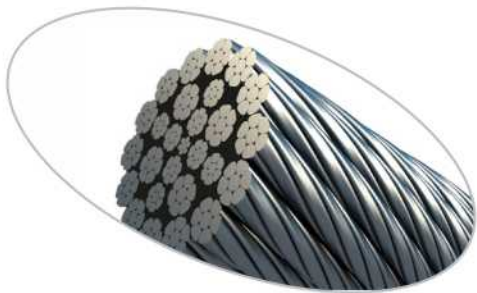


SW
Singhania Wires
Specialists in Steel wires





About Us

Singhania International Limited was established in the year 1995 and is primarily engaged in the business of manufacturing carbon, alloy and stainless steel wires. Located in Ludhiana (Punjab, India), about 300Kms from New Delhi, Singhania Wires™ has state of the art manufacturing facility with latest automatic machinery and PLC controlled electric bell type spheroidising annealing furnaces. Singhania Wires™ is a registered brand name of Singhania International Limited.

Singhania wires™ has annual wire drawing capacity of 40,000 MT+ per year and spheroidised annealing capacity of 4500 MT+ per year. Our wire drawing facility has the capability of drawing wires in size range 1.60mm to 32.00mm and produces world-class steel wires in various grades like low carbon, medium carbon, high carbon, Boron steel, special alloy steel, Nickel & Titanium alloys and stainless steel wires. These wires are manufactured to suit varied needs of engineering, automobile & allied industries.

Over the years, Singhania Wires™ has grown to be the one stop shop for most requirements of general engineering wires, spring steel wires, HB wires, HHB wires, SAIP wire (Spheroidised Annealed in-process), SAFS (Spheroidised Annealed at final size) wire, wires for spring washers and circlips, cold heading quality wires, flat, shaped and profiled wires and straightened & cut wires. We have ready stock of 1500+MT of wire rod in carbon and alloy steel grades in different sizes maintained with us at all times.

Our well-equipped plants are manned by qualified professionals who are geared to produce high quality products which are manufactured with utmost precision from quality steel procured from steel producers like Mukund Ltd, Usha Martin Ltd, JSW Steels Ltd., TATA Steel, Jindal Steel and Power Ltd. (JSPL), Bhushan Steel & Power Ltd. (BSPL), and Rashtriya Ispat Nigam Ltd. (RINL), Steel Authority of India Limited (SAIL)& overseas steel suppliers. Each product is subject to stringent quality checks at every step from incoming of the raw material, to manufacturing till dispatch.

Singhania International Limited is an ISO 9001:2008 certified company.





Managing
Director

Management Team

We believe that our organizational team empowers us to lead the industry. Our highly diligent team of technical and non-technical personnel evaluates every aspect of the production system & overall operations to ensure production of precision products. Our team plays a major role in offering quality products & services to our customers.

Under the ardent leadership of Mr. Anil Singhania, the Managing Director of Singhania International Limited, we have composed our success saga. Owing to his vision, we have grown by leaps and bounds to anchor our position as a reliable manufacturer in the industry. Mr. Anil Singhania, a commerce graduate, has over 38 years of experience in business and has a wide range of experience in the metal and metals processing industry.

Besides, all the units of our company is managed and supervised by a board of directors, which consists of experienced professionals. Each and every unit, under their supervision is an autonomous profit center. Contribution of every single section of the organization is vital.

Director



INFRASTRUCTURE

We, at Singhania Wires™, have incorporated best practices and modern production techniques in all our manufacturing units. Our 11000 sqyds. integrated manufacturing plant consists of hi-tech machines and technically sound operators. The complete production process is thoroughly screened for consistency in quality of the end product.

We have a clean and state of the art acid pickling and phosphating unit for cleaning the surface of wire rods and giving a rust-free wire surface with uniform phosphate, lime, borax or rust-preventive oil coating according to our customers requirements. Our baking ovens for wires ensure rust free wire surface, delivering good quality wires steadily.

Our ultra modern PLC controlled spheroidising electric bell-type annealing furnaces with Nitrogen and Hydrocarbon inert atmosphere ensures NIL decarb in our annealed wires while achieving spheroidisation rates of up to 95% in our processed wires. The wires undergo gradual heating, soaking and controlled cooling in an inert atmosphere to achieve the desired mechanical, metallurgical properties & micro structure.

Some of the machines and facilities installed at our manufacturing unit are as follows:

- » Inverted vertical bull blocks
- » PLC Controlled fully automatic Electric Bell Type Annealing furnace
- » Horizontal bull blocks
- » De-scaler for wires upto 12mm
- » OTO-Pulley Type Wire drawing machine
- » Straight Line wire drawing machines
- » Overhead & floor cranes for material handling
- » Automatic wire coil wrapping and packing machine
- » Wire straightening & cutting machines



QUALITY ASSURANCE & CONTROL

Our quality control process is systematic and concrete, involving several trained professionals and modern tools & equipment. Every employee is responsible for the quality of his work. To reach our quality objectives, the abilities and knowledge of all the employees are developed further. The whole process ensures that our products & procedures adhere to international standards of quality & safety. Our commitment to excellence and passion for quality products has earned us the ISO 9001:2008 certification by TUV, Nord.

An ultramodern laboratory with calibrated test equipment is in place. Our laboratory is equipped with:

- » Sample cutting & polishing machine
- » Spectrometer
- » Metallurgical microscope with Image analyzing software
- » Computerized electro hydraulic universal testing machine (1000KN)
- » Universal testing machine (20KN)
- » Rockwell hardness tester
- » Chemical testing facility
- » Torsion testing machine
- » Bend testing machine
- » Micrometer, Vernier Caliper and standard gauge measuring instruments

Adequate knowledge in metallurgy helps us in our process design as well customization of products for critical and unique applications.

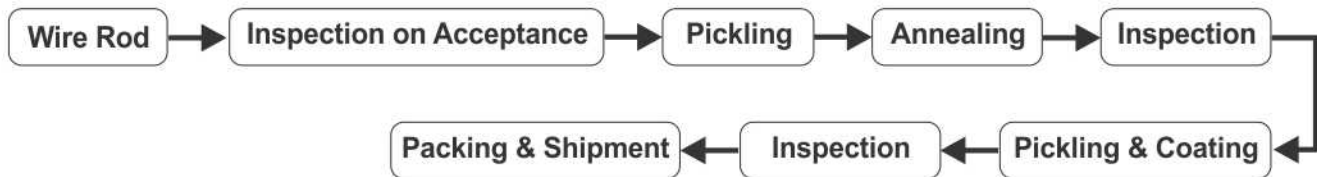


STEEL WIRE PRODUCTION PROCESS

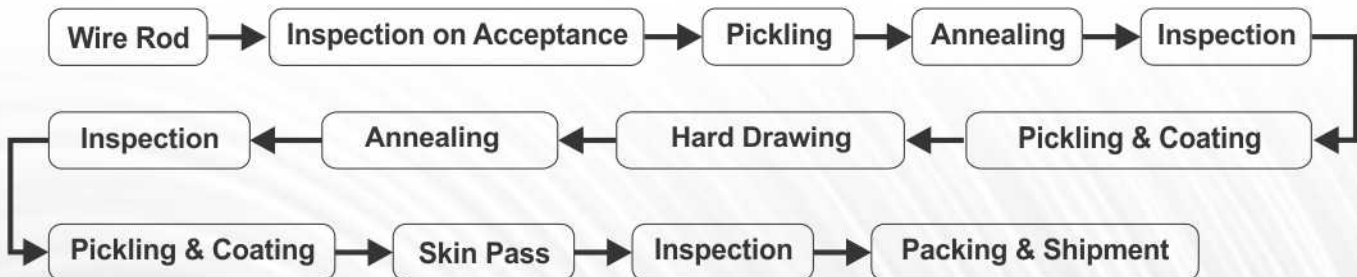
HARD DRAWN WIRE



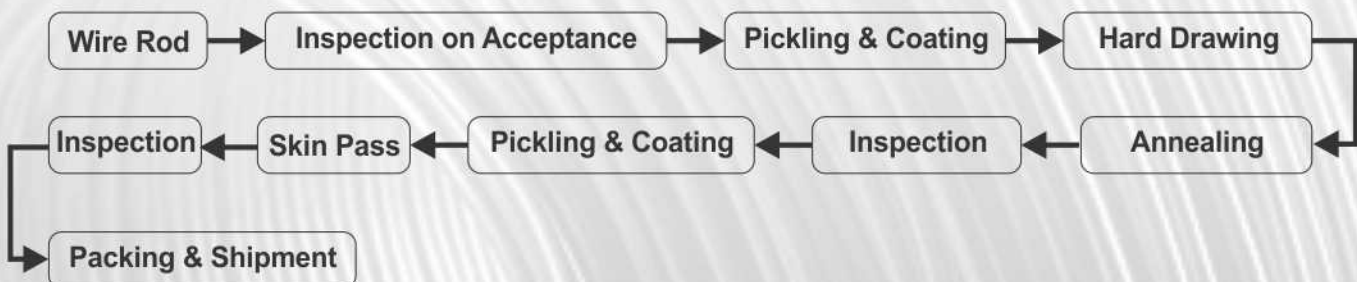
WIRE ROD ANNEALING (SAFS)



PREANNEALED WIRE DRAWING (PASAIP)



SAIP (HNB) WIRE



PRODUCTS

1. CHQ STEEL WIRES

We manufacture cold heading quality steel wires in sizes ranging from 2.5mm to 32mm. Our CHQ steel wires ensure high formability and cold heading properties. These wires are free from surface imperfections like seams, cracks, pitting and/or scratch / die marks. Our cold heading quality wires are available in different steel grades viz. Carbon steel, Boron steel, Alloy steel and Stainless steel grades. Our high quality cold heading grades are preliminary material for manufacturing heavy-duty & high-tensile fasteners and other connecting elements. Coil weights of upto 2.5MT can be provided on stands as per customer's requirements.

Type : Carbon Steel, Boron Steel, Alloy Steel, and Stainless steel

Diameter : 2.5mm – 32.0mm

Application : For Cold Heading or Cold Forging for making various fasteners such as screw, self-clinching nut, bolts, studs, nail, rivet, threaded rods, tie rods for use in automobile, defence, construction, general engineering, electronics & aerospace industry.

Packaging : In 100 – 2500Kgs weight coils wrapped with stretch film and HDPE with proper identification tags or on carriers (formers) in coil weights from 1000 - 2500Kgs.



2. SPRING STEEL WIRES

Singhania International Ltd. manufactures Spring Steel Wires in sizes ranging from 2.8mm to 14.00mm in carbon 35 to 85. We also manufacture various sizes in Square, Rectangular, Trapezoidal cross sections from 0.8 x 0.8 mm to 10.0 x 6.0 mm in different spring steel grades. We offer wires in various finishes i.e. annealed (Spheroidised annealed), hard, coated (Phosphate & Oiled condition), and clean surface. All properties like hardness, tensile strength, torsion, size tolerance, coil weight etc. are maintained as per customers' specification.

The High Carbon Steel Wires, by Singhania Wires™, are used to manufacture automotive spring products like control cables, pins, free cutting wires, spokes, piston rings, compression, extension and torsion springs, wire ropes, hand tools, steel shots etc.

Spring Steel wires are cold drawn wires made from high carbon steel (Alloyed & unalloyed). These wires find application in automobile, cycle and other industrial equipment. These wires are generally supplied in phosphate and oiled condition. We can supply wires to specific customer requirement within the specifications.

Type : High carbon steel and Spring steel

Diameter : 2.8 mm – 14.0mm

Application : For making all kinds of springs, mechanical springs, engine valve springs, automobile cables, wire brushes, shockers, needles, wheel spokes, mattress springs, shutter springs, wire ropes, hand tools, screw drivers, spring pins, cotter pins, piston rings, bead wire, steel shots and dowel pins, r-pins.

Packaging : In 150 – 1500Kgs weight coils wrapped with stretch film and HDPE with proper identification tags or on carriers (formers) in coil weights from 750 - 1500Kgs.

Standard : EN10270, DIN17223, JISG3521, GB4357, BS2763, ASTM A227, AS 1472



PRODUCTS

3. SPRING WASHER WIRES

These are shaped wires in Round, Square, Rectangular or Trapezoidal cross section manufactured from high carbon steel generally conforming to EN-42B/En-42C. The wires are custom built for the taper required. Wires for spring washer are supplied in drawn & annealed finish. These wires are used in the manufacture of spring washers, circlips, laminar seal rings and snap rings.

Type : High carbon steel

Diameter : 3.0mm – 10.0mm (for round wires)

Application : For making all kinds of spring washers, circlips, spring for automotive seating systems, wave springs, spiral rings, wave washers, oil seals, laminar seal rings and snap rings.

Packaging : In 200 – 2000Kgs weight coils wrapped with stretch film and HDPE with proper identification tags.



4. BEARING STEEL WIRES

Singhania Wires™ ball bearing steel wires are supplied in coils in Spheroidised Annealed Phosphate coated drawn condition to facilitate cold heading operation. These wires are used in manufacture of balls, needles, rollers, taper rollers and cylindrical rollers etc. The micro structure of wire contains uniformly distributed fine carbide globules in ferrite mix. All the properties like hardness, TS, size tolerance, surface coating etc. can be maintained as per customer specifications.

Type : Ball bearing steel (EN31, SAE 52100, 103Cr4Mn4, SUJ2, 100Cr6)

Diameter : 3.0mm – 28.0mm

Application : For making balls, needles, rollers, taper and cylindrical rollers

Packaging : In 200 – 2000Kgs weight coils wrapped with stretch film and HDPE with proper identification tags or on coil carriers in coil weight from 750 – 2000Kgs.



5. CHAIN LINK & ROLLER CHAIN WIRES

Singhania Wires™ manufactures special wires which are supplied in coils in spheroidised annealed phosphate coated drawn condition to facilitate cold forming. Wire for roller chain has excellent surface finish and have tight and consistent tolerances. These wires are used in manufacture of chain pins, roller chain bushing and rollers for use in manufacture of automobile and industrial roller chains. These steel wires are also used in cable trays and conveyor belts. These wires can be supplied in round or rectangular cross section (as flat wire). The micro structure of wire contains uniformly distributed fine carbide globules in ferrite mix. All the properties like hardness, TS, size tolerance, surface coating etc. can be maintained as per customer specifications.

Type : Carbon, Alloy & Stainless steel

Diameter : 2.5mm – 9.0mm

Application : For making roller chain pin, roller, bushing, conveyor belts and cable trays.

Packaging : In 200 – 800Kgs weight coils wrapped with stretch film and HDPE with proper identification tags.



PRODUCTS

6. SHAPED WIRES & WIRE FORMS

These are shaped wires in Oval, Half round, Square, Hexagon, Triangular or special cross section manufactured mainly from carbon steel. The wires are custom built as per the cross section required. These profile wires find special applications in numerous automobile parts, meshes, grills, decorative items, car seating systems, springs, textiles, cable armoring and aerospace components. These wires (both round and shaped) are also used in making wire forms which find numerous applications.

Type : Carbon, Alloy and Stainless steel

Diameter : For 2.0mm – 10.0mm (input round wires)

Application : Wiper arms, blades, auto cables, kitchen utensils, meshes, filtration, vanes, rings, hardware, zipper, head rests, wire forms, cotter pins, spring pins, r-pins, dowel pins etc.

Packaging : In 200 – 500Kgs weight coils wrapped with stretch film and HDPE with proper identification tags or in Spools.



7. SPECIALTY WIRES FOR KNITTING NEEDLES, CARD CLOTHING

These are special shaped wires manufactured mainly from high carbon steel. These are high-end special application wires which are custom built as per the cross section required. These profile wires find applications in cotton carding and knitting.

Type : High carbon steel

Application : Lickerin wire for card clothing, warp knitting needles, spring needles and overhead drive machine needles.

Packaging : In 200 – 500Kgs weight coils with proper identification tags or in Spools.



8. FREE CUTTING STEEL WIRES

Free-cutting steel wire has excellent machinability and surface finish, have tight and consistent tolerances and high wear resistance. Free-cutting steel wire finds special applications in automobile parts, brake components and high precision instruments.

Type : Free-cutting steel

Application : ABS brake components, precision instruments, shafts, test probes and watch parts

Packaging : In 200 – 1000Kgs weight coils wrapped with stretch film and HDPE with proper identification tags or in Spools.



PRODUCTS

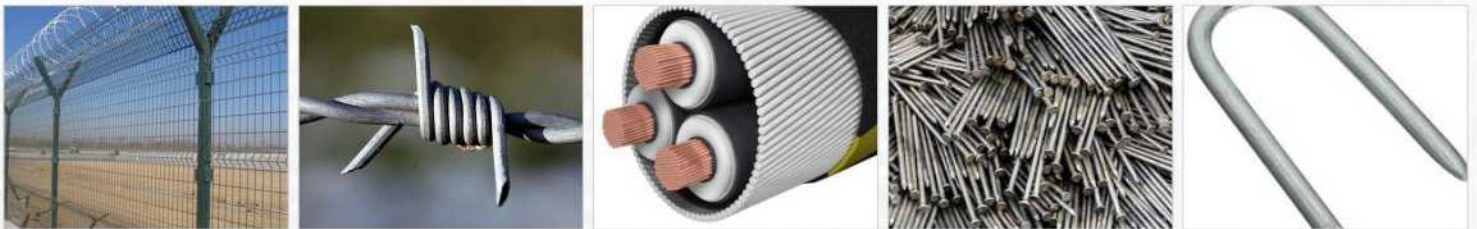
9. WIRES FOR GENERAL ENGINEERING APPLICATIONS

Besides being widely used in highly technical industries, steel wires are also widely used in several general engineering applications. Such wires are used in making chain link fences, barbed wires, wire nails, welded wire mesh, stay wire, tie wire, binding wire etc. Such wires are mostly made from low carbon steel, however depending on the end use and customer requirements these wires can be provided as per customer specifications.

Type : Carbon steel wires

Application : Fencing, barbed wires, cable armoring, nails, welded mesh, binding wire, earth wire, stay wire, steel wool, stitching wire, staple wire, baling wire, paper clips etc.

Packaging : In 200–600Kgs weight coils with proper identification tags or in Spools.



10. WELDING ELECTRODE WIRES

Steel wires with special chemical composition are used in manufacture of welding electrodes, MIG Wire, TIG wire and other special high-end welding wires. These wires have excellent draw ability and surface finish. Singhania Wires™ manufactures steel wires which can be used by welding electrode and Welding wire manufacturers for further processing for manufacture of Co2 MIG, TIG, SAW & PAW wires.

Type : Welding wires (EWR, EWNr, ER70S-6, SS304L, SS316L)

Application : For manufacture of MIG, TIG, SAW wires and welding electrode



11. STRAIGHTENED AND CUT STEEL BARS

Singhania Wires™ can also provide all the different kinds of steel wires in straightened and cut forms which can be used for manufacture of special components and hardware applications. These straightened and cut to length bars are available in different surface finishes and can be supplied as per customer specifications.

Type : Carbon, Alloy and Stainless steel straightened and cut to length bars

Application : Tie rods, fully threaded rods, U-bolts, J-bolts, Screw drivers, wire forms, security fasteners, machined components made from straightened and cut to length bars, studs, BB Axle, car headrest etc.

Packaging : In straightened and cut to size length from 100-6000mm



PRODUCTS

12. PRE-STRESSED CONCRETE STEEL WIRE (PC WIRE)

It is a high tensile wire and strand for pre-stresses in concrete structure by virtue of improved proportional limit, high ductility combined with higher strengths. They may be supplied in drawn, drawn straightened or stress relieved conditions. These can be manufactured as per different international standards like IN, BS, GB, DIN, JIS etc. and to the specific requirement of each customer.

Type : Carbon steel wire

Application : Pole re-enforcement, pre-stressed concrete pipes, railway sleepers etc.

Packaging : In coils or on carriers



Hard Drawn Steel Wire for Springs (Specifications)

Diameter (mm)	Tensile Strength (N/mm ²)			
	Mass (Kg/1000m)	Grade I	Grade II	Grade III
3.20mm	63.1	1390-1600	1610-1810	1820-2020
3.40mm	71.3	1370-1580	1590-1780	1790-1990
3.50mm	75.6	1360-1570	1580-1770	1780-1980
3.60mm	79.9	1350-1560	1570-1760	1770-1970
3.80mm	89	1340-1540	1550-1740	1750-1950
4.00mm	98.6	1320-1520	1530-1730	1740-1930
4.25mm	111	1310-1500	1510-1700	1710-1900
4.50mm	125	1290-1490	1550-1680	1690-1880
4.75mm	139	1270-1470	1480-1670	1680-1860
5.00mm	154	1260-1450	1460-1650	1660-1840
5.30mm	173	1240-1430	1440-1630	1640-1820
5.60mm	193	1230-1420	1430-1610	1620-1800
6.00mm	222	1210-1390	1400-1580	1590-1770
6.30mm	245	1190-1380	1390-1560	1570-1750
6.50mm	260	1180-1370	1380-1550	1560-1740
7.00mm	302	1160-1340	1350-1530	1540-1710
7.50mm	347	1140-1320	1330-1500	1510-1680
8.00mm	395	1120-1300	1310-1480	1490-1660
8.50mm	445	1110-1280	1280-1460	1470-1630
9.00mm	499	1090-1260	1270-1440	1450-1610
9.50mm	559	1070-1250	1260-1420	1430-1590
10.00mm	617	1060-1230	1240-1400	1410-1570
10.50mm	680		1220-1380	1390-1550
11.00mm	746		1210-1370	1380-1530
12.00mm	888		1180-1340	1350-1500
12.50mm	963		1170-1320	1330-1480
13.00mm	1042		1160-1310	1320-1470
14.00mm	1208		1130-1280	1290-1440

Chemical Composition of Steel

Carbon Steel Wire (SAE/AISI)

Grade	CHEMICAL COMPOSITION (%)											
	C	Si	Mn	S	P	Ni	Cr	Mo	Cu	Al	Ti	B
CAQ	0.050 Max.	0.05 Max.	0.45 Max.	0.03 Max.	0.03 Max.							
1006	0.080 Max.	0.10 Max.	0.25-0.45	0.03 Max.	0.05 Max.							
1008	0.010 Max.	0.10 Max.	0.30-0.50	0.03 Max.	0.05 Max.							
1010	0.08-0.13	0.10 Max.	0.30-0.60	0.03 Max.	0.05 Max.							
1015	0.13-0.18	0.10 Max.	0.30-0.60	0.03 Max.	0.05 Max.							
1018	0.15-0.20	0.10-0.35	0.60-0.90	0.03 Max.	0.05 Max.							
1020	0.18-0.23	0.10 Max.	0.30-0.60	0.03 Max.	0.05 Max.							
EN1A	0.15 Max.		0.90-1.30	0.20-0.30	0.07 Max.							
EN8	0.36-0.44	0.10-0.40	0.60-1.00	0.05 Max.	0.05 Max.							
EN8A	0.33-0.38	0.10-0.40	0.70-0.90	0.05 Max.	0.05 Max.							
EN8D	0.40-0.45	0.10-0.40	0.70-0.90	0.05 Max.	0.05 Max.							
EN9	0.50-0.60	0.10-0.50	0.50-0.90	0.05 Max.	0.05 Max.							
EN15	0.32-0.40	0.10-0.40	1.30-1.70	0.05 Max.	0.05 Max.							
EN42	0.70-0.82	0.10-0.35	0.60-0.80	0.05 Max.	0.05 Max.							
EN43C	0.50-0.55	0.10-0.40	0.70-0.90	0.05 Max.	0.05 Max.							
1035	0.32-0.38		0.60-0.90	0.03 Max.	0.05 Max.							
1040	0.37-0.44		0.60-0.90	0.03 Max.	0.05 Max.							
1050	0.48-0.55		0.60-0.90	0.03 Max.	0.05 Max.							
C35/R35	0.32-0.39	0.40 Max.	0.50-0.80	0.045 Max.	0.045 Max.							
C40/R40	0.37-0.44	0.40 Max.	0.50-0.80	0.045 Max.	0.045 Max.							
C45/R45	0.42-0.50	0.40 Max.	0.50-0.80	0.045 Max.	0.045 Max.							
CK45	0.42-0.50	0.40 Max.	0.50-0.80	0.045 Max.	0.045 Max.							
1522	0.18-0.24		1.10-1.40	0.03 Max.	0.05 Max.							
1524	0.19-0.25		1.35-1.65	0.03 Max.	0.05 Max.							
1541	0.36-0.44		1.35-1.65	0.03 Max.	0.05 Max.							
S25C	0.22-0.28	0.15-0.35	0.30-0.60	0.03 Max.	0.035 Max.							
S35C	0.32-0.38	0.15-0.35	0.60-0.90	0.03 Max.	0.035 Max.							
S45C	0.42-0.48	0.15-0.35	0.60-0.90	0.03 Max.	0.035 Max.							

Bearing Steel Wire

Grade	CHEMICAL COMPOSITION									
	C	Si	Mn	S	P	Cr	Mo	B	Ni	CU
En31	0.95-1.10	0.10-0.35	0.40-0.70	0.035 Max.	0.04 Max.	1.20-1.60				
52100	0.98-1.10	0.15-0.35	0.25-0.45	0.025 Max.	0.025 Max.	1.30-1.60				
103Cr4Mn4	0.95-1.10	0.40-0.70	0.90-1.15	0.03 Max.	0.025 Max.	0.90-1.20				

Chemical Composition of Steel

Alloy Steel Wire

Grade	CHEMICAL COMPOSITION									
	C	Si	Mn	S	P	Cr	Mo	B	Ni	CU
SCM 415	0.13-0.18	0.15-0.35	0.60-0.90	0.03 Max.	0.03 Max.	0.90-1.20	0.15-0.30		0.25 Max.	
SCM 420	0.18-0.23	0.15-0.35	0.60-0.90	0.03 Max.	0.03 Max.	0.90-1.20	0.15-0.30		0.25 Max.	
SCM 435	0.33-0.38	0.15-0.35	0.60-0.90	0.03 Max.	0.03 Max.	0.90-1.20	0.15-0.30		0.25 Max.	
SCM 440	0.38-0.43	0.15-0.35	0.60-0.90	0.03 Max.	0.03 Max.	0.90-1.20	0.15-0.30		0.25 Max.	
SCM 415H	0.12-0.18	0.15-0.35	0.55-0.95	0.03 Max.	0.03 Max.	0.85-1.25	0.15-0.35		0.25 Max.	
4135	0.33-0.38	0.15-0.35	0.70-0.90	0.03 Max.	0.04 Max.	0.80-1.10	0.15-0.25			
4140	0.38-0.43	0.15-0.35	0.75-1.00	0.03 Max.	0.04 Max.	0.80-1.10	0.15-0.25			
4150	0.48-0.53	0.20-0.35	0.75-1.00	0.04 Max.	0.04 Max.	0.80-1.10	0.15-0.25			
8620	0.18-0.23	0.15-0.35	0.70-0.90	0.03 Max.	0.04 Max.	0.40-0.60	0.15-0.25		0.40-0.70	
4037	0.35-0.40	0.15-0.35	0.70-0.90	0.03 Max.	0.04 Max.		0.20-0.30			
EN18	0.36-0.44	0.10-0.35	0.60-0.90	0.035 Max.	0.04 Max.	0.90-1.20				
EN18D	0.38-0.43	0.10-0.35	0.60-0.80	0.035 Max.	0.04 Max.	0.90-1.20				
EN19	0.36-0.44	0.10-0.35	0.70-1.00	0.035 Max.	0.04 Max.	0.90-1.20	0.25-0.35			
EN24	0.35-0.45	0.10-0.35	0.45-0.70	0.04 Max.	0.04 Max.	0.90-1.40	0.20-0.40		1.30-1.80	
EN36	0.12-0.18	0.10-0.35	0.30-0.60	0.04 Max.	0.04 Max.	0.60-1.10			3.00-3.75	
EN353	0.14-0.20	0.35 Max.	0.50-1.00	0.05 Max.	0.05 Max.	0.75-1.25	0.08-0.15		1.00-1.50	
16MnCr5	0.14-0.19	0.40 Max.	1.00-1.30	0.035 Max.	0.035 Max.	0.80-1.10				
20MnCr5	0.17-0.22	0.40 Max.	1.10-1.40	0.035 Max.	0.035 Max.	1.00-1.30				
41Cr4	0.37-0.44	0.40 Max.	0.60-0.90	0.035 Max.	0.035 Max.	0.80-1.10				
42CrMo4	0.38-0.45	0.40 Max.	0.60-0.90	0.035 Max.	0.035 Max.	0.90-1.20	0.15-0.30			

Boron Steel Wire

Grade	CHEMICAL COMPOSITION									
	C	Si	Mn	S	P	Cr	Mo	B	Ni	CU
10B21	0.18-0.23	0.30 Max.	0.80-1.10	0.03 Max.	0.03 Max.	0.10-0.20	0.0005-0.0030			
10B33	0.32-0.36		0.80-1.10	0.03 Max.	0.03 Max.	0.10-0.20	0.0005-0.0030			
15B25	0.23-0.28	0.30 Max.	0.90-1.30	0.03 Max.	0.03 Max.	0.10-0.20	0.0005-0.0030			
15B41	0.36-0.44	0.15-0.30	1.35-1.65	0.03 Max.	0.03 Max.	0.10-0.20	0.0005-0.0030			
15B35H	0.31-0.39	0.15-0.35	0.70-1.20	0.04 Max.	0.05 Max.	0.10-0.20	0.0005-0.0030			
19MnB4M	0.20-0.25	0.15-0.30	0.80-1.10	0.03 Max.	0.03 Max.	0.30-0.40	0.0008-0.0030			
19MnB4H	0.28-0.32		0.90-1.20	0.03 Max.	0.035 Max.	0.40-0.50	0.0008-0.0030			
38MnB5	0.36-0.42	0.40 Max.	1.15-1.45	0.035 Max.	0.025 Max.		0.0008-0.0050			

Chemical Composition of Steel

High Carbon & Spring Steel

Grade	CHEMICAL COMPOSITION (%)									
	C	Si	Mn	S	P	Cr	Mo	B	Ni	V
C60/ R60	0.57-0.65	0.15-0.35	0.30-0.60	0.03 Max.	0.03 Max.					
C65/R65	0.64-0.70	0.15-0.35	0.30-0.60	0.03 Max.	0.03 Max.					
C70/R70	0.67-0.75	0.15-0.35	0.30-0.60	0.03 Max.	0.03 Max.					
C75/R75	0.74-0.81	0.15-0.35	0.60-0.90	0.03 Max.	0.03 Max.					
C80/R80	0.77-0.85	0.15-0.35	0.30-0.60	0.03 Max.	0.03 Max.					
EN45A	0.55-0.60	1.80-2.10	0.80-1.00	0.04 Max.	0.035 Max.	0.15-0.30		0.0005 Min.		
SUP 9	0.52-0.60	0.15-0.35	0.65-0.95	0.04 Max.	0.035 Max.	0.65-0.95				
SUP 9A	0.56-0.64	0.15-0.35	0.70-1.00	0.04 Max.	0.035 Max.	0.70-1.00				
SUP 11A	0.56-0.64	0.15-0.35	0.70-1.00	0.04 Max.	0.035 Max.	0.70-1.00				
65Si7	0.60-0.68	1.50-1.80	0.70-1.00	0.05 Max.	0.05 Max.					
9254	0.51-0.59	1.20-1.60	0.60-0.80	0.04 Max.	0.04 Max.	0.60-0.80				
50CrV4	0.47-0.55	0.40 Max.	0.70-1.10	0.04 Max.	0.03 Max.	0.90-1.20				0.10-0.20

Welding Electrode Wire

Grade	CHEMICAL COMPOSITION (%)									
	C	Si	Mn	S	P	Cr	Mo	B	Ni	V
EWNr	0.10 Max.	0.03 Max	0.38-0.62	0.025 Max.	0.025 Max.					
ER70S-6	0.07-0.10	0.80-1.00	1.40-1.60	0.025 Max.	0.025 Max.					
RG Wire	0.05-0.09	0.04 Max.	0.45-0.60	0.01 Max.	0.01 Max.		0.02 Max.			
S2Mo	0.07-0.15	0.05-0.20	0.95-1.30	0.025 Max.	0.025 Max.		0.45-0.65			
EM 12K	0.05-0.15	0.10-0.35	0.80-1.25	0.03 Max.	0.03 Max.					

Stainless Steel Wire

Grade	CHEMICAL COMPOSITION									
	C	Si	Mn	S	P	Cr	Mo	B	Ni	CU
302HQ	0.03 Max.	1.00 Max.	2.00 Max	0.03 Max.	0.04 Max.	17.0-19.0			8.5-10.5	3.0-4.0
304M	0.06 Max.	1.00 Max.	2.00 Max	0.03 Max.	0.04 Max.	18.0-20.0			8.5-10.5	
304L	0.03 Max.	1.00 Max.	2.00 Max	0.03 Max.	0.04 Max.	18.0-20.0			9.0-13.0	
304HC	0.08 Max.	1.00 Max.	2.00 Max	0.03 Max.	0.04 Max.	18.0-20.0			8.0-10.0	2.0-2.50
316	0.08 Max.	1.00 Max.	2.00 Max	0.03 Max.	0.04 Max.	16.0-18.0	2.0-3.0		10.0-14.0	
316L	0.03 Max.	1.00 Max.	2.00 Max	0.03 Max.	0.04 Max.	16.0-18.0	2.0-3.0		12.0-15.0	
316C	0.08 Max.	1.00 Max.	2.00 Max	0.03 Max.	0.04 Max.	16.0-18.0	2.0-3.0		10.0-14.0	2.0-4.0
410	0.15 Max.	1.00 Max.	1.00 Max.	0.03 Max.	0.04 Max.	11.5-13.5				
430	0.12 Max.	0.75 Max.	1.00 Max.	0.03 Max.	0.04 Max.	16.0-18.0		0.0005 Min.		
434	0.12 Max.	1.00 Max.	1.00 Max.	0.03 Max.	0.04 Max.	16.0-18.0	0.75-1.25		0.50 Max.	0.75 Max.
201	0.15 Max.	0.75 Max.	5.5-7.5%	0.03 Max.	0.06 Max	16.0-18.0			3.50-5.50	



SW
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Specialists in Steel wires

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