

YOUR VITAL PARTNER FOR LIFE-CHANGING SOLUTIONS

EXERA™ FINE MEDICAL WIRE AND WIRE BASED COMPONENTS FOR MEDICAL APPLICATIONS







DESIGNING MEDICAL DEVICES? LET US INSPIRE YOU

At Sandvik we develop, manufacture and refine precision medical wire under the brand name EXERATM. We also develop the wire-based components you need, based on decades of expertise and fresh, innovative minds. We undertake the research and development of new and existing materials and offer a high level of competence spanning the entire value chain.

A DOSE OF INSPIRATION FROM A CREATIVE PARTNER

Take advantage of our creativity and let us become an integral part of your research and development process. We can help you conceive and implement innovative solutions that make a drastic difference to the lives of those who utilize your devices. Naturally you want the best possible materials and at Sandvik quality is paramount. We leverage time-tested procedures to maintain the highest standards for our EXERA™ fine medical wire products. We also understand the importance of agility in our design process as we continually implement lean initiatives to increase quality and decrease variability.

As your partner in the design process, we strive to integrate operations and maintain responsive and comprehensive interaction with you. Together, we can design a process and product that cannot be found anywhere else in the world. Let us inspire your product innovation.

FROM MELTING POT TO MEDICAL



As one of the world's leading metal producers and metallurgy pioneers we have strict control over our supply chain. This also means that advances and adaptations occur fast here. In other words, at Sandvik, innovation literally begins from the ground up.

DIAMOND PRECISION



EXERA™ ultra high quality wires are a result of quality diamond dies. Our in-house die craftsmen and women utilize a combined experience of over 100 years to put the precise art of die making at your service. It's this type of painstaking attention to detail that makes Sandvik unique.

COMPLETE SERVICE PROVIDER



We seek to provide value at every step of the medical device design and manufacturing process. From precision tolerance coating, to multi-filar micro cables, we strive to provide you with not only a supplier, but a business partner.



EXERATM CUSTOM WIRE SOLUTIONS FOR UNIQUE APPLICATIONS

SINGLE WIRE CONFIGURATIONS

All alloys can be provided in single strand form, with or without coating, and plated with custom thicknesses of gold or nickel.



Multilayer including Bond Coating

Electroplated and Polymer Finish

Coated Ribbon Wire



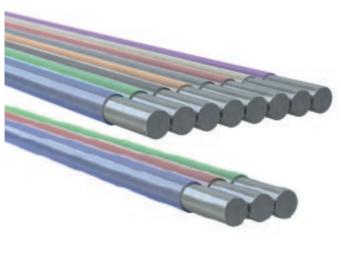
Multilayer including Bond Coating Round, flat, square wire configurations.



Pure PTFE Coating

MULTI-FILAR ARRANGEMENTS

Single strand wire configurations can also be formed into multi-filar or microcable arrangements.



Multi-Filar Configurations

CABLE CONFIGURATIONS

Single strand and multi-filar cables can then be manipulated into different cable configurations. Coatings, such as PTFE or polymer can be applied to any cable arrangement.





Coated Finished Cable

Twisted Multi-Filar Cables

VALUE ADDED OPERATIONS

Value added coiling operations such as lead finishing, where wire is stripped and formed, are important components of our service portfolio.

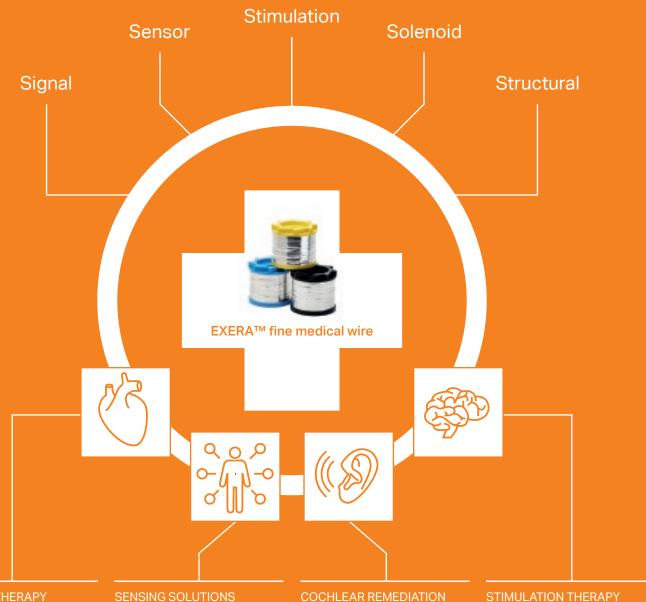


Depictions show only our most popular offerings. Please visit our website or talk to a representative for more information.

WHERE MATERIALS CAN IMPROVE THE QUALITY OF LIFE

We currently partner with many large and small OEM's and universities to design and develop the products of the future, taking advantage of the unique properties of our EXERATM fine medical wire. As a starting point for your concept development, here are some key areas where we already provide value.

Vision – Applications / Ideas / Concepts



VASCULAR THERAPY

Wire for heart solutions, including guide wires, catheter applications and pacing leads. Solutions for information gathering including pressure, glucose and thermal

Solutions for middle ear implants for sensorineural hearing loss.

Wire for deep brain, spine, and other stimulation applications.

AMPLIFYING YOUR POSSIBILITIES

As your development and business partner we will have a vested interest in the success of your process and products. This is why we strive to offer a uniquely diverse portfolio of manufacturing capabilities. We invite you to collaborate directly with our engineers and manipulate and modify our capabilities to exceed your needs.

WIRE REFINEMENT



REDUCTION
Drawing



ALLOY COMPOSITION
Uniform and Cored



FORMINGRound and Rectangular



SIZE AND TOLERANCE
Size: 0.0004" to 0.032" / 0.01 mm to 0.82 mm
Tolerance up to: 0.000025 in / 0.000635 mm

SURFACE TREATMENT



WIRE COATING
Standard and Custom



REEL TO REEL PLATING
Nickel and Gold



Aluminum

ANODIZING



ELECTROPOLISHINGPremium Surface Finishes

VALUE ADDED OPERATIONS



SPECIAL HANDELING

Clean Room Processing



MECHANICAL ASSEMBLY

Single Strand and Cable



CUT TO LENGTH

Single Strand and Cable



LEAD FINISHING

Stripping and Forming



COILING

Freestanding and Spring



TWISTING AND STRANDING

Custom Cable Solutions



PACKAGING

Spools and Bobbins



STRAIGHTENING

Mechanical or Thermal Treatment

OPERATIONAL SERVICES



RESEARCH AND DEVELOPMENT

Custom Process/
Product Development



LAB TESTING

Unique Procedural Competance



INVENTORY MANAGEMENT

Safety Stock Programs



LEAN PROCESS OPTIMIZATION

Kanban Applications



METALLURGY CONSULTING

Materials Selection Assistance



RAPID PROTOTYPING

Custom Cable Solutions



NEW PROCEDURE DEVELOPMENT

Spools and Bobbins



TECHINCAL TRAINING

Mechanical or Thermal Treatment

SAMPLES



SAMPLE PACKAGE

Round and Rectangular



DEVELOPER KIT

Round and Rectangular

ESSENTIAL RESOURCES FOR TODAY'S MEDICAL SOLUTIONS

PRIMARY ALLOYS

MEDICAL GRADE/STAINLESS STEELS

MP35N™

MP35N™ Composite Wire

304V 316LV

Sandvik 11R51 / 11R51HV (EN 1.431) Sandvik 12R10 / 12R10HV (EN 1.431)

Sandvik 1RK91 (ASTM A693, F899)

PRECIOUS METALS

Gold Silver Platinum

Platinum Iridium Platinum Tungsten Gold Plated Copper

Platinum Clad Tantalum

SENSOR ALLOYS

Constantan Copper

KANTHAL® RESISTANCE ALLOYS

Nikrothal® 80 80%Ni/20%Cr

Nikrothal® 60 60%Ni/16%/balance iron

Nikrothal® 40 35%Ni/20%/2% silicone balance iron

Nikrothal® LX 20%Cr/75%Ni

Kanthal® A-1 22%Cr/5.8%Al/balance iron Kanthal® AE 22%Cr/5,3%Al/balance iron Kanthal® AF 22%Cr/5.3%Al/balance iron Kanthal® D 22%Cr/4,8%Al/balance iron Alkrothal™ 15%Cr/4,3%Al/balance iron Cuprothal® 49 44%Ni balance copper Cuprothal® 30 23%Ni balance copper Cuprothal® 15 11%Ni balance copper Cuprothal® 10 6%Ni balance copper Cuprothal® 5 2.2%Ni balance copper Nifethal™ 70 30%Ni/balance iron Nifethal™ 36 36%Ni/balance iron

COATING MATERIALS

COATINGS FOR USE AS PERMANENT AND TEMPORARY IMPLANT

Polyurethanes

Polyesterimide

PTFE

Polyester-imides

FEP

Nylon (top coat)

Aminide Polyesters Polyimide

LARC SI Polyimide

THERMAL BONDCOATS

THERMOPLASTIC COATINGS FOR BONDING WIRES TOGETHER AS MULTI-FILAR OR FREE STANDING COILS

Thermoplastic Polyvinyl Butyral

Thermoplastic Epoxy
Thermoplastic Polyamide

Thermoplastic Polyamide-imide



NEMA MW 1000: DIMENSIONAL STANDARDS

INSULATED ROUND MAGNET WIRE

BARE WIR	E DIAMETE	R (INCHES)	SINGLE BUILD	INSULATION	l	HEAVY BUILD	HEAVY BUILD INSULATION			TRIPLE BUILD INSULATION			
Minimum	Nominal	Maximum	Min. Increase in Diameter	Nominal Thickness	Maximum Thickness	Min. Increase in Diameter	Nominal Thickness	Maximum Thickness	Min. Increase in Diameter		Maximum Thickness		
0.0282	0.0285	0.0288	0.0011	0.0298	0.0303	0.0022	0.0309	0.0314	0.0033	0.0321	0.0326		
0.0250	0.0253	0.0256	0.0011	0.0266	0.0270	0.0021	0.0276	0.0281	0.0032	0.0288	0.0293		
0.0224	0.0226	0.0228	0.0010	0.0239	0.0243	0.0020	0.0249	0.0253	0.0030	0.0259	0.0264		
0.0199	0.0201	0.0203	0.0010	0.0213	0.0217	0.0019	0.0223	0.0227	0.0029	0.0233	0.0238		
0.0177	0.0179	0.0181	0.0009	0.0190	0.0194	0.0018	0.0199	0.0203	0.0027	0.0209	0.0214		
0.0157	0.0159	0.0161	0.0009	0.0170	0.0173	0.0017	0.0178	0.0182	0.0026	0.0188	0.0193		
0.0141	0.0142	0.0143	0.0008	0.0153	0.0156	0.0016	0.0161	0.0164	0.0024	0.0169	0.0173		
0.0125	0.0126	0.0127	0.0008	0.0137	0.0140	0.0016	0.0144	0.0147	0.0023	0.0152	0.0156		
0.0112	0.0113	0.0114	0.0007	0.0123	0.0126	0.0015	0.0130	0.0133	0.0022	0.0138	0.0142		
0.0099	0.0100	0.0101	0.0007	0.0109	0.0112	0.0014	0.0116	0.0119	0.0021	0.0124	0.0128		
0.0088	0.0089	0.0090	0.0006	0.0097	0.0100	0.0013	0.0105	0.0108	0.0017	0.0110	0.0114		
0.0079	0.0080	0.0081	0.0006	0.0088	0.0091	0.0012	0.0095	0.0098	0.0016	0.0099	0.0103		
0.0070	0.0071	0.0072	0.0005	0.0078	0.0081	0.0011	0.0085	0.0088	0.0014	0.0088	0.0092		
0.0062	0.0063	0.0064	0.0005	0.0070	0.0072	0.0010	0.0075	0.0078	0.0013	0.0079	0.0082		
0.0055	0.0056	0.0057	0.0004	0.0062	0.0064	0.0009	0.0067	0.0070	0.0012	0.0071	0.0074		
0.0049	0.0050	0.0051	0.0004	0.0056	0.0058	0.0008	0.0060	0.0063	0.0011	0.0064	0.0067		
0.0044	0.0045	0.0046	0.0003	0.0050	0.0052	0.0008	0.0055	0.0057	0.0010	0.0057	0.0060		
0.0039	0.0040	0.0041	0.0003	0.0045	0.0047	0.0007	0.0049	0.0051	0.0009	0.0051	0.0054		
0.0034	0.0035	0.0036	0.0002	0.0039	0.0041	0.0006	0.0043	0.0045	0.0008	0.0045	0.0048		
0.0030	0.0031	0.0032	0.0002	0.0035	0.0037	0.0006	0.0038	0.0040	0.0008	0.0041	0.0043		
0.0027	0.0028	0.0029	0.0002	0.0031	0.0033	0.0005	0.0034	0.0036	0.0007	0.0037	0.0039		
0.0024	0.0025	0.0026	0.0002	0.0028	0.0030	0.0004	0.0030	0.0032	0.0007	0.0033	0.0035		
0.0021	0.0022	0.0023	0.0002	0.0025	0.0026	0.0004	0.0027	0.0029	0.0006	0.0030	0.0032		
0.0019	0.0020	0.0021	0.0001	0.0022	0.0024	0.0004	0.0025	0.0027	0.0006	0.0027	0.0029		
0.00169	0.00176	0.0018	0.00010	0.0019	0.00205	0.00030	0.00215	0.00230					
0.00151	0.00157	0.0016	0.00010	0.0017	0.00185	0.00030	0.00196	0.00210					
0.00135	0.00140	0.0015	0.00010	0.0016	0.00170	0.00030	0.00178	0.00190					
0.00119	0.00124	0.0013	0.00010	0.0014	0.00150	0.00020	0.00155	0.00170					
0.00107	0.00111	0.0012	0.00010	0.0012	0.00130	0.00020	0.00139	0.00150					
0.00095	0.00099	0.00103	0.00010	0.0011	0.00120	0.00020	0.00128	0.00140					
0.00085	0.00088	0.00092	0.00010	0.0010	0.00110	0.00020	0.00117	0.00129					
0.00075	0.00078	0.00081	0.00010	0.0009	0.00100	0.00020	0.00105	0.00115					
0.00067	0.00070	0.00073	0.00005	0.0008	0.00085	0.00013	0.00092	0.00103					
0.00060	0.00062	0.00065	0.00005	0.0007	0.00075	0.00013	0.00084	0.00095					
0.00053	0.00055	0.00057	0.00005	0.0006	0.00070	0.00013	0.00077	0.00087					
0.00047	0.00049	0.00051	0.00005	0.0006	0.00065	0.00013	0.00071	0.00081					
0.00042	0.00044	0.00046	0.00004	0.0005	0.00056								
0.00038	0.00039	0.00041	0.00004	0.0005	0.00051								
	Minimum 0.0282 0.0250 0.0224 0.0199 0.0177 0.0157 0.0141 0.0125 0.0112 0.0099 0.0070 0.0062 0.0055 0.0049 0.0044 0.0039 0.0034 0.0030 0.0027 0.0021 0.0019 0.00169 0.00151 0.00195 0.00199 0.00107 0.00095 0.000075 0.00095	Minimum Nominal 0.0282 0.0285 0.0250 0.0226 0.0199 0.0201 0.0177 0.0159 0.0141 0.0142 0.0125 0.0126 0.0112 0.0113 0.0099 0.0100 0.0088 0.0089 0.0079 0.0063 0.0070 0.0063 0.0044 0.0045 0.0039 0.0040 0.0034 0.0035 0.0039 0.0040 0.0034 0.0035 0.0039 0.0040 0.0030 0.0031 0.0027 0.0028 0.0029 0.0021 0.0021 0.0022 0.0015 0.00176 0.00151 0.00157 0.00152 0.00140 0.00153 0.00140 0.00154 0.00157 0.00155 0.000140 0.00151 0.00157 0.000152 0.000140	Minimum Nominal Maximum 0.0282 0.0285 0.0288 0.0250 0.0253 0.0256 0.0224 0.0226 0.0228 0.0199 0.0201 0.0203 0.0177 0.0179 0.0181 0.0157 0.0159 0.0161 0.0141 0.0142 0.0143 0.0125 0.0126 0.0127 0.0112 0.0113 0.0114 0.0099 0.0100 0.0101 0.0088 0.0089 0.0090 0.0079 0.0080 0.0081 0.0070 0.0071 0.0072 0.0062 0.0063 0.0064 0.0055 0.0056 0.0057 0.0049 0.0050 0.0051 0.0049 0.0050 0.0051 0.0049 0.0045 0.0046 0.0039 0.0040 0.0041 0.0039 0.0040 0.0041 0.0027 0.0028 0.0029 0.0027	Minimum Nominal Maximum Min. Increase in Diameter 0.0282 0.0285 0.0288 0.0011 0.0250 0.0253 0.0256 0.0010 0.0199 0.0201 0.0203 0.0010 0.0177 0.0179 0.0181 0.0009 0.0157 0.0159 0.0161 0.0009 0.0125 0.0126 0.0127 0.0008 0.0112 0.0113 0.0114 0.0007 0.0099 0.0100 0.0101 0.0007 0.0088 0.0089 0.0090 0.0066 0.0079 0.0080 0.0081 0.0006 0.0079 0.0080 0.0081 0.0006 0.0079 0.0080 0.0081 0.0006 0.0070 0.0071 0.0072 0.0005 0.0062 0.0063 0.0064 0.0005 0.0040 0.0046 0.0003 0.0044 0.0045 0.0046 0.0003 0.0039 0.0040 0.0041 <t< td=""><td>Minimum Nominal Maximum Min. 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Increase Nominal in Diameter Thickness Maximum Thickness Maximum Thickness Maximum Diameter Thickness Diameter Thickness Diameter Diameter	Minimum Nominal Maximum Minimum Minimum Minimum Minimum Maximum Minimum Maximum Minimum Mini		

Sizes finer than 44 AWG based on the theoretical resistance (10.371 Ohms-Circular Mil/foot) of a copper conductor.

The nominal coated wire thickness is based on the average of the minimum coating thickness increase on a minimum bare wire diameter and the maximum coated wire thickness.

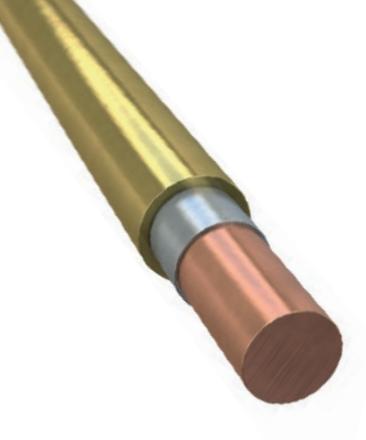
SINGLE BUILD SELF-BONDING WIRE

AWG	BARE WIRE NOMINAL DIAMETER		MAXIMUM IN INSULATION	CREASE IN DIAMETER	MINIMUM INC	REASE THERMOPLASTIC	MAXIMUM OV	MAXIMUM OVERALL DIAMETER	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
21	0.02850	0.7240	0.0011	0.0280	0.00050	0.0130	0.03140	0.7980	
22	0.02530	0.6430	0.0011	0.0280	0.00050	0.0130	0.02810	0.7140	
23	0.02260	0.5740	0.0010	0.0250	0.00050	0.0130	0.02530	0.6430	
24	0.02010	0.5110	0.0010	0.0250	0.00050	0.0130	0.02270	0.5770	
25	0.01790	0.4550	0.0009	0.0230	0.00050	0.0130	0.02030	0.5160	
26	0.01590	0.4040	0.0009	0.0230	0.00050	0.0130	0.01820	0.4620	
27	0.01420	0.3610	0.0008	0.0200	0.00050	0.0130	0.01640	0.4170	
28	0.01260	0.3200	0.0008	0.0200	0.00050	0.0130	0.01470	0.3730	
29	0.01130	0.2870	0.0007	0.0180	0.00040	0.0100	0.01330	0.3380	
30	0.01000	0.2540	0.0007	0.0180	0.00040	0.0100	0.01190	0.3020	
31	0.00890	0.2260	0.0006	0.0150	0.00040	0.0100	0.01080	0.2740	
32	0.00800	0.2030	0.0006	0.0150	0.00040	0.0100	0.00980	0.2490	
33	0.00710	0.1800	0.0005	0.0130	0.00040	0.0100	0.00880	0.2240	
34	0.00630	0.1600	0.0005	0.0130	0.00030	0.0080	0.00780	0.1980	
35	0.00560	0.1420	0.0004	0.0100	0.00030	0.0080	0.00700	0.1780	
36	0.00500	0.1270	0.0004	0.0100	0.00030	0.0080	0.00630	0.1600	
37	0.00450	0.1140	0.0003	0.0080	0.00030	0.0080	0.00570	0.1450	
38	0.00400	0.1020	0.0003	0.0080	0.00020	0.0050	0.00510	0.1300	
39	0.00350	0.0890	0.0002	0.0050	0.00020	0.0050	0.00450	0.1140	
40	0.00310	0.0790	0.0002	0.0050	0.00020	0.0050	0.00400	0.1020	
41	0.00280	0.0710	0.0002	0.0050	0.00020	0.0050	0.00360	0.0910	
42	0.00250	0.0640	0.0002	0.0050	0.00020	0.0050	0.00320	0.0810	
43	0.00220	0.0560	0.0002	0.0050	0.00010	0.0025	0.00290	0.0740	
44	0.00200	0.0510	0.0001	0.0025	0.00010	0.0025	0.00270	0.0690	
45	0.00176	0.0447	0.0001	0.0025	0.00010	0.0025	0.00230	0.0584	
46	0.00157	0.0399	0.0001	0.0025	0.00010	0.0025	0.00210	0.0533	
47	0.00140	0.0356	0.0001	0.0025	0.00010	0.0025	0.00190	0.0483	
48	0.00124	0.0315	0.0001	0.0025	0.00010	0.0025	0.00170	0.0432	
49	0.00111	0.0282	0.0001	0.0025	0.00010	0.0025	0.00150	0.0381	
50	0.00099	0.0251	0.0001	0.0025	0.00010	0.0025	0.00140	0.0356	
51	0.00088	0.0224	0.0001	0.0025	0.00010	0.0025	0.00130	0.0330	
52	0.00078	0.0198	0.0001	0.0025	0.00005	0.0013	0.00115	0.0292	
53	0.00070	0.0178	0.0001	0.0025	0.00005	0.0013	0.00107	0.0271	
54	0.00060	0.0152	0.0001	0.0025	0.00005	0.0013	0.000995	0.0253	
55	0.00050	0.0127	0.0001	0.0025	0.00005	0.0013	0.000985	0.0250	
56	0.00040	0.0102	0.0001	0.0025	0.00005	0.0013	0.000975	0.0248	

[•] Sizes finer than 44 AWG based on the theoretical resistance (10.371 Ohms-Circular Mil/foot) of a copper conductor.
• AWG sizes 53 to 56 are not standard NEMA dimensions.

WIRE GAUGES

Wire Gauge	es (AWG or l	B&S)	Standard Wire Gauge (SWG)				
Gauge no	inch	mm	inch	mm	Gauge no		
4-0	0.460	11.68	0.400	10.16	4-0		
3-0	0.410	10.40	0.372	9.45	3-0		
2-0	0.365	9.27	0.348	8.84	2-0		
0	0.325	8.25	0.324	8.23	0		
1	0.289	7.35	0.300	7.62	1		
2	0.258	6.54	0.276	7.01	2		
3	0.229	5.83	0.252	6.40	3		
4	0.204	5.19	0.232	5.89	4		
5	0.182	4.62	0.212	5.38	5		
6	0.162	4.11	0.192	4.88	6		
7	0.144	3.67	0.176	4.47	7		
8	0.129	3.26	0.160	4.06	8		
9	0.114	2.91	0.144	3.66	9		
10	0.102	2.59	0.128	3.25	10		
11	0.0907	2.30	0.116	2.95	11		
12	0.0808	2.05	0.104	2.64	12		
13	0.0720	1.83	0.0920	2.34	13		
14	0.0641	1.63	0.0800	2.03	14		
15	0.0571	1.45	0.0720	1.83	15		
16	0.0508	1.29	0.0640	1.63	16		
17	0.0453	1.15	0.0560	1.42	17		
18	0.0403	1.02	0.0480	1.22	18		
19	0.0359	0.912	0.0400	1.02	19		
20	0.0320	0.812	0.0360	0.914	20		
21	0.0285	0.723	0.0320	0.813	21		
22	0.0254	0.644	0.0280	0.711	22		
23	0.0226	0.573	0.0240	0.610	23		
24	0.0201	0.511	0.0220	0.559	24		
25	0.0179	0.455	0.0200	0.508	25		
26	0.0159	0.405	0.0180	0.457	26		
27	0.0142	0.361	0.0164	0.417	27		
28	0.0126	0.321	0.0148	0.376	28		
29	0.0113	0.286	0.0136	0.345	29		
30	0.0100	0.255	0.0124	0.315	30		
31	0.00893	0.227	0.0116	0.295	31		
32	0.00795	0.202	0.0108	0.274	32		
33	0.00708	0.180	0.0100	0.254	33		
34	0.00631	0.160	0.00920	0.234	34		
35	0.00562	0.143	0.00840	0.213	35		
36	0.00500	0.127	0.00760	0.193	36		
37	0.00445	0.113	0.00680	0.173	37		
38	0.00397	0.101	0.00600	0.152	38		

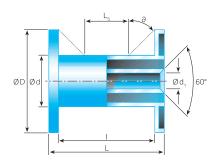


Wire Gauge	es (AWG or E	3&S)	Standard Wire Gauge (SWG)				
Gauge no	inch	mm	inch	mm	Gauge no		
39	0.00353	0.0897	0.00520	0.132	39		
40	0.00315	0.0799	0.00480	0.122	40		
41	0.00280	0.0711	0.00440	0.112	41		
42	0.00249	0.0633	0.00400	0.102	42		
43	0.00222	0.0564	0.00360	0.0914	43		
44	0.00198	0.0502	0.00320	0.0813	44		
45	0.00176	0.0447	0.00280	0.0711	45		
46	0.00157	0.0398	0.00240	0.0610	46		
47	0.00140	0.0355	0.00200	0.0508	47		
48	0.00124	0.0316	0.00160	0.0406	48		
49	0.00111	0.0281	0.00120	0.0305	49		
50	0.000986	0.0250	0.00100	0.0254	50		
51	0.000800	0.0203	0.000878	0.0223	51		
52	0.000600	0.0152	0.000782	0.0199	52		
53	0.000500	0.0127	0.000697	0.0177	53		
54	0.000400	0.0102	0.000620	0.0157	54		
55	0.000300	0.00762	0.000552	0.0140	55		
56			0.000492	0.0125	56		
57			0.000438	0.0111	57		
58			0.000390	0.00991	58		
59			0.000347	0.00881	59		
60			0.000309	0.00785	60		

SPOOLS

AMERICAN STANDARD

SPOOL TYPE	D in	d in	d1 in	Lin	l in	WIRE TYPE
2.125" Flange	2.125	1.375	5/8	1.375	1	0.0005 - 0.002
2.5 " Flange	2.5	1.76	5/8	3.376	3	0.007 - 0.0031
3.15" Flange	3.15	1.97	5/8	3.15	2.52	0.002 - 0.0063
3.5" Flange	3.5	2.125	2.125	2.438	2.125	
5" Flange	5	3	5/8	4.11	3.5	0.0035 - 0.113
6" Flange	6	3.5	5/8	4.11	3.5	0.005 - 0.0253
PT 4 Tapered	5.5 & 4.875	4.375 & 3.875	1	7.875	6.688	0.003 - 0.008
PT10 Tapered	7.087 X 6.300	4.331 X 3.780	1	9	7.875	0.004 - 0.010
12" Reel	11.75	8	2	3.938	3.62	
Anodized Band Spool	2.24	1.98	1.93	1.1	1	Bonding wire



METRIC

SPOOL TYPE	D mm	d mm	d1 mm	L mm	l mm	WIRE SIZE, mm ø	NORMAL NET WEIGHT, kg
C 1/4	64	44	16	61	51	<0.030	0.05 - 0.25
C 1/2	64	44	16	86	76	0.030 - 0.099	0.5
B 1	75	40	16	120	100	0.1 – 0.199	1.0
B 2	90	40	16	120	100	0.20 - 0.25	2.0
B 4	120	50	16	120	100	0.26 - 0.50	4.0

STANDARD DIN SPOOLS

SPOOL TYPE	D mm	d mm	d1 mm	L mm	l mm	WIRE SIZE, mm ø	NORMAL NET WEIGHT, kg
DIN 50	50	32	11	50	38	0.015 - 0.04	0.10
DIN 63	63	40	11	63	49	0.015 - 0.04	0.20
DIN 80	80	50	16	80	64	0.05 - 0.099	0.75
DIN 100	100	63	16	100	80	0.10 - 0.50	1.5
DIN 125	125	80	16	125	100	0.15 – 0.80	3.0
DIN 160	160	100	22	160	128	0.25 - 0.71	5.0
DIN 200	200	125	36	200	160	0.4 – 0.81	10.0
DIN 250	250	160	36	200	160	0.4 – 1.5	20
DIN 355	355	225	36	200	162	1.0 – 3.0	40
SK 460	460	318	305	105	91	0.25 – 1.8	45

STEEGER BOBBINS

Sizes D / d x I
40 / 30 x 26 mm
40 / 16 x 26 mm
43 / 25 x 26 mm

Other spool options available







A HISTORY RICH IN METALLURGICAL **INNOVATION**

For over 150 years, Sandvik has maintained a world-leading position in materials engineering and manipulation. Our operations are based on unique expertise in molecular technology and extensive insight into industrial processes. We invest substantially in research and development and maintain close cooperation with our customers and suppliers. From our beginning as a pioneer in malleable steel with the perfecting of the Bessemer method, to our commitment to high value-added products in advanced steels and special alloys, we continue to set the industry standard.

ONE-STOP-SHOPPING FOR WORLD-CLASS QUALITY

In addition to offering your team a dose of inspiration, we have the capability to fulfill all your needs in terms of the highest quality fine medical wire. We have control of the entire value chain, from meltshop to end-product.

ALL YOU NEED FROM ONE PARTNER

Source all you need from one reliable supplier. It saves time and reduces costs. As an innovative niche producer of EXERA™ fine medical wire and wire based components for advanced medical applications, we offer a comprehensive program of the highest quality fine wire custommade to meet your design needs.

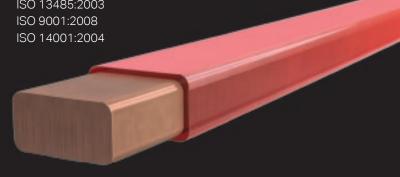
EXERA™ fine medical wire comes in different grades of stainless steel, precious metals and a range of other materials. The wire is available with a wide selection of coatings and surface treatments, such as anodizing and electroplating.

SANDVIK VALUE

- EXERATM fine medical wire with highest precision and quality
- · Friendly and responsive customer service
- Flexible lead times
- Highest quality medical coatings
- Partnering with world-class OEMs

CERTIFICATIONS

ISO 13485:2003 ISO 9001:2008



EIGHT GOOD REASONS TO CHOOSE SANDVIK

- **4** AN INNOVATIVE PARTNER
 - It pays to choose a supplier with innovative thinking to be your joint research and development partner who also can play a vital role in your team.
- MATERIAL SCIENCE EXPERTISE

 Let your projects benefit from our unmatched expertise in metallurgy and medical wire production. We have extensive research and development and materials capabilities and offer a comprehensive product portfolio.
- A RESPONSIVE SUPPLIER
 Your business deserves a flexible partner who will adjust to your design and production schedules and provide excellent customer service with short lead times.
- FINANCIALLY STRONG
 You can benefit from a financially strong single-source partner for medical wire and wire-based medical components who can help you achieve long-term sustainable growth.
- 5 STRICT QUALITY ASSURANCE
 There are major quality benefits for your business if, like us, your supplier has control of the entire value chain, from meltshop to end-product.
- 6 LEAN STATE OF MIND
 We are leading the way in process improvement and continually strive to increase quality, while decreasing waste and variability.
- WITH US, SIZE DOES NOT MATTER
 Whatever the size of your order or organization, large or small, we want to work closely with you, from the development stage through to mass production.
- VALUE ADDED CAPABILITIES

 We can also give you added value in the form of cut-to-length orders, twisted leads, micro cables, thermocouple sensors, coils, and more.

Over 150 years of experience at your service

SANDVIK With Sandvik you get the advantage of working with a small, agile, custom, precision wire manufacturer in the Palm Coast production unit, and the backing of the globally integrated and $% \left(1\right) =\left(1\right) \left(1\right) \left($ resource rich Sandvik Group. SANDVIK PALM COAST 1 COMMERCE BLVD PALM COAST, FL 32164 USA S-WI064-B-ENG 09.2016. Printed in Sweden E-mail: ms.spc@sandvik.com Phone: +1 386-445-2000 WWW.SANDVIKPALMCOAST.COM