the material. This cannot substitute for comprehensive consultation on the selection of our products and on their use in a specific application. The brochure is not subject to change control.

CONTENT

ZAPP: FROM PAST GENERATIONS – FOR FUTURE GENERATIONS

300 years of Zapp. In 1701 in Ründeroth, Germany, Hermann Zapp founded the company, which quickly became a specialist for high-grade, and high-performance steels. We deliver quickly and reliably thanks to a large network of selected sales partners and our own locations in Europe, Asia, and the US. With our experience and expertise, we ensure that you can turn your ideas into reality. From past generations – for future generations! We are your partner for your projects and can carry out the first manufacturing steps, such as cutting and straightening, prior to delivery. This allows you to fully concentrate on the core processes of your production. We supply the right product form for your specific needs: wire, bar, profile, tube, strip, CAD-CAM discs, and more from stainless steel, titanium materials, nickel, and CoCr based alloys or metal powders. The quest for innovation, intensive quality assurance and the willingness to solve complicated technical problems are our driving forces.

For 300 years, progress has helped us build a future with you for the next generations.

160 PLANTS ARE MOVING FOR YOU

As complex as your application, that's how varied and variable our production possibilities are. You define the product features, and we provide them with a variety of processing and finishing options tailored to your specific needs. No matter whether wire, bar, profile, flat wire, or powder – we deliver the material and the necessary knowledge. With you we develop new ideas and techniques.

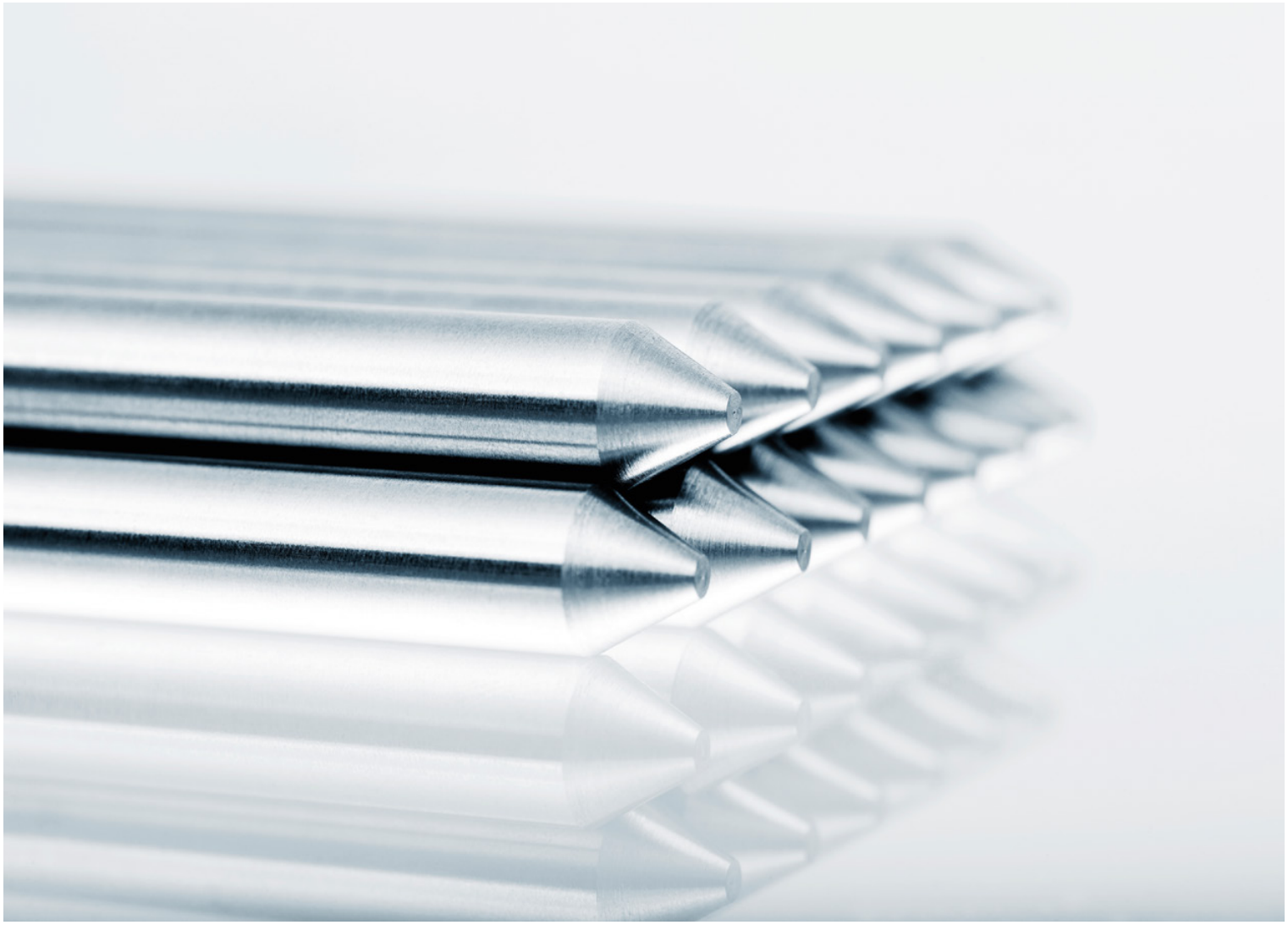
OUR STANDARD
PRECISE, PUNCTUAL, PERFECT

OUR VISION
Only those who move stay at the top. Whether automotive, electronics, or medical technology. Together, we will make sure that our lives and those of the next generations will be easier, better, and safer.

PROCESS-RELIABLE MATERIAL – HIGH REPRODUCIBILITY
Only those who supply consistent product quality create the basis for a smooth production. We focus on cold processing.

OUR STRENGHTS
BROAD RANGE IN MILLING, ROLLING, ANNEALING, GRINDING

In order to always be able to offer you the best materials, we obtain our material worldwide from premium manufacturers and finish it according to your needs. With our diverse manufacturing capabilities, we are flexible and are able to provide the ideal material for your application. State-of-the-art machines produce optimal surfaces and maintain closest dimensional tolerances. With offices in Europe, North America, and Asia, we are near you.



»I'll make sure your requirements are met.«

»Since completing my mechanical engineering studies, I have been the head of metallography for several years. As a metallographic expert, I mainly deal with the micro structure of materials. This means that I examine the relationship between the microstructure, the other material properties, and the manufacturing process of our materials and semi-finished products. The objective here is to ensure consistent product quality. We are happy to provide advice to assist you in the use of our products in your products. If necessary, we also develop new, tailor-made testing methods for you. We at Zapp live quality.«

KAREN GEIGER, QUALITY CONTROL
SCHWERTE LOCATION, GERMANY

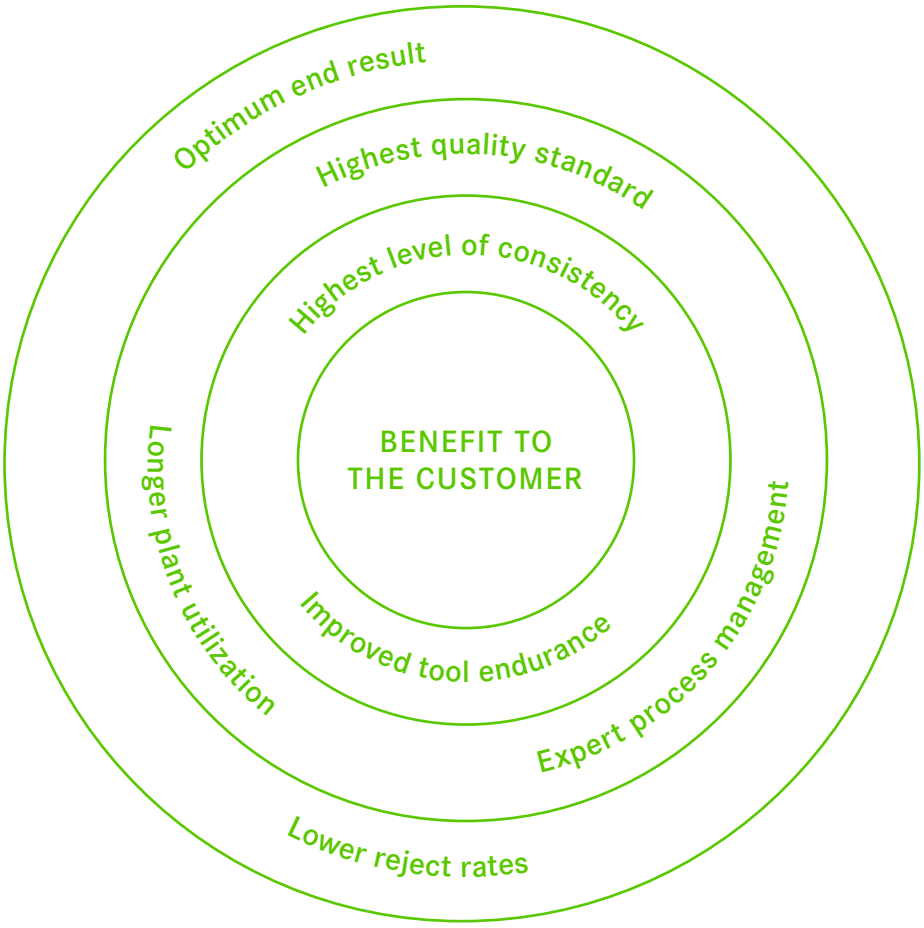
»I grind your bars perfectly and precisely.«

»So far, I've spent all my career at Zapp. I started with a student internship grade 9, and after a summer job I started directly with my training as a tool mechanic. I have worked with Zapp for 17 years now. Due to new techniques, it never gets boring, because I am constantly challenged to meet the requirements I set myself. The bars I work must always be in optimal condition and maintain the same high quality. That's also something the customer should notice.«

MARKUS GLOBISCH, GRINDER
PRECISION WIRE, SCHWERTE LOCATION, GERMANY

12,000 tools for more than
5,000 profile designs.

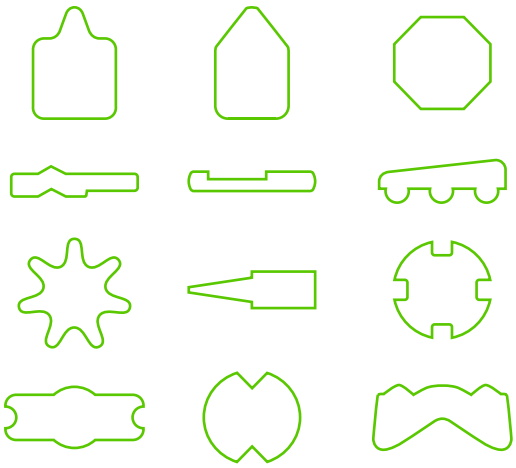
HOW YOUR PRODUCTION BENEFITS FROM OUR SEMI-FINISHED PRODUCTS



PROFILE:
MINIMAL MACHINING, COMPLEX SHAPES

Our »near net shape« profiles ensure the minimum of expenditure on machining. Over 5,000 differently shaped profiles speed up the process of finding ideas – ranging from a small triangular profile with a length per side of 0.01" (0.3 mm) to a 2.48 x 0.25" (63 x 6.35 mm) flat profile, both made to customers' drawings. With a broad spectrum of shaping technologies at our disposal such as drawing and rolling, we can cold-form even exceptionally complex profile shapes. For measuring purposes, we use mechanical or opto-electronic scanning. We deliver our products in rings, on coils, or in bars up to a length of 354" (9,000 mm) according to customer specifications. Our tool-room is equipped with the latest CNC processing machines and holds 12,000 tools in store. This saves time and promotes the punctual delivery of shipments.

CHOICE OF PROFILE GEOMETRIES

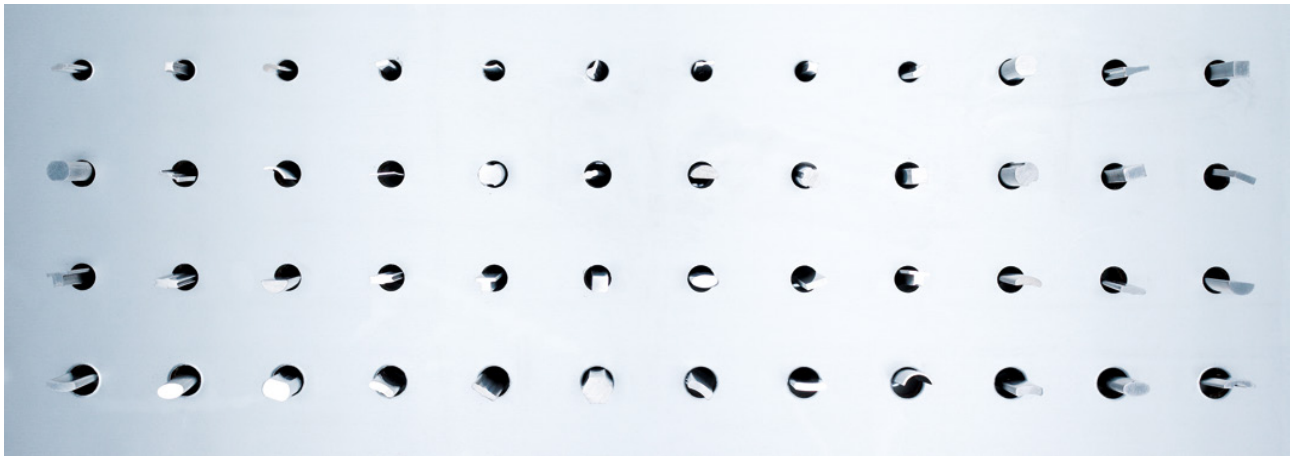


SIZE RANGE

Width 0.016 – 2.5" (0.4 – 63.50 mm)
Thickness 0.01 – 1.34" (0.25 – 34 mm)

FORMS OF PROFILES

Square, hexagon, octagon, key bar
Special profiles according to customer specification
Finishes
Drawn to profile, specially rolled, rolled to profile
Cross and longitudinal shaping
Profiles made of faultlessly ground rolled rods
Finishes depend on material, shape and tensile strength
Surface finishes
Dull, bright, very bright, bonderized
Lowest roughness values
Tolerances
EN 10278
Tightest tolerances depending on geometry on request
Straightness
Minimal deviation depending on product form by agreement
Edge finishes
Special edge finishes for profile bars
Quality standards
Annealed, cold-hardened according to EN 10088-3, ISO 5832-1
Closer mechanical, technical or physical properties by agreement
Forms of delivery (EN 10278)
Bars in manufactured lengths, stock lengths, precise lengths can be supplied up to 354.3" +/- 0.2" (9,000 mm +/- 5 mm)
Spools to EN 60264-2-1
Packet wrapped coils
Special spools of 22 – 4,400 lbs (10 – 2,000 kg)
Chamfered or sawn bar ends
Forms of delivery depend on the cross-profile
Standards
Primarily used standards: DIN 17850/SEW 470/EN 10095/ EN 10088-3/ISO 5832-1/ASTM F138



FLAT WIRE:
OUR SPECIALTY FOR DECADES

Our flat wire products permit the finest dimensional and stability tolerances to be achieved with regard to specified annular curvatures and straightness. They can also be supplied in the form of a single core without welds, thereby optimizing subsequent processing. Depending on requirements, we supply plain or coated surfaces, hardened or colored.

SIZE RANGE

Width 0.02 – 0.59" (0.5 – 15 mm)
Thickness 0.004 – 0.16" (0.1 – 4 mm)
Individual tolerances

FLAT WIRE EDGE TREATMENT

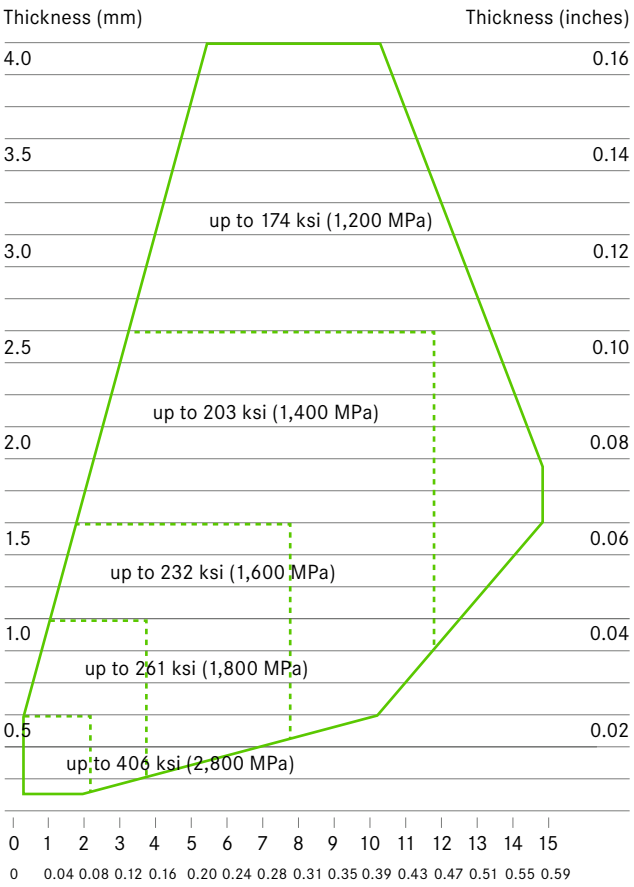
Flat rolled: rounded narrow sides

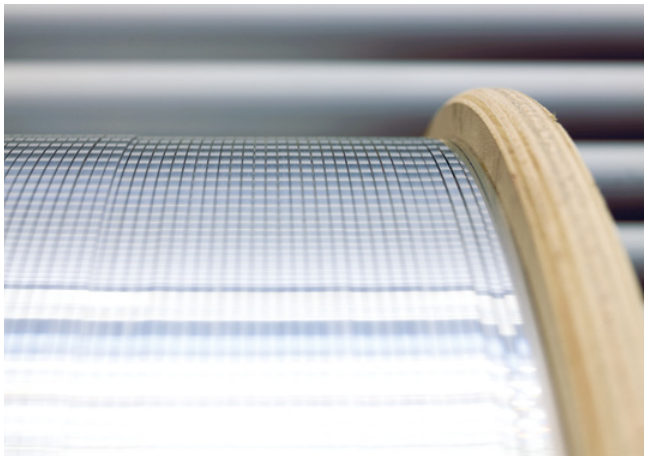
Flat rolled: round narrow sides

Flat rolled: rounded edges

PRODUCT RANGE WITH FLAT ROLLED CROSS-SECTIONS

TENSILE STRENGTH LIMITS





»I take care of the optimal profile.«

»For more than 40 years, it has been my task at Zapp to ensure profiles are manufactured to perfection. In 1974, the training was called toolmaker, because back then we made everything by hand and learned from scratch. Today we offer more than 5,000 profiles and stock around 15,000 tools. The computer-controlled machines now work much more precisely and accurately than before. But experience is still very important to make a product that fits the customer's requirements. I like to share this knowledge with the young generation. Because only the right combination of technology, knowledge, and precise machining bring us to the goal of producing a first-class profile. And that should still be the case tomorrow!«

EDWIN RINKE, TOOL MECHANIC
SCHWERTE LOCATION, GERMANY

WIRE:
HIGH STRENGHTS AND OUTSTANDING DUCTILITY

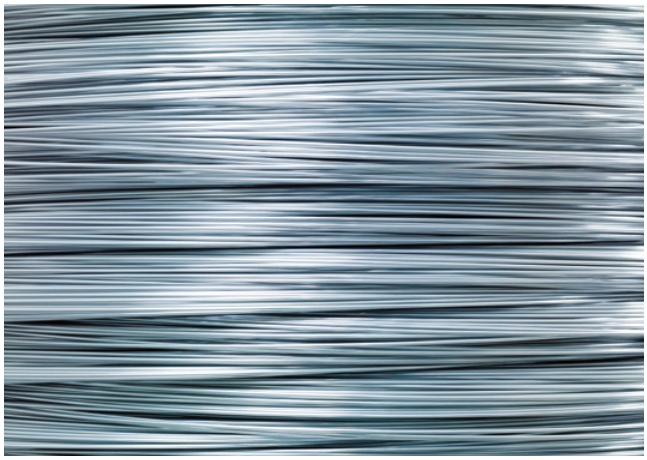
Our wire products feature exceptionally high strengths and – at the same time – outstanding ductility, to a large extent, free from internal stress. Depending on the application and intended type of processing, special finishes and coatings can be supplied. We can also make wires to specified fixed lengths entirely free of welds.

What are your requirements for a wire?
Challenge us!

SIZE RANGE
0.006 – 0.8" (0.15 – 20 mm) diameter

Thickness tolerances
ISO 286-2 (ISO h11 – h6)
Closer or different tolerances according to customer requirements
Finishes
Finally annealed
Drawn
Bright drawn
Diamond drawn
Degreased
Coated/bondered
Zapp-coat
Nickel (Ni) coated wire
Cu-Sn coated bright drawn wire
Specially coated
ASTM A555, ASTM A580

Quality standards
Annealed, cold-hardened in accordance with EN 10088-3, ISO 5832-1
Spring hard to EN 10270-3
Eddy current testing (Sweden)
Closer mechanical, technological or physical values for your specific application
Forms of delivery
Coils up to 2,095 lbs (950 kg)
Top hat
Wire on spools (several types of spools)
Wire in barrels (wide range of drums)
Catalog for forms of delivery on request
Standards
Primarily used standards:
EN 10088-1+3/EN 10270-3/DIN 17850
ASTM B863/ASTM A580/ASTM A555/ASTM A313
ASTM A493/SEW 470/ISO 5832-1/ASTM F138



BAR:
A CLASS BETTER

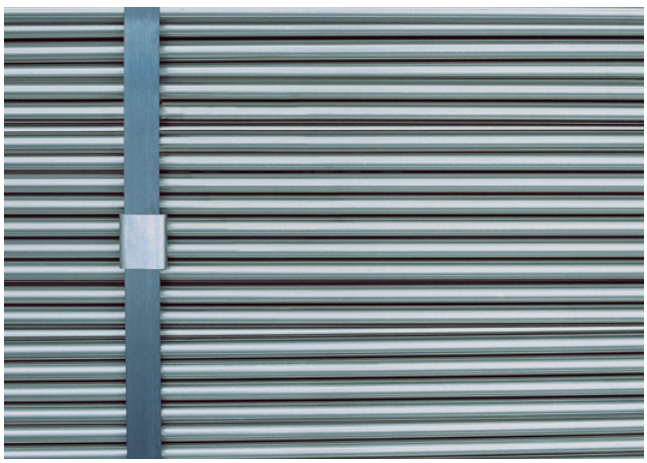
Our bar steels are always one tolerance category better. A superior grinding technique ensures an excellent finish. For quality assurance, we employ a high-cost crack testing method. We achieve demanding magnetic properties on a consistent basis (e.g., soft magnetic bars for valve systems, or demagnetized bars and bar steel with exceptionally low degrees of susceptibility to magnetization.) Our wide product range also includes very thin bars of exceptional straightness (chamfered, if required).

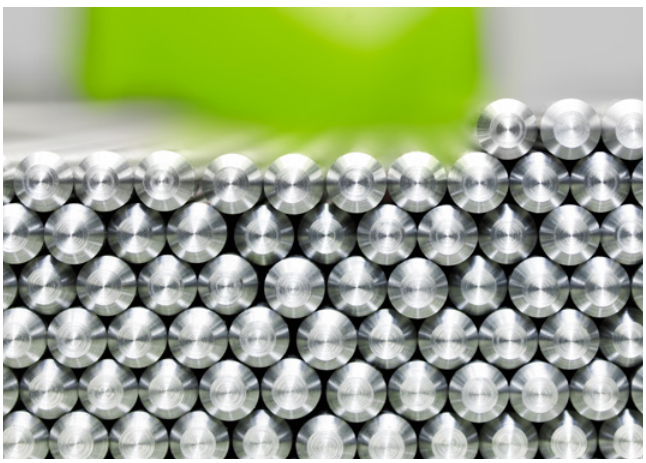
SIZE RANGE
Ø 0.003 – 3.94" (0.7 – 100 mm) round

Thickness tolerances
ISO 286-2 (ISO h11–h5)
Closer or different tolerances according to customer requirements
Finishes
Drawn, straightened
Drawn, straightened, polished
Drawn, ground, polished
Drawn, straightened, ground, polished
Drawn, annealed, straightened
Drawn, annealed, ground
Drawn, annealed, ground, polished
Drawn, annealed, straightened, ground, polished
Surface roughness Ø 0.039 – 0.157" (Ø 1.0 – 40 mm)
Ground, polished
$R_{max.} \leq 5\ \mu m / R_z \leq 3\ \mu m / R_a \leq 0.5\ \mu m$
$R_{max.} \leq 2.5\ \mu m / R_z \leq 2\ \mu m / R_a \leq 0.3\ \mu m$
Straightness Ø 0.039 – 0.157" (Ø 1.0 – 40 mm)
Up to 0.02" (0.5 mm)/40.0" (1 m) as standard
Up to 0.008" (0.2 mm)/40.0" (1 m) on request
Specially straightened on request

Quality standards
Annealed and/or cold hardened in accordance with EN 10088-3
Closer and higher mechanical, technological or physical values according to customer requirements
Crack tested in accordance to EN 10277-1 Table 1, class 1 – 4
Tempered
Demagnetized
Defined magnetic characteristics
Ultrasonic tested (Ø 0.24 – 0.98"/Ø 6 – 25 mm), circular disk-shaped reflector at least 0.028" (0.7 mm) or better
Bar length (DIN 10278, manufacturing, stock, exact lengths)
Ø 0.03 – 0.06" (0.7 – 1.5 mm) in lengths from 10.0 – 80.0" (250 – 2,000 m
Ø 0.06 – 0.2" (1.5 – 5 mm) in lengths from 10.0 – 160.0" (250 – 4,000 mm)
Ø 0.2 – 3.94" (5 – 100 mm) in lengths from 80 – 240" (2,000 – 6,000 mm)
Larger diameters, other bar lengths and tolerances on request
End machining
On one or both sides
Chamfered 90° (45°)
Pointed 60° (30°)
Face chamfered
Standards
Production according to national and international standards DIN/ISO/ASTM (e.g., EN 10088-3*/ISO 5832-1/ASTM F138)

* Surfaces requirements of ground bars acc. the standard need to be agreed on in the individual case.





»With passion for the customer.«

» Due to the variety of possible applications, I am still passionate about the distribution of our products even after more than 25 years. With our highly specialized product range, we supply customers all over the world in various industries. As an account manager, the support of my customers in the medical technology field is very important to me. That's why I like traveling to distant countries like India and the USA. For me, the customer is king.«

CLAUDIA WEIGAND, ACCOUNT MANAGER
MEDICAL ALLOYS, SCHWERTE LOCATION, GERMANY

CHOICE OF MATERIALS

ZAPP BRAND NAME	EN DIN	AISI	UNS	OTHER DESIGNATIONS/ TRADE NAMES
Selected Carbon Steels/ Low Alloyed Steels				
Ergste[7] 1.0611	1.0611	–	G10640	C62D
Ergste 1.0613	1.0613	–	G10690	C68D, SAE-No. 1069
Ergste 1.0617QC	1.0617	–	G10740	C72D, SAE-No. 1074
Ergste 1.0715	1.0715	–	~G12130	11SMn30
Westig[7] 1.0759EA	~1.0759	–	~G10650 +S +Pb +Si	70SPb20, A60Pb
Westig 1.1268EA	~1.1268	–	–	Mh 97 (A100Pb)
Ergste 1.2243	1.2243	–	~G92590, ~H92590	61CrSiV5
Westig 1.2833EB	1.2833	~AISI W2	~T72302	100V1
Ball Bearing Steels				
Ergste 1.3505ER	1.3505	–	~G52986	100Cr6
Ferritic Stainless Steels for Solenoid Applications				
Ergste 1.4003IA	1.4003	–	S40977, S40977	X2CrNi12
Ergste 1.4003IB, ID	~1.4003	–	S41003	X2CrNi12
Ergste 1.4005IA, IH, ID	~1.4005	AISI 416	S41600	~X12CrS13
Ergste 1.4016IM, IH	1.4016	AISI 430	S43000	X6Cr17
Ergste 1.4105IB	~1.4105	–	–	~X6CrMoS17
Ergste 1.4105IL, IT	1.4105	AISI 430F	–	X6CrMoS17; 430FR
Ergste 1.4105IM, IU	1.4105	AISI 430F	S43020	X6CrMoS17
Ergste 1.4105IQ	~1.4105 (+Cu)	–	–	–
Ergste 1.4113IL	1.4113	AISI 434	S43400	X6CrMo17-1
Ergste 1.4113IM, IU	1.4106	–	–	–
Ergste 1.4114IU	1.4114	XM-34	S18200	X6CrMoS19-2
Ergste 1.4511IA, IH	1.4511	AISI 430	S43000	X3CrNb17
Martensitic Stainless Steels				
Ergste 1.4005IU	1.4005	AISI 416	S41600	X12CrS13
Ergste 1.4006YH	1.4006	AISI 410	S41000	X12Cr13
Ergste 1.4021, YA, YB	1.4021	AISI 420, 420A	S42000	X20Cr13
Ergste 1.4024	1.4024	~AISI 410	~S41000	X20Cr13
Ergste 1.4028YC, YN	1.4028	AISI 420, 420B	S42000	X20Cr13
Ergste 1.4028MO	1.4028	AISI 420, 420X (+Mo)	S42026	X30Cr13
Ergste 1.4031YA	~1.4031	AISI 420	S42000	~X39Cr13
Ergste 1.4031YC, YE	1.4031	AISI 420, ~420X	S42000	X39Cr13
Ergste 1.4034YS, YE, YK	1.4034	AISI 420, 420C	S42000	X39Cr13
Ergste 1.4034YN	1.4034	–	–	–
Ergste 1.4035YU	1.4035	AISI 420C (+S)	–	X46CrS13
Ergste 1.4037YR	1.4037	AISI 420	S420020	X65Cr13
Ergste 1.4057YE[6]	1.4057	AISI 431	S43100	X17CrNi16-2
Ergste 1.4057YN	1.4057	~AISI 431	–	X17CrNi16-2
Ergste 1.4104, YU	1.4104	~AISI 430F	~S43020	X14CrMoS17
Ergste 1.4108[6]	1.4108	–	–	X30CrMoN15-1
Ergste 1.4112YE[6], YL	1.4112	–	–	X90CrMoV18
Ergste 1.4112YA	~1.4112	–	–	~X90CrMoV18
Ergste 1.4120YT	1.4120	–	–	X20CrMo13
Ergste 1.4122YA, YN, YL	1.4122	–	–	X39CrMo17-1
Ergste 1.4123YN[6]	1.4123	AISI 420 Mod	S42000, S42025	X40CrMoVN16-2, X15TN[5]
Ergste 1.4125YC, YE[6]	1.4125	AISI 440C	S44004	X105CrMo17
Ergste 1.4197YU	1.4197	AISI 420F Mod	–	X20CrNiMoS13-1
Ergste 1.4418YB	1.4418	–	–	X4CrNiMo16-5-1

ZAPP BRAND NAME	EN DIN	AISI	UNS	OTHER DESIGNATIONS/ TRADE NAMES
Martensitic Stainless Steels				
Ergste 9.9440YA	–	AISI 440A	S44002	–
Ergste 9.9440YL	–	~AISI 440A	–	–
Austenitic Stainless Steels				
Ergste 1.4301FC, PA, PT, PV, PW	1.4301	AISI 304	S30400	X5CrNi18-10
Ergste 1.4301VD	1.4301, 1.4307	AISI 304, AISI 304L	S30400	X5CrNi18-10
Ergste 1.4303SA	1.4303	AISI 305	S30500	X4CrNi18-12
Ergste 1.4305	1.4305	AISI 303	S30300	X8CrNiS18-9
Ergste 1.4305UA, UB	1.4305	~AISI 303	~S30300	X8CrNiS18-9
Ergste 1.4306LU	1.4306	AISI 304/AISI 304L	S30400/S30403	X2CrNi19-11/X5CrNi18-10
Ergste 1.4310FA, FB,FD, FE[6], FI, FV	1.4310	AISI 301/302	S30200	X10CrNi18-8
Ergste 1.4370WA	1.4370	–	–	X15CrNiMn18-8
Ergste 1.4374SN	1.4374	~AISI 202	~S20200	X8CrMnNiN18-9-5
Ergste 1.4401PA	1.4401	AISI 316	S31600	X5CrNiMo17-12-2
Ergste 1.4401SB	1.4401	AISI 316	S31600	X5CrNiMo17-12-2
Ergste 1.4404LB	1.4404	AISI 316L	S31603	X2CrNiMo17-12-2
Ergste 1.4404UA	~1.4404 (+S); 1.4598	–	–	X2CrNiMoCuS17-10-2
Ergste 1.4427UA	~1.4427	–	–	X12CrNiMoS18-11
Ergste 1.4435PM	1.4435	–	–	X2CrNiMo18-14-3
Ergste 1.4439LN	1.4439	–	–	X2CrNiMoN17-13-5
Ergste 1.4441LA[6], LN[6]	1.4441	~AISI 316L	S31673	X2CrNiMo18-15-3, ~316LVM
Ergste 1.4472RN	1.4472	–	S31675	X4CrNiMnMo21-9-4; Alloy 734 Rex 734™[1]
Ergste 1.4539LN, LW	1.4539	–	N08904	X1NiCrMoCu25-20-5, 904L
Ergste 1.4541TA, TB, TS	1.4541	AISI 321	S32100	X6CrNiTi18-10
Ergste 1.4567, LC	1.4567	–	S30433	X3CrNiCu18-9-4, XM-7
Ergste 1.4570UA	1.4570	–	S30331	X6CrNiCuS18-9-2
Ergste 1.4571LU, TA	1.4571	AISI 316Ti	S31635	X6CrNiMoTi17-12-2
Ergste 1.4578SC	1.4578	–	–	X3CrNiCuMo17-11-3-2
Ergste 1.4598UA	1.4598	–	–	X2CrNiMoCuS17-10-2
Ergste 1.4828ZA	1.4828	–	–	X15CrNiSi20-12
Ergste 1.4845	1.4845	AISI 310S	S31008	X8CrNi25-21
Ergste 1.4961PW	1.4961	~AISI 347H	~S34709	X8CrNiNb16-13
Ergste 1.4872ZA	1.4872	–	–	X25CrMnNiN25-9-7
Ergste 1.4980TA	1.4980	–	S66286	X6NiCrTiMoVB25-15-2
Ergste 9.9200GA	–	–	–	–
Ergste 9.9201FN	1.4372	AISI 201	S20100	X12CrMnNiN17-7-5
Ergste 9.9244PC	–	–	–	UGI 244
Ergste 9.9253ZA	–	–	–	–
Nickel-Free Austenitic Grades				
Ergste 1.3816CN	1.3816	–	–	X8CrMnN18-18
Ergste 1.4456CA	1.4456	–	–	X8CrMnMoN18-18-2
Ergste 9.9007CN	–	–	S29225	–
Stainless Steels Ferritic-Austenitic				
Ergste 1.4362	1.4362	–	S32304	X2CrNiN23-4
Ergste 1.4462	1.4462	–	S31803	X2CrNiMoN22-5-3
Ergste 1.4462XA	1.4462	–	S31803	X2CrNiMoN22-5-3

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4) is a registered trademark of our contracted manufacturer HAYNES International, Inc., Kokomo, Indiana, U.S.A.
5) X15TN is a registered trademark of Aubert Duval
6) ESR
7) Ergste, Ergitan, Ergiloy and Westig are registered trademarks of Zapp AG. Carbon steels for special applications in cold-rolled and hardened versions can be supplied to order. We welcome inquiries as per JIS and GOST.

CHOICE OF MATERIALS

ZAPP BRAND NAME	EN DIN	AISI	UNS	OTHER DESIGNATIONS/ TRADE NAMES
Precipitation Hardening Stainless Steels				
Ergste[7] 1.4542GE[6], GG	1.4542	AISI 630	S17400	X5CrNiCuNb16-4, 17-4 PH
Ergste 1.4543GG[6]	1.4543	–	S45500	X3CrNiCuTiNb12-9, XM-16; Alloy 455
Ergste 1.4568GA	1.4568	AISI 631	S17700	X7CrNiAl17-7, 17-7 PH
Ergste 9.9204AG	~1.4597	–	S20430	204Cu
Ergste 9.9455GG[6]	–	–	S45500	X3CrNiCuTiNb12-9, XM16, Custom 455
Nickel/Nickel Base Alloys				
Ergiloy[7] 2.4360HM	2.4360	–	N04400	NiCu30Fe, Monel® alloy 400[2]
Ergiloy 2.4631HN	2.4631	–	~N07080	~Nimonic® alloy 80A[2]
Ergiloy 2.4632HN	2.4632	–	N07090	Nimonic® alloy 90[2]
Ergiloy 2.4668HX	2.4868	–	–	–
Ergiloy 2.4669HX	2.4669	–	N07069, N07750	Inconel® X750[2]
Ergiloy 2.4816HN	2.4816	–	N06600	Inconel® alloy 600[2]
Ergiloy 2.4819HX	2.4819	–	N10276	–
Ergiloy 2.4858HX	2.4858	–	N08825	Incoloy® alloy 825[2]
Ergiloy 2.4856HS	2.4865	–	N06625	Inconel® 625[2]
Titanium/Titanium Alloys				
Ergitan[7] 3.7025MP, MG	3.7025	–	R50250	Grade 1 (Grade 1 ELI)
Ergitan 3.7035MG	3.7035	–	R50400	Grade 2
Ergitan 3.7055MG	3.7055	–	R50550	Grade 3
Ergitan 3.7065MG, MT	3.7065	–	R50700	Grade 4
Ergitan 3.7165MG	3.7165	–	R56401, R56407	Grade 5; Grade 23, Ti6Al4V (ELI)
Ergitan 3.7195MG	~3.7195	–	R56320	Grade 9, ~Ti3Al2,5V
Ergitan 9.9150MG	–	AISI 244	R58150	Ti-15Mo
Ergitan 9.9367MG	–	–	R56700	TiAl6Nb7
Cobalt-Base Alloys				
Ergiloy 9.9035HG	–	–	R30035	Co-Ni-Cr-Mo-Alloy MP35N®[2]
Ergiloy 9.9135HL, HN	–	–	R31537	CoCrMo Forging Alloy; CoCr28Mo Alloy 1
Ergiloy 9.9229HW	–	–	–	–
Ergiloy 9.9605XL	2.4964	–	R30605	L605®[3], Haynes®25 Alloy[4]
Ergiloy 2.4964HL	2.4964	–	R30605	Co-Cr-W-Ni-Alloy; L605®[3]; Haynes® 25 Alloy[4]

1) Rex 734™ is a product and trademark of ATI Allvac.
2) MP35N®, Nimonic®, Inconel® and Monel® are trademarks of SPS Technologies, LLC in the EU and the U.S.A.
3) L605® is a product and registered trademark of SPS Technologies, LLC in the EU.
4) is a registered trademark of our contracted manufacturer HAYNES International, Inc., Kokomo, Indiana, U.S.A.
5) X15TN is a registered trademark of Aubert Duval
6) ESR
7) Ergste, Ergitan, Ergiloy and Westig are registered trademarks of Zapp AG. Carbon steels for special applications in cold-rolled and hardened versions can be supplied to order. We welcome inquiries as per JIS and GOST.

»Training at Zapp was my first choice.«

»I started my training as a process mechanic at Zapp last year. This was the perfect opportunity for me to start my professional career with a solid foundation. I am really enjoying it and I have already learned a lot. Sometimes it is not easy to meet the requirements and to fulfill the tasks correctly. But thanks to the great support of my colleagues, it always works out. We as trainees are made aware right from the start that the customer expects an excellent product.
Therefore, we give our best – of course.«

DURAN YILDIRIM, TRAINEE
SCHWERTE LOCATION, GERMANY

FERD. WAGNER PROFILE – PRECISION AS TRADITION

MORE THAN 4,000 GEOMETRIES GO INTO CREATING A PROFILE

Ferd. Wagner Profile, the specialist for precision profiles and flat wires offers more than 4,000 geometries for all industries and is a renowned supplier of eye rim profiles and fret wires for guitar and model rail tracks.

DIMENSIONS AND TOLERANCES

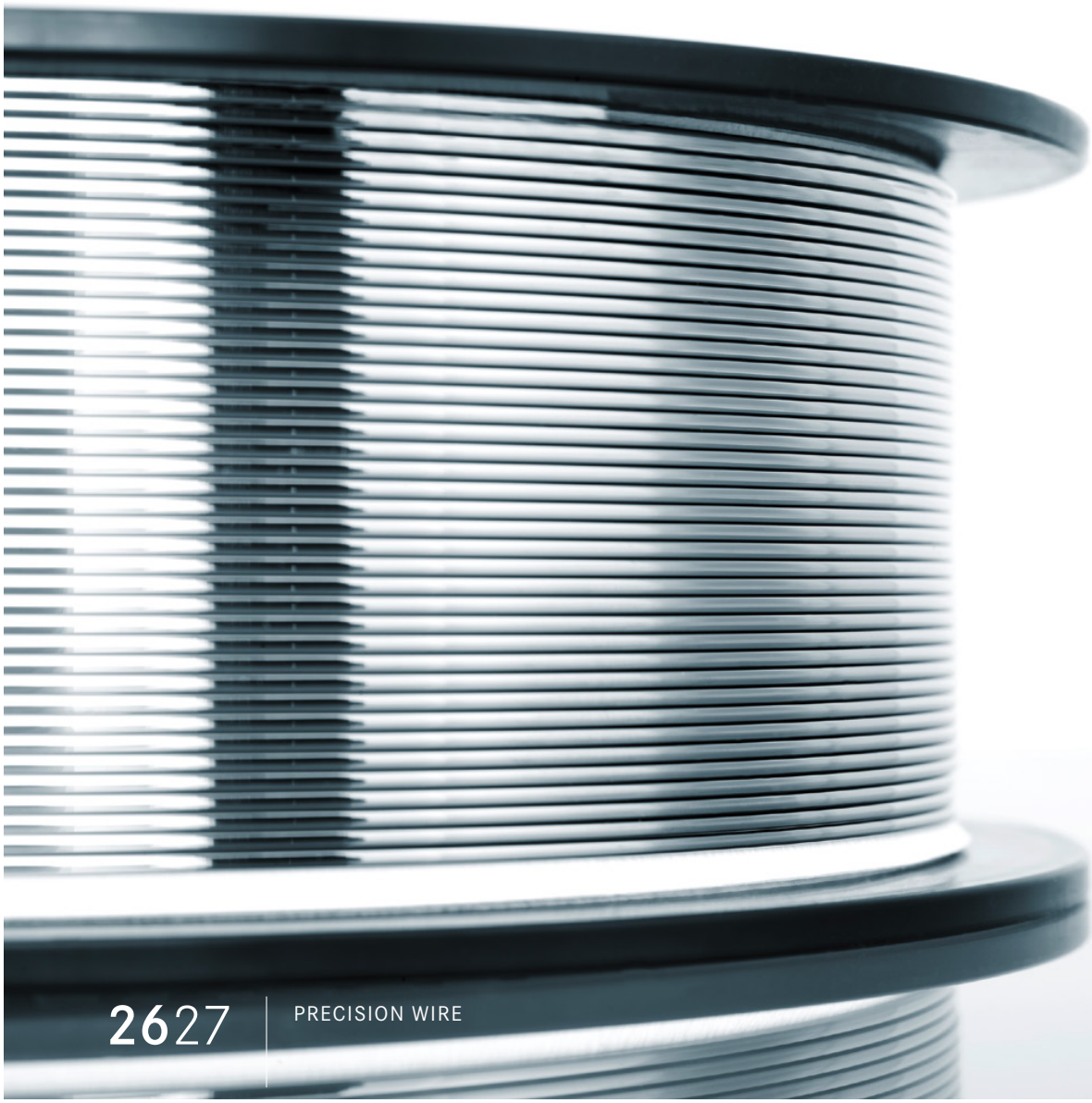
With profile thicknesses of 0.0016 – 0.16" (0.04 – 4 mm) and profile widths of 0.016 – 0.39" (0.04 – 10.00 mm), (in the ratio 1/10), we are your ideal partner for close tolerances, if you have special requirements regarding geometries, dimensions and tolerances.

WIDE CHOICE OF MATERIAL

You can choose from a wide range of materials e.g. Monel, stainless steel, titanium, heat treatable alloys and others. We supply you with Ferd. Wagner Profile's »Super Finish« for optimized further processing. Repolishing and the scrap rate can be minimized thanks to this surface.

FLEXIBILITY

With our own in house tooling department, we provide our clients with a thorough product feasibility check and can realize new geometries within the shortest possible time, at a reasonable cost, for any industry and application. Your demand is our inspiration.

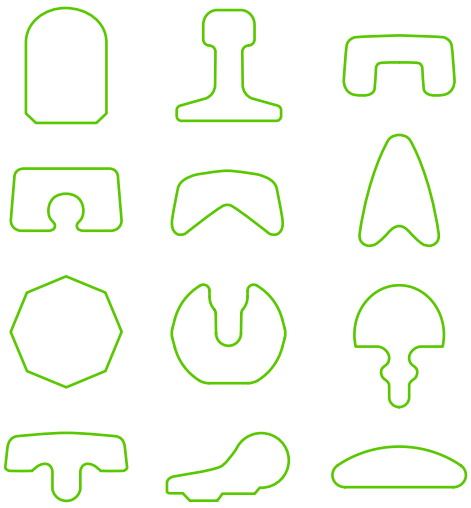


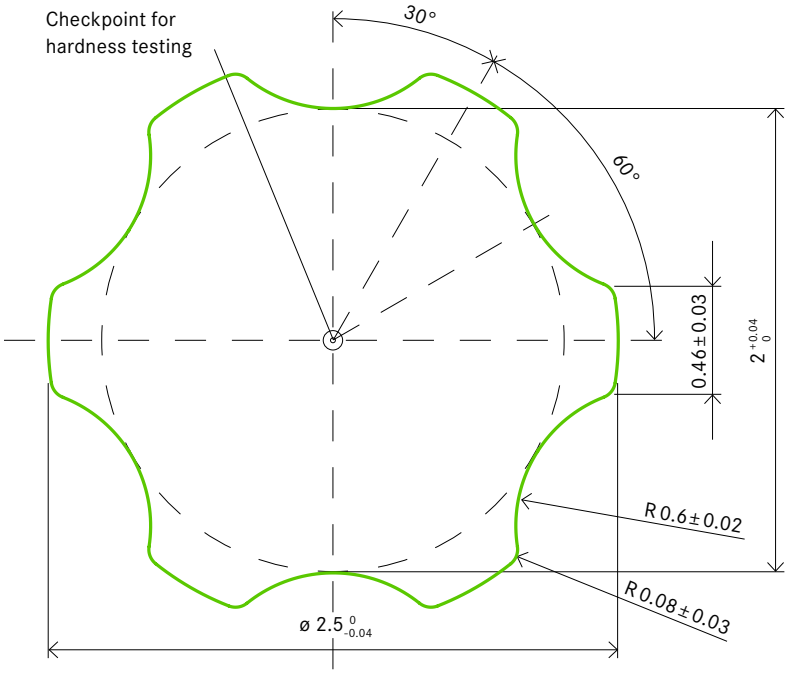
CHOICE OF MATERIALS

ZAPP MATERIAL	DIN	AISI
Stainless Steel		
Ergste[1] 1.3816	1.3816	–
Ergste 1.4016	1.4016	AISI 430
Ergste 1.4303	1.4303	AISI 305
Ergste 1.4305	1.4305	AISI 303
Ergste 1.4310	1.4310	AISI 301, AISI 302
Ergste 1.4404LB	1.4404LB	AISI 316L
Ergste 1.4404UA	1.4404UA	AISI 316L
Ergste 1.4435	1.4435	AISI 316L
Ergste 1.4456	1.4456	–
Pure Titanium and Titanium Alloys		
Titan Grade 2	3.7035	–
Ti3A12.5V	3.7195	–
Beta Titan 15.333	Not standardized	–
Bronze Alloys		
CuSn6	2.1020	–
CuSn8	2.1030	–
Copper Based Materials		
CuNi12Zn24	2.0730	–
CuNi18Zn20	2.0740	–
Nickel Based Materials		
CuNi40Mn5	Not standardized	–
NiCu30Fe (Monel[2])	2.4360	–
NiCr11	Not standardized	–
Precipitation Hardening Alloys		
CuNi9Sn6	Not standardized	–
CuNi11Sn6	Not standardized	–
CuNi13Sn8	Not standardized	–

1) Ergste® is a registered tradename of Zapp AG.
2) Monel® is a registered trademark of SPS Technologies, LLC in the EU and the U.S.A.

SELECTION OF PROFILE DESIGNS





»Always keep moving.«

»A more than 300-year Zapp success story is meant be continued in a fast-paced time like today, when we're always on the move – both technically and mentally. This includes the continuous development of our product portfolio, its extension to future-oriented industries and to the corresponding materials. This is linked to the development and expansion of further growth regions, as well as the continuous search for special applications for our customers, in which material or semi-finished innovations are required.

As Managing Director, it is very important to me that we continuously improve and expand our production technologies, logistics systems, product qualities, our services, and thus our service to you. Only the combination of all these components, combined with the corresponding investments to strengthen technological core competencies, makes us a reliable and modern company that is always on the move. Because progress can only be achieved through movement.«

DR. TILLA HAUBOLD-SMITH
MANAGING DIRECTOR ZAPP SYSTEMS GMBH

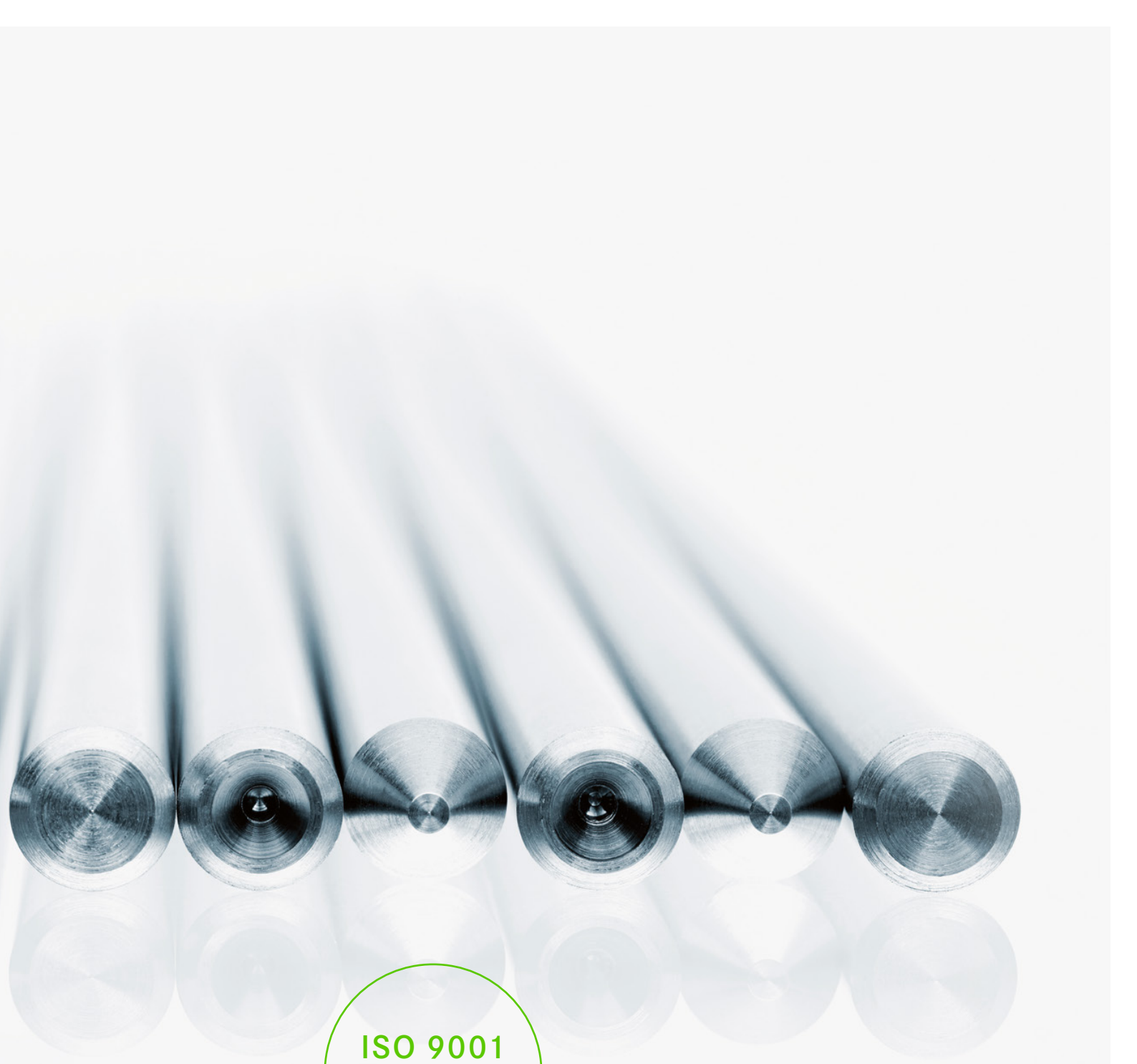
ZAPP CERTIFICATES AND APPROVALS

ISO 50001

FOR THE ZAPP GROUP
GERMANY

IATF 16949

FOR AUTOMOTIVE APPLICATIONS
OF PRECISION WIRE
GERMANY



ISO 9001

FOR THE ZAPP GROUP

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