



Stainless Steel Wires

KEI
Stainless Steel Wires



KEI

Wires and Cables
The power behind the power

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Stainless Steel Wire Bright Annealed For Hose Braiding, Weaving, Knitting Etc.

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Introduction

KEI Industries Limited an ISO 9001:2015, ISO 14001:2015, OHSAS: 18001:2007 accredited company, started production of Stainless Steel Wires in 1994. Since its beginning KEI has used state-of-the-art technology with strong emphasis on product quality and customer satisfaction. As a result of continuous improvement in every aspect of business within a short span of time, KEI has become one of the leading manufacturers & exporters of Stainless Steel Wires in Northern India. Continuous product innovation with regular upgradation of product process has earned KEI a reputed name in the domestic and international market. KEI exports its products to various countries like United Kingdom, USA, Mexico, European Countries, Africa, Australia and the far east.

KEI's Stainless Steel Wire division has a manufacturing capacity of 7200 Mt per year ranging from wire diameter 6.00 mm to 0.10 mm in various grades like AISI 304, 304L, 316, 316L, 302, 321, 304HQ, 302CHQ, 430, 434 and Electrodes grades AWS 308L, 309L, 316L, 310, 312, 430L. These wires are available with different properties such as soft, quarter hard, half hard, ¾ hard, full hard, depending upon its final application, and surface finishes such as bright, matt, coated, decoated and as per customer's specification.

DNV-GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No: 98931-2011-HSO-IND-DNV Initial certification date: 30, June, 2011 Valid: 30, June, 2017 - 29, June, 2020

This is to certify that the management system of

KEI Industries Ltd.
919, 920 & 922, RIICO Industrial Area, Phase III, Bhiwadi - 301 019, District: Alwar, Rajasthan, India
and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Occupational Health and Safety Management System standard:
OHSAS 18001:2007

This certificate is valid for the following scope:
Design, development, manufacture and services of cables, wires & conductors viz., HT/EHV/LT power, control, instrumentation, thermocouples, elastomeric cables, winding & flexible wires and stainless steel wires for wide range of applications

Place and date:
Chennai, 30, January, 2018






For the issuing office:
DNV GL - Business Assurance
ROMA, No. 10, GST Road, Alandur,
Chennai - 600 016, India



Sivadasan Madiyath
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
CERTIFYING UNIT: DNV GL BUSINESS ASSURANCE INDIA PRIVATE LIMITED, ROMA, No. 10, GST Road, Alandur, Chennai, 600 016, India.



DNV BUSINESS ASSURANCE

MATERIAL MANUFACTURE CERTIFICATE

Certificate No. **6663-2015-CE-IND**
This certificate consists of 2 pages.

This is to verify that

KEI Industries Ltd.

SP-920, RIICO Industrial Area, Phase III, Bhiwadi 301019, Alwar, Rajasthan, India

for

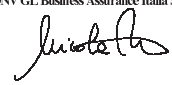
Austenitic Stainless Steel Wires

has implemented and is maintaining a certified quality assurance system which has undergone a specific assessment for materials for applications covered by Directive 97/23/EC on Pressure Equipment, and is found to comply with annex 1, section 4.3, for acceptance of type 3.1 material certificates according to EN 10204:2004.

Further details are given in the following pages.

This certificate is valid until
2018-07-05

Place and date
Vimercate (MB), 2015-07-17
for the Notified Body 0496
DNV GL Business Assurance Italia S.r.l.



Nicola Privato
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
DNV GL BUSINESS ASSURANCE INDIA PRIVATE LIMITED, ROMA, No. 10, GST Road, Alandur, Chennai, 600 016, India.
Page 1 of 2

Quality Policy

- Manufacture & deliver products consistently complying with the customer requirement.
- Focusing on continual improvements & technological up-gradation in various activities aimed at achieving objectives
- Active employee participation by creating a suitable environment towards achieving total customer satisfaction.



DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No: 1365-2007-AQ-IND-RVA Initial certification date: 12, December, 2000 Valid: 30, June, 2017 - 29, June, 2020

This is to certify that the management system of

KEI Industries Ltd.
919, 920 & 922, RIICO Industrial Area, Phase III, Bhiwadi - 301 019, District: Alwar, Rajasthan, India
and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:
Design, development, manufacture and services of cables, wires & conductors viz., HT/EHV/LT power, control, instrumentation, thermocouples, elastomeric cables, winding & flexible wires and stainless steel wires for wide range of applications

Place and date:
Chennai, 30, January, 2018




The RVA is a signatory to the IAF MLA

For the issuing office:
DNV GL - Business Assurance
ROMA, No. 10, GST Road, Alandur,
Chennai - 600 016, India



Sivadasan Madiyath
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV GL Business Assurance B.V., ZWOLSEVEG 1, 2994 LB, BARENDRECHT, NETHERLANDS. TEL: +31102922689.
assurance.dnvgl.com

DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No: 98930-2011-AE-IND-Rva Initial certification date: 30, June, 2011 Valid: 30, June, 2017 - 29, June, 2020

This is to certify that the management system of

KEI Industries Ltd.
919, 920 & 922, RIICO Industrial Area, Phase III, Bhiwadi - 301 019, District: Alwar, Rajasthan, India
and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Environmental Management System standard:
ISO 14001:2015

This certificate is valid for the following scope:
Design, development, manufacture and services of cables, wires & conductors viz., HT/EHV/LT power, control, instrumentation, thermocouples, elastomeric cables, winding & flexible wires and stainless steel wires for wide range of applications

Place and date:
Chennai, 30, January, 2018




The RVA is a signatory to the IAF MLA

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ROMA, No. 10, GST Road, Alandur,
Chennai - 600 016, India



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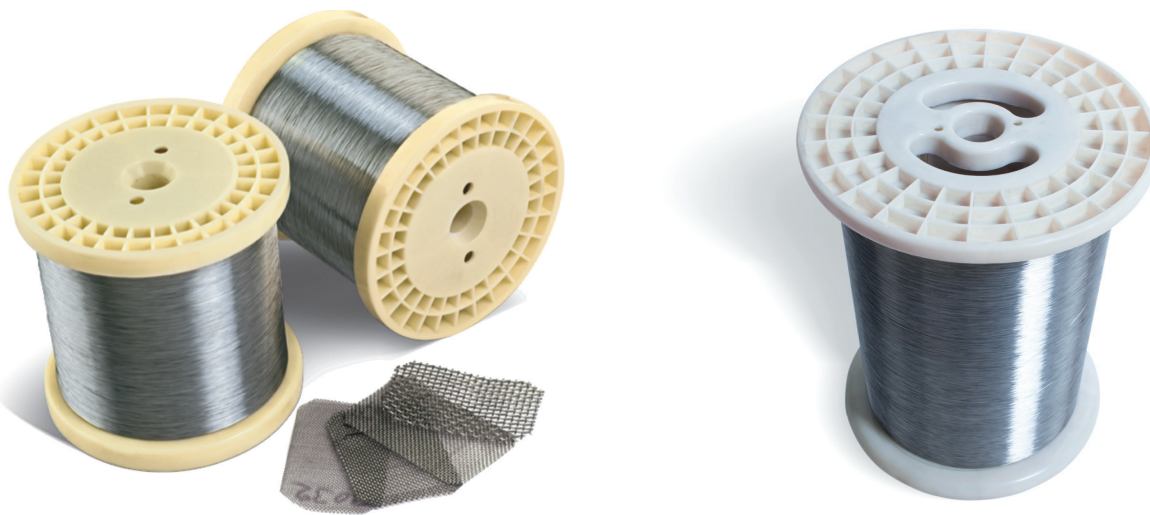
Stainless Steel Wire

STAINLESS STEEL WIRES FOR WEAVING, HOSES, BRAIDING, FILTERS, FENCING, KNITTING, CONVEYOR BELT, REDRAWING WIRE, etc.

KEI has the ability to manufacture wire in various applications and achieve mechanical properties, to customer's application. The grades suitable for these applications are 304, 304L, 316, 316L. The surface finish of wires can be bright or matt finished and high resistance to corrosion. Having regular winding pitch and tension, they are manufactured under strict process control.

STAINLESS STEEL WIRES FOR KNITTING

KEI's Stainless Steel Wire for knitting application is equipped with the mechanical properties (elongation, tensile strength, yield strength) and good lubrication for high productivity.



MECHANICAL PROPERTIES

Dia (mm)	AISI 304, 316, 304L, 316L	
	Tensile Strength N/mm ² (Kgf/mm ²)	Elongation (%)
0.10 - 0.16	900 max (92 max)	30 min
0.17 - 0.22	875 max (89 max)	30 min
0.23 - 0.40	850 max (87 max)	35 min
0.41 - 0.70	825 max (85 max)	40 min
0.71 - 1.60	800 max (82 max)	40 min
1.61 - 5.25	800 max (82 max)	45 min

Stainless Steel Wire

STAINLESS STEEL WIRES FOR WALL TIE/TYING WIRES/ RE-INFORCEMENT BARS

KEI's Stainless Steel Wire find application in construction industry. KEI manufactures Stainless Steel Wires in grades of 302, 304, 316, 316Ti, in bright as well as annealed condition, suitable to manufacture wall tie, tying wires as well as re-inforcement bars for building and construction. The sizes offered are 0.9mm to 0.8mm.



DIAMETER TOLERANCES

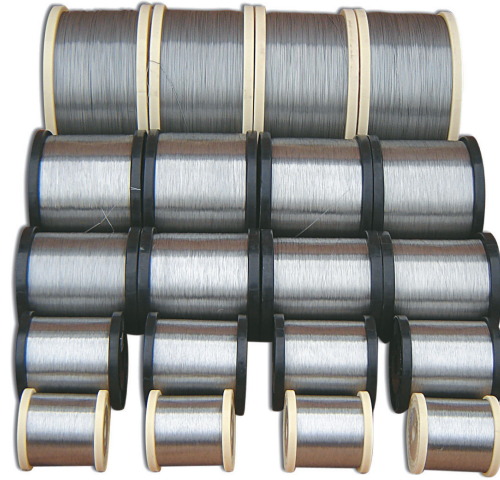
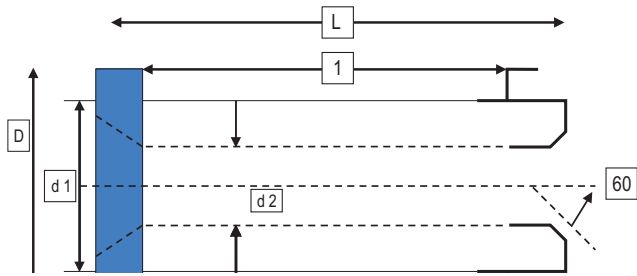
Dia (mm)	Tolerance (mm)	Ovality (mm)
0.10 - 0.11	+/- 0.003	0.003
0.12 - 0.16	+/- 0.005	0.005
0.17 - 0.28	+/- 0.007	0.007
0.29 - 0.50	+/- 0.010	0.010
0.51 - 0.90	+/- 0.013	0.013
0.91 - 0.60	+/- 0.020	0.020
1.61 - 2.80	+/- 0.030	0.030
2.81 - 5.5	+/- 0.030	0.030

STAINLESS STEEL - EPQ QUALITY WIRE

Dia (mm)	Tolerance (mm)	Mechanical properties	Coil weight (kg)
0.60 - 1.40	+/- 0.01	1/8 & 1/4 hard	80 kgs max
1.50 - 6.00	+/- 0.025	1/8 & 1/4 hard	300 kgs max

Packaging

PLASTIC SPOOLS AS PER DIN SPECIFICATIONS WITH THE DIMENSIONS



MECHANICAL PROPERTIES

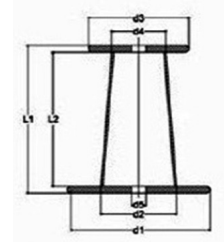
DIN	Nominal Wt. (gms)	Barrel Dia (mm)	Bore Dia (mm)	Overall Width (mm)	Traverse Length	Coil weight (kg)	Wire Weight (kgs)	Wire Range (mm)
	(gms)	D	D1	D2	L	L	(kgs)	(mm)
125	200	125	80	16	125	100	2	0.10-0.25
160	350	160	100	22	160	128	6	0.12-0.50
200	600	200	125	22	200	160	12	0.20-0.70
250	1050	250	160	22	200	160	20	0.30-0.80
355	1850	355	224	36	200	160	45	0.70-1.20

SPECIFICATIONS FOR SOFT ANNEALED WIRES IN COILS

Wire Dia Range (mm)	Coil Diameter in inches		Coil Wt. (Kgs.)		Surface Finish	Total Ht Formers+ Pallets (inches)	Total Wt. on Formers (Kgs.)
	ID	OD	Min	Max			
5.50-2.50	18-22	25-30	100	500	MATTE	65	1000
2.49-1.60	18-22	25-30	100	500	MATTE	65	1000
1.59-1.00	12-14	20-24	50	100	MATTE	65	500

Packaging

Spool	Flange Dia. mm	Barrel Dia mm	Bore Dia	Over all length	Traverse mm	Wire Weight (Kg)	Wire Range (mm)
PT-25	225/210	128/108	32	278	248	25	0.15-0.30

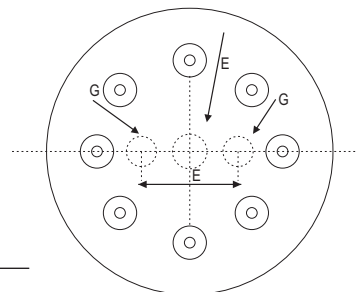
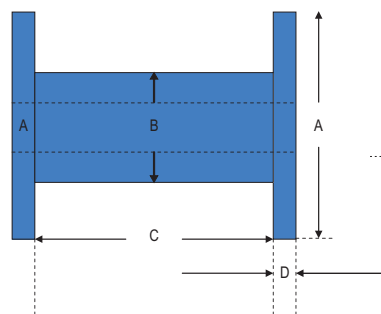


FIBRE BOARD DRUM

Size ranges (mm)	Drum Dimensions	Inches	Weight of wire (Kg)
0.80 – 1.60	OD 20" Core 12"	HT 36"	250 Kg max.

WOODEN SPOOL - FOR 1/4, 1/2, 3/4 AND FULL HARD-WIRES

Flange Dia	Barrel Dia	Traverse	Flange Flick	Centre Bore	PCD	Dughole Dia	Net Wt.
A	B	C	D	E	F	G	H
560	350	300	24	45	220	20	200 kg.
760	430	280	40	40	220	20	300 kg.
+/-5	+/-3	+/-3	+/-1	+/-2	+/-2	+/-1	



Full Hard 3/4, 1/2, 1/4 hard wire.
Diameter ranges: 0.60 - 6.00mm.

Welding Wire

WIRES FOR WELDING ELECTRODES

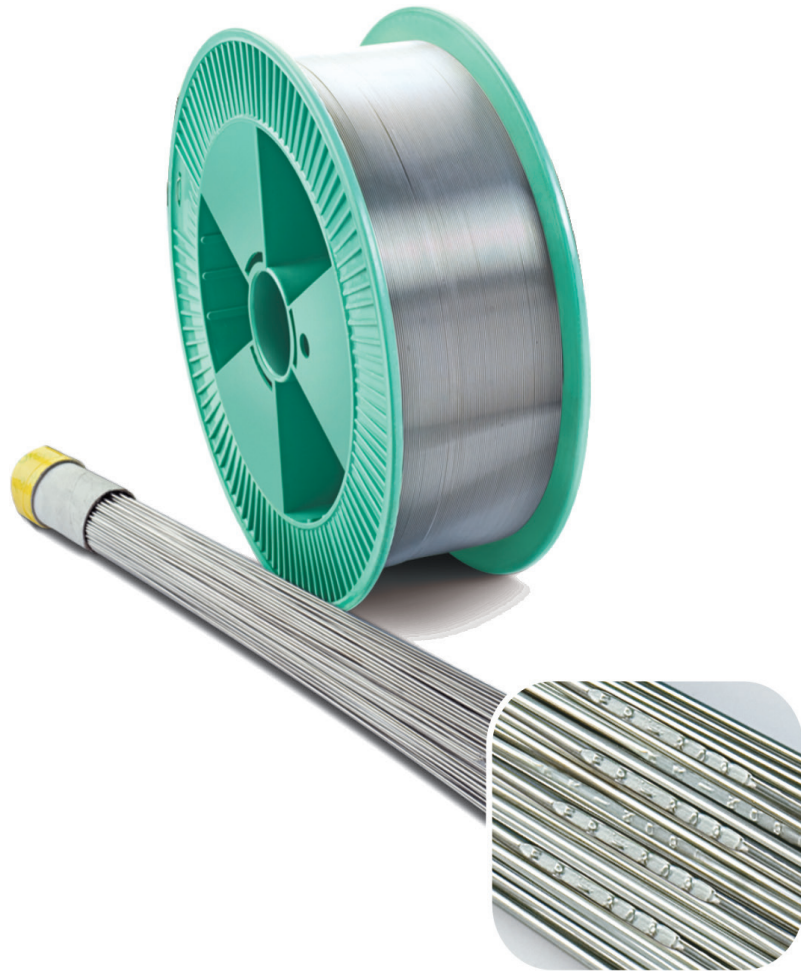
KEI's Stainless Steel Wire for Welding Electrodes is manufactured having excellent mechanical properties, under strict guidance of technocrats. The diameter ranges from 1.60mm to 5.00mm in matt & bright finish and can supply in coil as well as in cut length. The commonly manufactured grades are AWS ER308, ER308L, ER310, ER312, ER316, ER316L.

FILLER WIRE (TIG AND MIG)

KEI's Stainless Steel Wires for TIG in straight length and MIG Wires on spools, layer wound, TIG & MIG Wires are supplied in clean bright and matt finish. In grades are AWS ER308, ER308L, ER309, ER309L, ER310, ER312, ER316 and ER316L.

TIG Wire diameter ranges from 1.60mm to 5.00mm and in length upto 1000mm.

MIG Wire diameter ranges from 0.800mm to 1.600mm and in weight spools upto 12.50kg. apx.



WHEN SHOULD I USE 308L, 309L OR 316L, 430L FILLER METAL?

308L (including ER308LSi) is predominately used on austenitic stainless steels, such as types 301, 302, 304, 305 and cast alloys CF-8 and CF-3. For high temperature applications such as in the electrical power industry, the high carbon 308H electrode provides better creep resistance than 308L.

316L (including ER316LSi) filler metal should be used with 316L and 316 base metals. CF-8M and CF-3M are the cast equivalents of 316 and 316L, respectively.

Use 309L (including ER309LSi) when joining mild steel or low alloy steel to stainless steels, for joining dissimilar stainless steels such as 409 to itself or to 304L stainless, as well as for joining 309 base metal. CG-12 is the cast equivalent of 309. Some 308L applications may be substituted with 309L filler metal, but 316L or 316 applications generally require Molybdenum and 309L contains no Molybdenum.

Type 430 stainless steel filler metal is ideal for 430 base materials because it matches these stabilized grades. CF-8C is the cast equivalent of 430. Type 430 filler metal is also suitable for most 308L filler metal applications.

Cold Heading Wire

WIRE FOR COLD HEADING

KEI's Stainless Steel Wire for Cold Heading is made by special heat treatment. Copper-bearing austenitic steel 302CHQ, 304HQ, normal 304 and 430 are also used for cold heading fasteners.

SPECIAL CHARACTERISTICS

With excellent corrosion resistance and mechanical strength, it is the most suitable material for bolts, screws and other fasteners and has marked work hardening characteristics.

SUPPLY CONDITIONS

KEI wires are coated to ensure smooth heading operation conditions. Cold drawn and Annealed, Cold drawn, Annealed and skin pass or as per customer's requirement with very fine tolerance.



MECHANICAL PROPERTIES

Type	Grade	Annealed finish		Light drawn	
		Tensile Strength N/mm ² (Kgf/mm ²)	Elongation (%)	Tensile Strength N/mm ² (Kgf/mm ²)	Elongation (%)
Austenite	AISI 304/316	590-740 (60-75)	40 over	650-800 (66-81)	20
	AISI 302HQ	440-590 (45-60)	40 over	460-640 (47-65)	20
Ferrite	AISI 430	390-540 (40-55)	20 over	460-640 (47-65)	5

MECHANICAL PROPERTIES

Dia (mm)	Tolerance (mm)	Ovality (mm)
0.80-1.90	+0.00 - 0.02	0.010
2.00-3.50	+0.00 - 0.03	0.015
3.51- 5.25	+0.00 - 0.04	0.020

MECHANICAL PROPERTIES

Type	Grade	Diameter	Surface Finish
Austenite	AISI 304 AISI 302HQ	1.50 & Above	De-coated wire or stearate coated
	AISI 316	1.50 & Above	
Ferrite	AISI 430	0.80- 1.60	Bright finish
		1.70 & Above	Matt finish

Spring Hard Quality Wire

SPRING WIRES

KEI's Stainless Steel Wire for Springs are manufactured having excellent mechanical properties (surface, cast & helix) manufactured under strict guidance of technical personnel. The diameter ranges from 0.19 mm to 1.20 mm in bright finish and 0.50 mm to 6.0mm in matt finish (coated) in grade of AISI 302, 304 & 316, 321, Standard ASTM A313 and others.



ROPE WIRES

KEI's Stainless Steel Wire for Rope Wires are manufactured having excellent mechanical properties, under strict guidance of technical personnel. The diameter ranges from 0.19 mm to 1.20mm in bright finish and 0.50 mm to 6.00 mm in matt finish (de-coated) in grade of AISI 304, 316, 321 rope specs.

STAINLESS STEEL WIRE FOR SPRINGS HAS FOLLOWING CHARACTERISTICS

- Excellent Surface Finish
- High Corrosion Resistance
- Superior Coiling Efficiency
- High Fatigue Strength

Stainless Steel Wire for Spring is made from the selected steel. In particular to provide optimum spring efficiency, this type of wire is meticulously finished to eliminate flaws.

OVALITY OF THE WIRE

The arithmetic difference between the two measurements of the diameter shall be not more than half the tolerance specified in table 1.

TENSILE GRADES

The tensile grades of wires are:

- 1570 N/mm² for wires of all qualities
- 1770 N/mm² for bright wires quality B
- 1960 N/mm² for bright wires quality B

These nominal values are lower limits of strength. The upper limits are equal to the lower limits in addition to the tolerance specified in table 2.

Table 1- Tolerances on diameter

Nominal Dia of wire <i>d</i>	Tolerance on diameter
mm	mm
0.2 < <i>d</i> < 0.4	±0.01
0.4 < <i>d</i> < 0.6	±0.015
0.8 < <i>d</i> < 0.1	±0.02
1 < <i>d</i> < 6	±0.02
1.6 < <i>d</i> < 2.4	±0.03
2.4 < <i>d</i> < 3.7	±0.03
3.7 < <i>d</i> < 5.2	±0.04
5.2 < <i>d</i> < 6	±0.05

Table 2 – Tolerances on tensile grade

Nominal Dia of wire <i>d</i>	Tolerance on tensile grade
mm	mm
0.2 < <i>d</i> < 0.5	390
0.5 < <i>d</i> < 1	350
1 < <i>d</i> < 1.5	320
1.5 < <i>d</i> < 2	290
2 < <i>d</i>	260

Note: Other tensile grades may be used on agreement between the manufacturer and the supplier.


REVERSE BEND STRENGTH

This test applies only to wire of nominal diameter between 0.5 mm inclusive and 3.7 mm inclusive. For wires of nominal diameter less than 0.5 mm, the wire shall withstand without breaking the minimum number of reverse bends specified in table 3 for the appropriate diameter, tensile grade and finish. The radius of curvature for the supports for the various wire diameters is also given. If the tensile grade of a wire lies between two tensile grades given in Table 3, then the number of reverse bends for the next upper tensile grade shall be chosen.

Note: The reverse bend test is not mandatory for wires to correspond with this international standard.

Spring Hard Quality Wire

MECHANICAL PROPERTIES

DIN	Nominal Wt.	Barrel Dia (mm)	Bore Dia (mm)	Overall Width (mm)
	0.40 – 0.85	300	300 – 450	90 under
	0.90 – 1.40	400	400 – 600	100 under
	1.50 – 6.00	600	600 – 900	100 under

CAST AND HELIX (PITCH)

Nominal dia of wire d (mm)	Radius of Curvature of Supports (mm)	Minimum of reverse bends			
		Quality B			Quality A
		Tensile grade			
	1570	1770	1960	1570	
0.5 < d < 0.55	1.75	15	14	13	-
0.55 < d < 0.6		14	13	12	-
0.6 < d < 0.65		12	11	10	-
0.65 < d < 0.7		11	10	9	-
0.7 < d < 0.75	2.5	15	14	13	12
0.75 < d < 0.8		14	13	12	11
0.8 < d < 0.85		13	12	11	10
0.85 < d < 0.9		11	10	9	8
0.9 < d < 0.95		10	9	8	7
0.95 < d < 1		10	9	8	7
1 < d < 1.1	3.75	15	14	13	12
1.1 < d < 1.2		13	12	11	10
1.2 < d < 1.3		12	11	10	9
1.3 < d < 1.4		10	9	8	7
1.4 < d < 1.5		9	8	7	6
1.5 < d < 1.6		12	11	10	9
1.6 < d < 1.7	5	11	10	9	8
1.7 < d < 1.8		10	9	8	7
1.8 < d < 1.9		9	8	7	6
1.9 < d < 2		8	7	6	5
2 < d < 2.1		13	12	11	10
2.1 < d < 2.2		12	11	10	9
2.2 < d < 2.3	7.5	11	10	9	8
2.4 < d < 2.5		10	9	8	7
2.5 < d < 2.6		9	8	7	6
2.6 < d < 2.7		8	7	6	5
2.7 < d < 3		7	6	5	4
3 < d < 3.1		11	10	9	8
3.1 < d < 3.2	10	10	9	8	7
3.2 < d < 3.3		9	8	7	6
3.3 < d < 3.4		9	8	7	6
3.4 < d < 3.5		8	7	6	5
3.5 < d < 3.6		7	6	5	4
3.6 < d < 3.7		7	6	5	4

PACKING (COIL WT AND COIL DIA FOR HARD WIRES)

Full Hard Kgs				
From	To	ID"	OD"	Coil Wt Max
0.40	0.85	8	16	30
0.90	1.40	14	22	60
1.50	6.00	18	30	250

Wires for General Purpose

PRODUCT RANGE

Stainless Steel Wires are used in Engineering, Chemical, Construction and many other industries besides various types of application in manufacturing of KITCHEN WARES, ORNAMENTS, UTENSILS, WALL TIE/TYING WIRES. Stainless Steel Wires at KEI are manufactured as per INTERNATIONAL STANDARDS as well as in accordance with customer's specifications.

SPECIAL CHARACTERISTICS

- Produced from Wire Rods meeting International Standards
- Supplied in annealed, 1/8 hard, 1/4 hard & 1/2 hard, 3/4 hard, full hard conditions
- Drawn to very close tolerance limit
- Excellent surface finish
- Quality checked at each process stage



CHEMICAL COMPOSITION

Available in complete range of Stainless Steel as per AISI, DIN, JIS and BS standards.

WIRE FOR SCRUBBER

KEI's Stainless Steel Wire for Scrubber application has very bright smooth finish and its extra softness enables further cold working by the customers.

SPECIFICATIONS FOR SCRUBBER APPLICATION IN SPOOL PACKAGING

Diameter (mm)	Type of Spool	Unit Weight (kg)
0.80	DIN 355, DIN 250	40 - 45, 18 - 22
0.12 to 0.15	DIN 160, DIN 125	3 - 6, 1.5 - 3
0.15	DIN 200	8 - 12

SPECIFICATIONS FOR SCRUBBER APPLICATION IN SPOOL PACKAGING

Diameter	Grade	Tensile Strength N/mm ² (kgf/mm ²)	Finish Method
0.8	AISI 304	640 - 830 (65 - 85)	Annealed
	AISI 430 AISI 434	490 - 640 (50 - 65)	
0.12 to 0.15	AISI 304	Max 785 (Max 80)	Annealed
0.12 to 0.15	AISI 430 AISI 434	Min 1170 (Min 120)	Wet Drawn

PACKING SPECIFICATION FOR SCRUBBER APPLICATION IN DRUM PACKING

Size ranges (mm)	Drum	Dimensions	Inches	Weight of wire (kg)
0.80-1.20	OD 22"	Core 12"	HT 36"	200

Wires for General Purpose

WIRE (EPQ) FOR KITCHENWARE AND BASKETS

KEI has the ability to manufacture Stainless Steel Wires in bright as well as in matt finish, suitable for kitchenware and basket, grade AISI 304, in various sizes. KEI is a major market player of wires in Electropolish quality, Balls, Pins, Nails and other general application.

MECHANICAL PROPERTIES ALONG WITH PACKING DETAILS SPECIFICATION FOR 1/8, 1/4, 1/2, 3/4 HARD TEMPER WIRES

MECHANICAL PROPERTIES

Temper	Wire dia range	Coil dia		Coil Weight	Surface Finish	Total Wt. on Former
		ID	OD			
1/8 hard 130	mm	ID	OD	kg		kg
	KSI Max.	18-22	25-30	250-400	Bright / Matt	1000
	4.50-6.00	18-22	25-30	100-200	Stearate coated	1000
	4.50-6.00	18-22	25-30	100-200	Matt (clean)	1000
	4.50-6.00	18-22	25-30	250-400	Bright	1000
	2.00-4.50	18-22	25-30	100-200	Stearate Coated	1000
	2.00-4.50	18-22	25-30	100-200	Matt (clean)	1000
	2.00-4.50	18-22	25-30	250-400	Bright	1000
	1.50-2.00	18-22	25-30	100-200	Stearate Coated	1000
	1.50-2.00	18-22	25-30	100-200	Matt (clean)	1000
	1.50-2.00	18-22	25-30	250-400	Bright	1000
	0.90-1.40	14-16	19-22	50-100	Stearate Coated	500
	0.90-1.25	14-16	19-22	50-100	Matt (clean)	500
	0.90-1.40	14-16	19-22	50-100	Bright	500
1/4 hard 160 KSI Max.	4.50-6.00	18-22	25-30	100-200	Stearate coated	1000
	4.50-6.00	18-22	25-30	100-200	Matt (clean)	1000
	4.50-6.00	18-22	25-30	250-400	Bright	1000
	2.00-4.50	18-22	25-30	100-200	Stearate Coated	1000
	2.00-4.50	18-22	25-30	100-200	Matt (clean)	1000
	2.00-4.50	18-22	25-30	250-400	Bright	1000
	1.50-2.00	18-22	25-30	100-200	Stearate Coated	1000
	1.50-2.00	18-22	25-30	100-200	Matt (clean)	1000
	1.50-2.00	18-22	25-30	250-400	Bright	1000
	0.90-1.40	14-16	19-22	50-100	Stearate Coated	500
	0.90-1.25	14-16	19-22	50-100	Matt (clean)	500
	0.90-1.25	14-16	19-22	50-100	Bright	500

Stainless Steel Wire-Grades Chemical Composition

CHEMICAL COMPOSITION

For different applications and products, different grades of stainless steel is used. KEI Industries keeps a very strict check on the chemical composition of its raw materials to reassure its customer's needs. The standard chemical composition of some grades of Stainless Steel offered by KEI Industries is given below.

TYPE AISI	C Max	Mn Max	P Max	S Max	Si Max	Cr	Ni	Cu	Mo
	%	%	%	%	%	%	%	%	%
202	0.15	7.5-10.0	0.06	0.03	1.00	17-19	4-6	—	—
204Cu	0.15	6.5-9.0	0.06	0.03	1.00	15.5-17.5	1.5-3.5	2-4	1.00
302	0.12	2.00	0.045	0.030	1.00	17.0/19.0	8.0/10.0	—	—
302HQ	0.03	2.00	0.045	0.030	1.00	17.0/19.0	9.0/10.0	3.0/4.0	—
303	0.12	2.00	0.200	0.15/0.35	1.00	17.0/19.0	8.0/10.0	—	—
304	0.08	2.00	0.045	0.030	1.00	18.0/20.0	8.0/10.0	—	—
304Cu	0.08	2.00	0.045	0.03	1.00	17-19	8-10	3-4	—
304L	0.03	2.00	0.045	0.030	1.00	18.0/20.0	8.0/12.0	—	—
316	0.08	2.00	0.045	0.030	1.00	16.0/18.0	10.0/14.0	—	2.0/3.0
316LN	0.03	2.00	0.045	0.030	1.00	16.5/18.5	11.0/14.0	—	2.0/3.0
316L	0.03	2.00	0.045	0.030	1.00	16.0/18.0	10.0/14.0	—	2.0/3.0
316	0.08	2.00	0.045	0.030	1.00	16.5/18.5	10.0/13.0	—	2.50/3.00
316Ti	0.08	2.00	0.045	0.030	1.00	16.0/18.0	10.0/12.0	—	2.0/3.0
321	0.08	2.00	0.045	0.030	1.00	17.0/19.0	9.0/13.0	—	—
ER308	0.08	2.00	0.025	0.020	0.50	19.0/21.0	9.5/11.0	—	—
ER308L	0.02	1.50/2.00	0.025	0.020	0.50	19.0/21.0	9.5/11.0	—	—
ER309	0.08	1.50/2.50	0.020	0.015	0.50	23.0/25.0	12.0/14.0	—	—
ER309L	0.03	1.50/2.50	0.020	0.015	0.50	23.0/25.0	12.0/14.0	—	—
ER310	0.08/ 0.15	1.50/2.50	0.025	0.025	0.60	23.0/28.0	20.0/22.0	—	—
ER312	0.15	2.00	0.025	0.025	0.50	29.0/32.0	8.5/10.0	—	—
ER316	0.08	2.00	0.020	0.020	0.50	18.0/20.0	12.0/14.0	—	2.20/2.75
ER316L	0.02	1.50/2.00	0.020	0.020	0.50	18.0/20.0	12.0/14.0	—	2.20/2.75
430	0.10	1.00	0.040	0.030	0.75	14.0/18.0	0.60	—	—
430F	0.12	1.25	0.060	0.15/ 0.35	1.00	15.5/17.5	—	—	—

TENSILE STRENGTH CONVERSION TABLE

1. $\text{Kgf/mm}^2 \times 9.81 = \text{N/mm}^2 = \text{MPa}$
2. $\text{psi} \times 0.0007 = \text{Kgf/mm}^2$
3. $1.574 \times \text{Kgf/mm}^2 = \text{Tsi}$
4. $\text{Ksi} \times 1000 = \text{psi}$
5. $\text{Kgf/mm}^2 = \text{Ksi}$

Raw material testing is one of the important factors which determines the quality of the finished product. Since a slight change in the chemical composition and mechanical properties in the base rod can have a major impact on the properties of the finished wire. KEI has state-of-the-art equipment for testing these features accurately.

N	Ti	Others	Equivalent International Standards						
			W.Nr.	JIS	BSI	AFNOR		UNI	
%	%	%							
0.25	—	—	1.4373	SUS 202	—	—	—	—	—
0.05-0.25	—	—	1.4597	—	—	—	—	—	—
0.10	—	—	1.4310	SUS302	302S17	Z12CN	17-07	X12CrNi	1707
—	—	—	1.4567	—	394S17	Z2CN4	18-10	—	—
—	—	—	1.4305	SUS303	303S31	Z10CNF	18-09	X10CrNiS	1809
—	—	—	1.4301	SUS304	304S15	Z6CN	18-09	X5CrNi	1810
—	—	—	1.4567	—	—	Z3CNU	18-10	—	—
—	—	—	1.4306	SUS304L	304S11	Z2CN	18-10	X2CrNi	1811
—	—	—	1.4401	SUS316	316S31	Z6CND	17-11	X8CrNiMo	1713
—	—	—	1.4429	SUS316LN	316S62	Z2CND	17-13Az	X2CrNiMoN	1713
—	—	—	1.4404	SUS316	316S11	Z2CND	17-12	X2CrNiMo	1712
—	—	—	1.4436	—	316S16	Z6CND	18-12	X5CrNiMo	1713
—	5x%C upto 0.8	—	1.4571	SUS321	320S31/320S17	Z6CNDT	17-12	X6CrNiMoTi	1712
—	5X%C min.	—	1.4541	—	321S31	Z6CNT	18-10	X6CrNiRiT	1811
—	—	—	—	—	—	—	—	—	—
—	—	—	1.4331	—	308S92	Z2CNS	20-10	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	1.4332	—	309S94	—	—	—	—
—	—	—	1.4842	—	310S94	Z12CN	25-20	—	—
—	—	—	1.4337	—	—	—	—	—	—
—	—	—	—	—	316S92	—	—	—	—
—	—	—	1.4430	—	—	Z2CND	19-13	—	—
—	—	—	1.4016	SUS430	430S17	Z8C17	—	X8Cr17	—
—	—	—	1.4104	SUS430F	—	Z10CRF17	—	X10CrS17	—

CONVERSION TABLE

- 1.0 Inch = 2.54 cm = 25.4 mm
- 1.0 Meter = 1.0936 Yards = 3.2808 Feet
- 1.0 Yard = 3.0 Feet
- 1.0 Kilogram = 2.2046 Lbm (Pound Mass)

Testing Equipments

HILGER ANALYTICAL (POLYVAC 200), UK

This atomic absorption emission spectrometer is used for chemical testing of raw material (wire rod) in 22 elements. It provides the accurate element values in the raw material, ensures the re-verification of the material being used in process.



TIRA MASCHINENBAU GMBH

An ultimate tensile testing machine providing accurate mechanical results of wire within seconds. The ultimate tensile strength, elongation, yield strength and any other parameter (as required) are reflected immediately for analyzing.

VEB WERKZUGMASCHINENKOMBINANT, GERMANY

This is a harmless testing used for checking the hardness level in thick wire and the critical machine part, which indirectly contributes to the quality of finished product and efficiency of machines.



DEWINTER OPTICAL INC. (METALLURGICAL MICROSCOPE)

This machine enables to look deeper into the quality of raw material and finished wires. It checks the grain size, structure, porosity and other metallurgical studies, ensures right raw material along with finished product.

SETERO MICROSCOPE

For studying the wire surface and various levels (raw material, intermediate and finished wire).

10 TON ULTIMATE TENSILE TESTING MACHINE

Used for testing physical properties of raw material and thicker wires.

250 KGS ULTIMATE TENSILE TESTING MACHINE

Used for testing physical properties of intermediate wires (in-process material).

100 NEWTON ULTIMATE TENSILE TESTING MACHINE

This machine is also for testing physical properties on backup basis.

All these machines are complemented by well trained and qualified manpower to ensure the implementation of quality policy in product.

KEI

Stainless Steel Wires



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