



Stainless Steel & Nickel Alloy

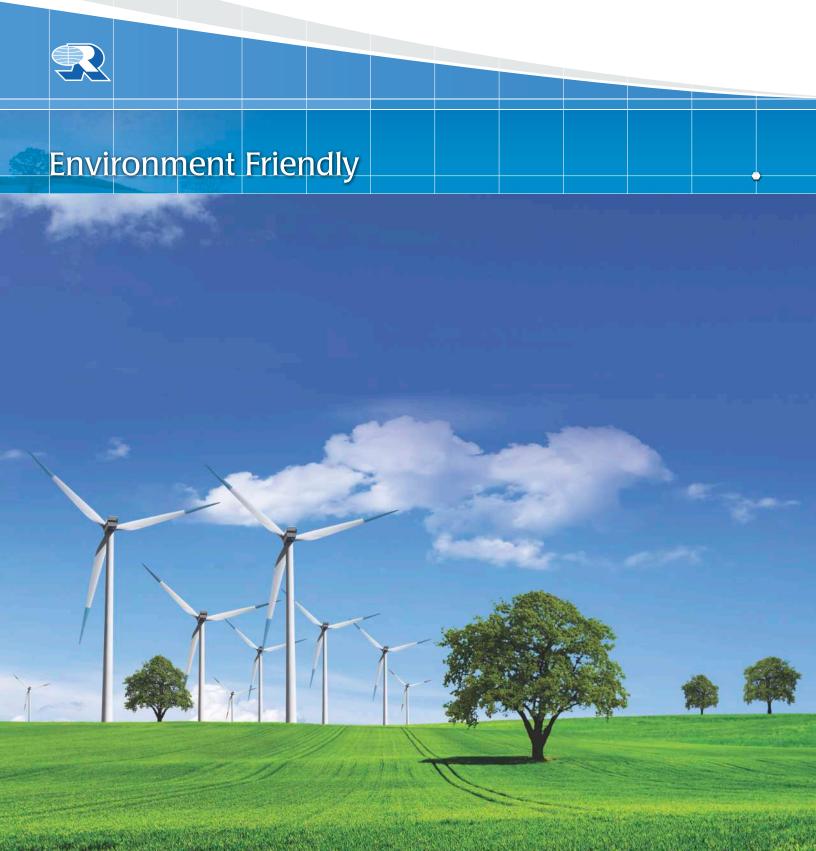
- Round & Profile Wires
- Bar & Rebars

STRENGTHENING THE FUTURE... ...WITH THE POWER OF STAINLESS



Raajratna®









Company Profile



Raajratna Metal Industries Limited is an "ISO 9001-2015", "ISO 14001-2015" & IATF 16949-2016, ISO 13485:2016 accredited company, started production of stainless steel wires in 1990 and subsequently diversified to bright bars. Since it's beginning Raajratna has used state-of-the art technology with strong emphasis on product quality and customer satisfaction.

As a result of continuous improvement in every aspects of business within a short span, today Raajratna has become one of the most reliable sources of quality products both in domestic as well as in international market with an annual production capacity of **42,000 tonnes**. Because of its large manufacturing capacity and continuous product innovation with the regular upgradation, Raajratna has achieved economy of scale and is able to serve customers having highly diversified requirements.

Raajratna exports it's 70% of production to more than 60 countries across the globe. It has been possible due to Raajratna's ability to meet exact market requirements and strict adherence to delivery schedule with an individual attention to every customers.





Product Range

Raajratna manufactures all types of stainless steel & nickel alloy wires for various applications. It has got a state of the art facility for manufacturing and maintaining stringent quality parameters, considering the end application of the wires. It also offers customised packing styles for easy handling and storage. We have product range as follows:



Size Range : 0.025 mm to 25.00 mm (0.00098" - 1.00")

Grades : Stainless Steel, Nickel Alloy

& Duplex Steel

Finish : Soft annealed - 1/4 hard, 1/2 hard,

3/4 hard, full hard

(Matte or Bright Finish)



Stainless Steel & Nickel Alloy Wires for General Purpose

Raajratna manufactures general purpose wire in various grades for different applications

Our wire is manufactured with excellent surface condition matched with mechanical properties to achieve the range from soft to full hard according to customer's demand, with specialization in **EPQ** wire.





Product Range

Wires General | Spring | Welding | Metalising | Cladding | Cold Heading | Profile | Fine | Super Fine

Bars Bright (Round) | Square | Hex | Flat

Rebars Reinforcement Bar

Stainless Steel & Nickel Alloy Bright Bars

Size Range : 2.00 mm to 50.00 mm (0.08" - 2.00")

upto 6 meter length

Grades : Stainless Steel, Nickel Alloy

& Duplex Steel

Finish : Polished Bars

Ground Bars Chamfered Bars





Stainless Steel & Nickel Alloy Solid Sections

Hex Size Range : A/F 2.00 mm to 22.00 mm

(0.08" - 0.80")

Square Size Range: 1.18 mm to 18.00 mm

(0.046" - 0.70")

Grades : Stainless Steel, Nickel Alloy

& Duplex Steel

Supply Condition : Coils of 10 to 1,000 Kgs.
Straight Length : I Meter to 6 Meter Max.



Spring Wires

Stainless Steel & Nickel Alloy Spring Wires

Raajratna manufactures high quality spring wires. Spring wires are supplied in sizes from 0.06 mm to 22.0 mm in various grades & finish. Raajratna can also supply **Ni-coated** Spring Wires from 0.15 mm to 2.00 mm. The wires can also be supplied from shaved wire & **Eddy current testing**.

Nickel Coated Wires:

Nickel is one of the most common metal coating for Stainless Steel Spring Wires. It gives good lubrication during coiling operation and improves the precision in spring coiling, gives better yield of the production and lowers wear of coiling tools. It also has very good soldering properties after cleaning and there is no discoloration of the springs after tempering.

All Raajratna standard grades can be supplied with Nickel coating in coated (powder drawn) or bright (diamond drawn in oil) condition. Nitric acid will dissolve the nickel layer completely and nickel is not corrosion resistant in oxidizing acid environment.

Both Coated & Bright Nickel coated Spring Wires have following advantage:

Very good lubrication at high coiling speeds

No discoloration of the surface after heat treatment

Cleaning of the springs in alkaline solutions

- After degreasing, good soldering properties
- No dust during coiling resulting in cleaner environment in case of coated wires.

Diameter	Surface Finish Standards Grade			Temper			
in mm		Standards	AISI	JIS	DIN	Terriper	
		ASTM A313	302	SUS302	1.4310	11.1611	
0.07.33.00	Stearate Coated	EN 10270-3	304 / 304H	SUS304	1.4301	Half Hard ³/4 Hard	
0.06-22.00	Bright	JIS G4314/BS 2056	316	SUS316	1.4401	Full Hard	
		DIN 17224	63 I (17-7Ph)	SUS631J1	1.4568	ruii maru	

We also supply Nitronic 50, Inconel X-750, AISI 301 and AISI 904L grades on request.

Stainless Steel Spring Wires can be supplied with normal (NS) and high (HS) tensile strength.

Size	Finish	Plastic Spool	Wooden Spool	Metal Spool	Coil Form
in mm	I IIII3II	T lastic Spool	7700deil Spool	rietai Spooi	Contonii
0.06 - 0.20	Bright	✓			
0.20 - 0.60	Bright	✓	✓	\checkmark	✓
0.60 - 2.80	Bright		√	\checkmark	✓
0.18 - 0.35	Stearate Coated	\checkmark			✓
0.35 - 0.70	Stearate Coated	√	✓	\checkmark	✓
0.80 - 4.00	Stearate Coated		✓	✓	✓
4.00 - 22.00	Stearate Coated				✓

Surface Finish:

The wires can be drawn either in powder or in oil resulting in a COATED or BRIGHT surface finish. Both these finishes are also achieved with a thin film of Nickel which results in a wire with very good lubricating properties.

I/2 Hard & 3/4 Hard Bright Wires

Size in mm	Finish	Coil & Spool	Applications
0.50 - 3.50	Bright	✓	Fishing Hook, Heli Coil Springs etc.



Packaging

Stainless Steel & Nickel Alloy Spring Wires can be supplied as under



Plastic Spool

: DIN 100, 125, 160,

200, 250, 300 & 355

Weight: I - 40 kgs



Wooden Reel

Type : 550 / 760K Weight: 100 - 400 kgs



Plastic Spool

Type: SH460K/SH390K

Weight: I5 - 40 kgs



Coils

Type : As per Request Weight: 3 - 1000 kgs



Compact Coil

Type : Coil with Core

Weight: 250 - 1000 kgs



Steel Reel

Type : 550 / 760K

Weight : 100 - 400 kgs

* Customised packing available on request.









Packaging

Packing

Dian	neter	Packing	Approx.	Surface Finish
in mm	in inch	Packing	Weight	Surface Fillish
0.06 - 0.15	0.002 - 0.006	DIN 100 / 125	I - 3 Kgs	Bright
0.15 - 0.20	0.006 - 0.008	DIN 160 / SH 390	4 - 6 / I5Kgs	Bright / Coated
0.20 - 0.30	0.008 - 0.012	Coil / DIN 200 / SH 460	10 - 12 / 35 - 40 Kgs	Bright / Coated
0.30 - 0.60	0.012 - 0.024	Coil / DIN 250 / SH 460	18-20/15-20/40 Kgs	Bright / Coated
0.20 - 0.50	0.008 - 0.020	SH 390 / SH 460	15 / 40 Kgs	Bright / Coated
0.50 - 4.00	0.020 - 0.160	Wooden Spool/Metal Spool DIN 550 / 760	100 - 400 Kgs	Coated
0.50 - 0.75	0.020 - 0.030	Coil	15 - 50 Kgs	Bright / Coated
0.80 - 0.90	0.032 - 0.036	Coil	40 - 100 Kgs	Bright / Coated
1.00 - 1.50	0.040 - 0.060	Coil	50 - 150 Kgs	Bright / Coated
1.50 - 1.70	0.060 - 0.070	Coil	50 - 200 Kgs	Bright / Coated
1.70 - 2.80	0.070 - 0.110	Coil	100 - 1000 Kgs	Bright / Coated
2.80 - 4.00	0.110 - 0.160	Coil	200 - 1000 Kgs	Coated
4.00 - 20.00	0.160 - 0.780	Coil	250 - 1000 Kgs	Coated
1.20 - 12.00	0.080 - 0.470	Euro Coil	250 - 1000 Kgs	Coated
0.35 - 4.00	0.014 - 0.160	Wooden Spool/Metal Spool DIN 550 / 760	100 - 500 Kgs	Coated

Metal Spool Dimension

Flange Dia		Barrel D	iameter	В	ore	Traverse (Width)		
in mm	in inch	in mm	in inch	in mm	in inch	in mm	in inch	
550	22.00	300	12.00	40	1.57	280	11.00	
760	30.00	430	17.00	32 / 40	1.26 / 1.57	240/290/360	9.45/11.40/14.20	

Wooden Spool Dimension

Flange Dia		Barrel Diameter		В	ore	Traverse (Width)	
in mm	in inch	in mm	in inch	in mm	in inch	in mm	in inch
550	22.00	300	12.00	32	1.25	230	9.00
760	30.00	430	17.00	32	1.25	230	9.00

 $^{^{*}}$ Wooden Spool dimensions can be supplied as per customers request.

SH 460 & SH 390 Spool Dimension

Flange Dia		Barrel D	iameter	Вс	ore	Traverse (Width)	
in mm	in inch	in mm	in inch	in mm	in inch	in mm	in inch
460	18.00	320	12.60	305	12.00	90	3.55
390	15.00	320	12.60	305	12.00	90	3.55



Welding Wires

Stainless Steel & Nickel Alloy Welding Wires

MIG Wires

The MIG wires are supplied in bright as well as in matte finish and the wire is specially cleaned to avoid weld contamination. MIG wires can be supplied in plastic spool as well as on metallic baskets. The wires have suitable cast / helix to ensure perfect "Pay-Off.



Size (mm)	Size (inch)	Wire Basket BS300 / K300	Plastic Spool SD300	Plastic Spool SD200	Plastic Spool SD 100
0.60	0.025"				
0.80	0.030"				
0.90	0.035"			(6) 7	
1.00	0.040"				
1.20	0.045"				
1.60	0.062"	12.5 kgs/15 kgs	12.5 kgs/15 kgs/20 kgs	5 kgs	I kgs
		25 lbs/30 lbs	25 lbs/30 lbs/40 lbs	I 0 lbs	2 lbs



TIG Bars

Raajratna manufactures high quality TIG bars in 36" & 1,000 mm cut lengths, with embossing on both sides 1.2 mm and above bars as per customer's requirements. TIG bars are supplied in bright and clean finish to avoid all possible contamination.

Size (mm)	Size (inch)	Corrugated Tubes	Plastic Tubes
0.80	0.035"		
1.00	0.040"		
1.20	0.045"		
1.60	0.062"		
2.00	0.080"		
2.40	0.093"		
3.20	0.125"		10 30°
4.00	0.156"		
5.00	0.187"	5 kgs	5 kgs
		I0 lbs	10 lbs



Welding Wires

SAW Wires

Raajratna manufactures clean & layer wound wire for submerged arc welding from 1.60 mm (0.0625") to 5.00 mm (0.1875") in various grades in bright as well as in matte finish. The wires tensile strength, helix and cast diameter is engineered to precise tolerance to ensure perfect "Pay-Off".



Size (mm)	Size (inch)	Fraction	Corrugated Ring	Wire Basket K415
1.60	0.062"	1/16"		
2.00	0.078"			
2.40	0.094"	3/32"		
3.20	0.125"	1/8"		
4.00	0.156"	5/32"		
5.00	0.187"	3/16"	25 kgs.	25 kgs.
			60 lbs	60 lbs

Core Wires

Raajratna manufactures high quality stainless steel & nickel alloy wire for welding electrodes in sizes 1.60 mm (0.062") - 5.00 mm (0.187") in bright as well as in matte finish.

The wire for welding electrodes are supplied in coil as well as in cut length as per AWS, DIN, BS, JIS and other equivalent international standards or as per the customer's requirement.

The commonly manufactured grades are AWS ER307, ER308, ER308L, ER309, ER309L, ER309LMo, ER310, ER312, ER316, ER316L, ER317L, ER318, ER347, ER430 with low and normal silicon contents.

Size (mm)	Size (inch)	Fraction	Coil Form	Cut Length
2.00	0.078"			
2.40	0.094"	3/32"		
2.50	0.098"			
3.15	0.124"			
3.20	0.125"	1/8"		
4.00	0.156"	5/32"		
5.00	0.187"	3/16"		
-			As per custo	omer's request

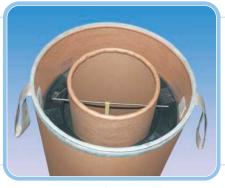


Welding Wires

Bulk Pay-Off Systems

Raajratna manufactures stainless steel MIG wires in bulk Pay-Off systems for higher productivity and robotic applications with 100 - 300 kgs. weight.

Sizes from 0.80 mm (0.030") - 1.60 mm (0.062") in various grades in bright as well as in matte finish.



PAIL PACK DRUMS



PAIL PACK DRUMS

Packaging

The wires are supplied in 100 - 500 kgs. on MS / wooden reels / drums bulk reels as well as in Pay-Off drums to prevent damage.





We can provide customized packing and labelling as per customers request.

Cladding & Metallising

We supply wires of ER420, 410NiMo, 309LMo, 316L, Alloy 625, Alloy 825 etc. for overlaying / cladding and metallising processes.



Cladding



Cladding



Metallising



Metallising

Welding Approvals





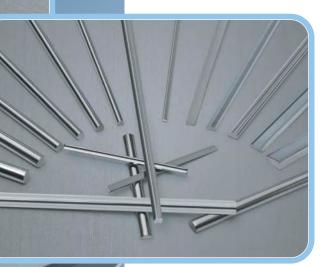






Profile Wires

Raajratna manufactures all types of stainless steel & nickel alloy wires for various applications. At Raajratna, we have a state of the art facility for manufacturing and maintaining stringent quality parameters, considering the end application of wires. We have now started manufacturing wide range of profiles with precise control on dimensions to meet the customers' requirements and uses of different shapes in applications like Filtration in petrochemical, oil & gas, water, pulp & paper and food industries, breweries, mining industries, architecture, home appliances, building industry, textile machineries, automobile industries, anti-slip wire and general purpose.



Our Standard range of Profiles : 0.40 mm² to 100.00 mm² Cross Section with a maximum Width 25.00 mm.

The Shapes are produced on an Universal Cold Rolling Mill with following highlights :

- Continuous dimensional checks with CONTACT / LASER type measuring system during rolling for highest accuracy
- Close Dimensional controls up to ±0.010 mm both on Width & Thickness can be achieved as per customer's requirement
- Dimensional checks of the finished shapes is done on the most latest Profile Projector and CMM.
- Dimensions are measured with LASER Caliper online and histogram reports can be provided on request.

Shapes

Following shapes can be produced as per customer's requirement :

Flat / Rectangular Shapes: Thickness: Min. 0.20 mm to Max. 6.00 mm with Round or Flat edges

Width : Max. 25.00 mm

Square Shapes : Min. 1.18 mm to Max. 6.30 mm with Round or Flat edges

Triangle, Oval, Half Round, Hexagonal, Tear Drop & Diamond shapes with maximum width 15.00 mm

Other special complex profiles can be produced as per the drawings

We can supply profiles from Annealed to Hard condition

Packaging

Profile & flat wires are packed in Coil of 50-500kgs, Spools of 10-1000kgs & Bars upto 6 meter cut length.

Any special requirement in packing or different cut lengths can be supplied as per customer's requests.



Reinforcement Bar

STAINLESS STEEL REINFORCEMENT BAR







Tie Wire







Proud to be the First Company in India to be accredited with CARES Certificate in Scope of Stainless Steel Cold Rolled Ribbed Coil and Decoiled Product*

Scope : BS 6744 Grade 500 Cold Rolled ribbed coil & bar - 5 to 20 mm - 1.4301 (304), 1.4429 (316LN) &1.4436 (316) Scope : BS 6744 Grade 500 Cold Rolled ribbed coil & bar - 6 to 20 mm - 1.4401 & 1.4404

Scope: BS 6744 Grade 500 Cold Rolled ribbed coil & bar - 6 to 25mm - 1.4362



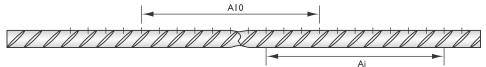
Product Properties

Chemical Composition

			С	Mn	Р	S	Si	Cr	Ni	Cu	Мо	N	Ti
SS		GRADE	Max	Max	Max	Max	Max					Max	Min
PROCESS	ROI		%	%	%	%	%	%	%	%	%	%	%
<u>ا چ</u> ا	5	1.4003-410L	0.030	1.50	0.040	0.030	1.00	10.50-12.50	0.30-1.00			0.30	
z	Ĭ	1.4301-304	0.080	2.00	0.045	0.030	1.00	18.00-20.00	8.00-10.00			0.11	
DUCTION	Z	1.4401-316/1.4404-316L	0.080	2.00	0.045	0.030	1.00	16.00-18.00	10.00-14.00		2.00-3.00	0.11	
5	A	1.4429-316LN (2.5 Mo)	0.030	2.00	0.045	0.015	1.00	16.50-18.50	11.00-14.00		2.50-3.00	0.12-0.22	
립	P	1.4436-316 (2.5 Mo)	0.050	2.00	0.045	0.030	1.00	16.50-18.50	10.50-13.00		2.50-3.00	0.11	
PRO	9	1.4571-316Ti	0.080	2.00	0.045	0.030	1.00	16.00-18.00	10.00-14.00		2.00-3.00	0.11	5xC
<u>~</u>	0	1.4362-2304 [Duplex]	0.030	2.00	0.030	0.020	1.00	22.00-24.00	3.50-5.50	0.10-0.60	0.10-0.60	0.05-0.20	
		1.4462-2205 [Duplex]	0.030	2.00	0.030	0.020	1.00	21.00-23.00	4.50-6.50	0.10-0.60	2.50-3.50	0.10-0.22	

Mechanical Properties

		Size	Tensile	Yield	% Elongation	T. S. /
	GRADE	in	Strength	Strength	A5	0.2 %Yield
		MM	N/MM²	N/MM²	≥	≥
	1.4301-304	3 - 16	≥600	≥500	14	1.10
	1.4401-316/1.4404-316L	3 - 16	≥600	≥500	14	1.10
	1.4429-316LN	3 - 16	≥600	≥500	14	1.10
PROCESS D DRAWN	1.4436-316	3 - 16	≥600	≥500	14	1.10
ֻלַּבְּ	1.4571-316Ti	3 - 16	≥600	≥500	14	1.10
	1.4362 [Duplex]	3 - 16	≥800	≥600	14	1.10
	1.4462 [Duplex]	3 - 16	≥800	≥600 14		1.10
<u> </u>	1.4301-304	16 - 25	≥600	≥500	14	1.10
5	1.4401-316	16 - 25	≥600	≥500	14	1.10
PKODUCI ION	1.4571-316Ti	16 - 25	≥600	≥500	14	1.10
<u> </u>	1.4462 [Duplex]	16 - 25	≥700	≥500	14	1.10
	1.4301-304	16 - 50	≥600	≥500	14	1.10
	1.4401-316	16 - 50	≥600	≥500	14	1.10
П	1.4429-316LN	16 - 50	≥600	≥500	14	1.10
2	1.4436-316	16 - 50	≥600	≥500	14	1.10
늗	1.4571-316Ti	16 - 50	≥600	≥500	14	1.10
呈	1.4362 [Duplex]	16 - 50	≥600	≥500	14	1.10
	1.4462 [Duplex]	16 - 50	≥600	≥500	14	1.10



Elongation:

Aj = $\bar{1}00$ mm marked before tension measured after tension to fracture measuring point 2.5 x diameter from fracture. A10 = Diameter x 10 marked before tension measured after tension to fracture measured across fracture.

Approval:

We are applying for German approval for Stainless Steel Rebars / coils as per DIN488 standard. We can also supply Stainless Steel rebars/coils as per ASTM A 955 / SFS 1259 & EN standards.



Product Properties

Weight Metre

		Dimensions	Weight / Metre	Coils	Bars	Bar Marking	Bar Marking
		MM	KG	KG Max.	M Max.	1.4301 (304)	1.4436 (316)
		3	0.056	700	12	21	Si
	Δ	4	0.100	700	12		
S	Щ	5	0.155	1600	12		
ES	7	6	0.224	1600	12		
	~	7	0.304	1600	12		
PROCESS	6	8	0.397	1600	12		
	Ĭ	10	0.620	1600	12		
<u>o</u>	Z	12	0.893	1600	12		
5	>	14	1.216	1600	12		
PRODUCTION	2	16	1.589	1600	12		
		20	2.482	1600	12		
8		25	3.878	1600	12		
	0	30	5.585	NA	12		6
		32	6.353	NA	12		
		35	7.601	NA	12	9	
		40	9.927	NA	12		E
		50	15.512	NA	12		

Choice of Reinforcing:

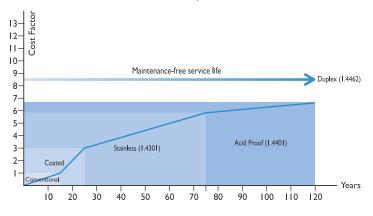
The grade of reinforcement steel will depend upon type of corrosive atmosphere.

For moderate atmosphere high yield reinforcement steel like 1.4301 (304) can be used.

For more severe corrosive atmospheres 1.4401 (316), 1.4429 (316LN), 1.4436 (316) & 1.4571 (316Ti) can be used.

For high aggressive atmospheres duplex steel 1.4362, 1.4462 (2205) is recommended.

Reinforcement Cost & Life Span Chart:





Off Shore Constructions



Bridge Constructions





Jetty Constructions



Cold Heading

Stainless Steel & Nickel Alloy Cold Heading Wires

Raajratna manufactures high quality cold heading wire from 1.00 - 25.00 mm with soap drawn skin pass uniform coating as well as from 1.00 - 10.00 mm in annealed condition in various grades.

The cold heading wires are manufactured as per ASTM A 493, ASM 5656, AMS 5853 & JIS G 4315 standard as well as other equivalent international standards.

The wires are free from surface imperfections like seam / crack and wire drawing defects such as scratches, die marks, heavy pitting, etc. The selection of grade depends on the final application and type of products to be manufactured. We can also provide technical assistance to customers, in case of any difficulty.

Surface Finish & Application

Grade	Diameter	Surface Finish	Application	
302HQ				
XM7	1.00 25.00			
304HC, 305				
304, 316, 316L			Wood Screws, Bolts,	
304			Rivets, Nuts, Automotive Industries,	
321		Soft / Coated		
410, 430	1.00 - 25.00 mm	Soft / Coated	House Hold Appliances,	
43			Aeronautics, Building	
316Cu			& Construction, etc.	
304J3S				
A 286				
631				

^{*}We can also supply shaved wire as per customer's requirement.

Coating

We are using coating salts and drawing lubricants from CONDAT and also japanese origin (There is no hazardous coating or lubricant used).

We can also supply Copper plated / moly coated wires up to 13.00 mm diameter for cold heading applications.

Packaging



Coil

Type: Coated Weight: 250 - 500 kgs

Type : Annealed Weight : 200 - 300 kgs



Carrier

2 to 3 Coils on one carrier Weight: 500 - 1500 kgs

^{*} Customised packing available on request.



Shaved Wires

Shaving Wires

Raajratna can do Shaving of wire rods from January 2018 and start supplying wires with practically Defect Free surface using Shaved Wire rod for cold heading and also spring wires where defect free surface is a must for achieving superior spring characteristics.

The shaving machine can also be used for shaving wire rods of Aluminum, Copper, Nickel and other special grades on request.



Applications

- S S Screws & Rivets
- S S Spring Wires





Medical Wires

Stainless Steel & Nickel Alloy Profile Wires

1.00 mm² to 100.00 mm² Cross Section with a Size Range

maximum Width 25.00mm

Grades Stainless Steel, Nickel Alloy & Duplex Steel

Flat, Rectangular, Square, Triangle, Oval, Half Round, Shapes

Hexagonal, Tear Drop & Diamond

Condition Annealed to Hard

* ISO 13485: 2016 Certified





Orthopedic Implants

Cardiac Stents

Dental Implants

Catheters

Bone Pins

Suture

Surgical Clips & Staples

Stylets

Orthopedic Cables

Lancets

Cannulas and Trocars

and many more...

Drill Bits

Braided Plastic Tubes

We can provide optimum medical wire in 302,304,304V,316,316LVM,316LRM,420 & 420B grades and tempers. We will manage & deliver high quality custom medical wires in quantities that fit your needs, at prices that fit your budget, and in turnaround times that fit your schedule. We produce custom made medical wires & bars that meet or exceed customer expectations for domestic & as well international standards.

: 0.03 mm to 25.00 mm (0.0012" - 1.00") Size Range

Wire in Cut Length : 0.20 mm to 1.50 mm (25 mm to 1200 mm Cut Length)

Finish : SoftAnnealed - 1/4 hard, 1/2 hard, 3/4 hard, full hard (Centerless ground or drawn finish)

Tolerance Range : 0.05mm (0.002") available on request

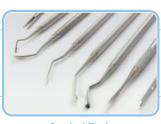
Standards : ASTM F-138, ASTM A-313, ISO 5832-1, EN 10270-3 & IS 6528

We can also provide custom made wires & bars to suit customers specifications for maximum performance and endurance.





Screws



Surgical Tools



Plates for Body



Applications



Kitchenware and Basket



Staples



Balls



Nails



Screens



Spokes



Filters



Lashing Wire (Cheese Coil)



Flexible Connectors



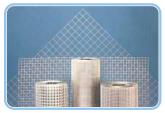
Wire Ropes



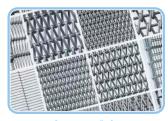
Springs



Chains



Wire Mesh



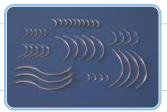
Conveyor Belts



Wall Ties



Braiding Hoses



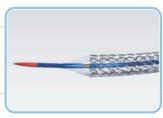
Surgical Needles



Surgical Equipments



Orthopaedic Implants



Stent Wire



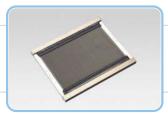
Applications



Spring Washer



Helicoil Inserts



Reed for Textile Looms



Piston Rings



Knitting



Wool



Fibre



Sub-Marine Cable



Ball Point Pen Tip



Free Cutting



Welding Electrodes



Fasteners





Automobile



Power Plants



Ship Building



Medical



Aviation



Textile



Watch



Stainless Steel Industrial Brushes



Packaging

Stainless Steel Nickel Alloy Wires

Stainless steel wires in coils are wrapped with plastic stretch film / HDPE and then packed in plywood boxes / wooden pallets or supplied on carriers as per customer's requirements. The wires can also be supplied in corrugated drums / wooden or steel reels.

Туре	Delivery Condition	Diameter in mm	Weight min / max in kgs	Inside Dia. in mm
	Annealed	0.025 to 1.60		spools
SPOOL	Bright hard drawn (For springs / ropes)	0.06 to 0.60	sizes and weigh	ts upon request
	MIG wire, bright lightly drawn	0.60 to 1.60	1 / 15	DIN-spools
WOODEN REEL	Annealed	1.00 to 3.00	200 / 400	
VVOODEN REEL	Bright drawn	0.80 to 3.00	200 / 400	
WOODEN / STEEL REEL	Full hard for spring	0.25 to 2.80	100 / 500	
		0.80 to 2.00	50 / 100	300 / 400
		2.00 to 3.00	200 / 400	500 / 600
	Annealed	3.00 to 6.00	300 / 500	500 / 600
		6.00 to 10.00	300 / 500	500 / 800
		1.50 to 2.00	50 / 100	350 / 600
COIL	Bright drawn	2.00 to 6.00	200 / 400	500 / 600
		6.00 to 25.00	300 / 500	700 / 750
		0.50 to 0.70	15 / 30	230 / 250
	Day dway full hand for anyings & range	0.75 to 1.20	30 / 80	300 / 400
	Dry drawn, full hard for springs & ropes	1.30 to 1.70	50 / 100	300 / 400
		1.80 to 22.00	200 minimum	500 minimum
DRUM / PAY OFF PAPER CORE	Annealed, light or hard drawn	0.75 to 1.60	100 / 200	330



Euro Coil

Coils on Pallet

Coil

Carrier

Wooden Reels on Pallets

Steel Reel



Packaging



* Full PT, DIN, US, BS & NS series of plastic / metal spools are also available on request.



Bright Bars Wooden Box/Euro Pallets MIG & Core Wire in Wooden Box TIG Bars in Corrugated & Plastic Tubes Shaped Wires in Coil with Hook



ies	TYPE	С	Mn	Р	S	Si	Cr	Ni	Cu	Мо
Series	GRADE	Max %	Max %	Max %	Max %	Max %	%	%	%	Max %
	201 (0.9%Ni)	0.15	7.00 - 9.00	0.100	0.030	1.00	14.0 - 16.0	0.90 - I.20	1.50 - 2.50	0.30
	201 (3%Ni)	0.15	7.00 - 9.00	0.100	0.030	1.00	14.0 - 17.0	3.00 - 4.00	1.50 - 2.50	0.30
200	AISI 201	0.15	5.50 - 7.50	0.060	0.030	0.75	16.0 - 18.0	3.50 - 5.50	0.75	
7	AISI 202	0.15	7.50 - 10.00	0.060	0.030	1.00	17.0 - 19.0	4.00 - 6.00		
	204 Cu	0.08	6.50 - 8.50	0.060	0.030	2.00	16.0 - 17.0	1.50 - 3.00	2.00 - 3.00	0.30
	RAAJ2348	0.15	12.00 - 14.00	0.020	0.020	0.75	14.0 - 15.0	1.00 - 1.50	1.50 - 2.00	0.80
	301	0.12	2.00	0.045	0.030	1.00	16.0 - 18.0	6.0 - 8.0		
	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 - 11.0	3.0 - 4.0	
	X M7	0.03	2.00	0.045	0.030	1.00	17.0 - 19.0	8.0 - 10.0	3.0 - 4.0	0.10
	303	0.08	2.00	0.045	0.15 - 0.35	1.00	17.0 - 19.0	8.0 - 10.0		
	303Cu	0.08	2.50	0.045	0.15 - 0.35	1.00	17.0 - 19.0	8.0 - 10.0	1.4 - 3.0	
	304	0.08	2.00	0.045	0.030	1.00	18.0 - 20.0	8.0 - 10.0		
	304HC	0.08	2.00	0.045	0.030	1.00	18.0 - 20.0	8.0 - 10.0	2.0 3.0	
	304L (10%)	0.03	2.00	0.045	0.030	1.00	18.0 - 20.0	10.0 - 12.0		
	304L	0.03	2.00	0.045	0.030	1.00	17.5 - 19.5	8.0 - 10.5		
	305	0.06	2.00	0.045	0.030	1.00	17.0 - 19.0	11.0 - 13.0		
	310S	0.08	2.00	0.045	0.030	1.50	24.0 - 26.0	19.0 - 22.0		
	253MA	0.05 - 0.10	0.80	0.040	0.030	1.10 - 2.00	20.0 - 22.0	10.0 - 12.0		
	314	0.25	2.00	0.045	0.030	1.50 - 3.00	23.0 - 26.0	19.0 - 22.0		
	316	0.08	2.00	0.040	0.030	1.00	16.0 - 18.0	10.0 - 14.0		2.00 - 3.00
	316 (2.5Mo)	0.05	2.00	0.045	0.030	1.00	16.5 - 18.5	10.5 - 13.0		2.50 - 3.00
	316L	0.03	2.00	0.045	0.030	1.00	16.0 - 18.0	10.0 - 14.0		2.00 - 3.00
	316LVM / 316LRM	0.03	1.00 - 2.00	0.025	0.010	0.75	17.4 - 19.0	13.0 - 15.0	0.50	2.50 - 3.00
	316Ti	0.08	2.00	0.045	0.030	1.00	16.0 - 18.0	10.0 - 12.0		2.00 - 3.00
	ER317L	0.03	1.00 - 2.50	0.030	0.030	0.30 - 0.65	18.0 - 20.50	13.0 - 15.0	0.75	3.00 - 4.00
300	ER318Si	0.08	1.00 - 2.50	0.030	0.030	0.65 - 1.00	18.0 - 20.0	11.0 - 14.0	0.75	2.00 - 3.00
m	321	0.08	2.00	0.045	0.030	1.00	17.0 - 19.0	9.0 - 13.0		
	321H	0.04 - 0.08	2.00	0.045	0.030	1.00	17.0 - 19.0	9.0 - 13.0		
	330Nb	0.030	1.00	0.035	0.015	1.00 - 3.00	19.0 - 22.0	34.5 - 37.0		
	347	0.08	2.00	0.045	0.030	1.00	17.0 - 19.0	9.0 - 13.0		
	347H	0.04- 0.08	2.00	0.045	0.030	1.00	17.0 - 19.0	9.0 - 13.0		
	ER347	0.08	2.50	0.030	0.030	0.30 - 0.65	19.0 - 21.5	9.0 - 11.0	0.75	
	ER307Si	0.12	6.00 / 7.50	0.030	0.020	0.65 - 0.95	17.2 - 19.8	8.0 - 9.4	0.30	0.30
	ER308	0.04 - 0.08	2.00	0.020	0.020	0.30 - 0.65	19.0 - 21.0	9.5 - 11.0		
	ER308L	0.03	1.00 - 2.50	0.030	0.030	0.30 - 0.65	19.5 - 22.0	9.0 - 11.0		
	ER308Lsi	0.03	1.00 - 2.50	0.030	0.030	0.65 - 1.00	19.5 - 22.0	9.0 - 11.0		
	ER308L (Low % Si)	0.02	1.00 - 2.50	0.020	0.010	0.15	19.5 - 22.0	9.5 - 11.0		
	ER309	0.12	1.00 - 2.50	0.030	0.030	0.30 - 0.65	23.0 - 25.0	12.0 - 14.0		
	ER309L	0.03	1.00 - 2.50	0.030	0.030	0.30 - 0.65	23.0 - 25.0	12.0 - 14.0		
	ER309Lsi	0.03	1.00 - 2.50	0.030	0.030	0.65 - 1.00	23.0 - 25.0	12.0 - 14.0		
	ER310	0.08 - 0.15	1.50 / 2.00	0.030	0.025	0.30 - 0.65	25.0 - 28.0	20.0 - 22.0		
	ER312	0.15	2.00	0.025	0.025	0.30 - 0.65	29.0 - 32.0	8.0 - 10.0		
	ER316L	0.03	1.00 - 2.50	0.030	0.030	0.30 - 0.65	18.0 - 20.0	11.0 - 14.0		2.20 - 2.75
	ER316Lsi	0.03	1.00 - 2.50	0.030	0.030	0.65 - 1.00	18.0 - 20.0	11.0 - 14.0		2.00 - 3.00
	ER316L (Low % Si)	0.02	1.00 - 2.50	0.020	0.010	0.15	18.0 - 20.0	11.0 - 14.0		2.50 - 3.00
	ER630	0.05	0.25 - 0.75	0.030	0.030	0.75	16.0 - 16.75	4.5 - 5.0	3.25 - 4.00	0.75
	2340	0.10	2.00	0.040	0.030	1.00	16.0 - 18.0	8.0 - 10.0		1.30 - 1.80



N	Ti	Others	EQUIVALENT INTERNATIONAL STANDARDS						
Max %	%	%	W. Nr.	JIS	BS	AFNOR	UNI		
0.25									
0.25									
0.25			1.4372						
0.25									
0.25			1.4597						
0.25			1.4597						
0.10			1.4310						
0.10			1.4310	SUS302	302S17	Z I2CN 17 - 07	X 12CrNi 1707		
			1.4567		394\$17	Z 2CN4 18 - 10	7.1261111		
			1.4305	SUS303	303S31	Z 10CNF 18 - 09	X 10CrNiS 1809		
0.10			1.4570		303331	2 100141 10 - 07	7 10011415 1007		
			1.4301	SUS304	304S15	Z 6CN 18 - 09	X 5CrNi 1810		
			1.1501		301313	2 0014 10 - 07	7.561141 1010		
			1.4306	SUS304L	304\$11	Z 2CN 18 - 10	X 2CrNi 1811		
			1.4307	SUS304L	304\$11	Z 2CN 18 - 10	X 2CrNi 1811		
			1.4303						
0.14 - 0.20		Ce 0.030-0.080	1.4845						
			1.4835						
			1.4841						
			1.4401	SUS316	316S31	Z 6CND 17 - 11	X 8CrNiMo 1713		
0.11			1.4436						
			1.4404	SUS316L	316811	Z 2CND 17 - 12	X 2CrNiMo 1712		
0.10		3.30Mo+Cr>26.0	1.4441						
	5X%C up to 0.8		1.4571		320S31-320S17	Z 6CNDT 17 - 12	X 6CrNiMoTi 1712		
		Nb=8XC min1.00%max.	1.4576						
	5X%C Minimum		1.4541	SUS321	321531	Z 6CNT 18 - 10	X 6CrNiTi 1811		
	5X%C Minimum		1.4541	SUS321	321531	Z 6CNT 18 - 10	X 6CrNiTi 1811		
400 ppm		Nb : 0.80 - 1.00							
		Nb>=10X%C	1.4550						
		Nb>=I0X%C	1.4550						
		Nb=10XCmin1.0%max	1.4551						
			1.4370						
			1.4316						
			1.4316		308S92	Z 2CNS 20 - 10			
			1.4316						
			1.4332		309S94				
			1.4332		309S94				
			1.4332						
			1.4842		310S94	Z I2CN 25 - 20			
			1.4337		312S94				
			1.4430		316S92	Z 2CND 19 - 13			
			1.4430						
		Nb+Ta=0.15-0.30							



ies	TYPE	С	Mn	P	S	Si	Cr	Ni	Cu	Мо
Series	GRADE	Max %	Max %	Max %	Max %	Max %	%	%	%	Max
	409	0.08	1.00	0.045	0.030	1.00	10.50 - 12.50			
	409Cb	0.06	1.00	0.045	0.040	1.00	10.50 - 11.75	0.50 max.		
	410	0.15	1.00	0.040	0.030	1.00	11.5 - 13.5			
	4I0NiMo	0.060	0.60	0.030	0.030	0.50	11.0 - 12.5	4.00 - 5.00	0.75 max.	0.40 - 0.70
	416	0.15	1.00	0.040	0.15 - 0.30	1.00	12.0 - 14.0			
	420A	0.15 - 0.25	1.00	0.040	0.030	1.00	12.0 - 14.0			
	420B	0.30 - 0.37	1.00	0.030	0.015	1.00	12.0 - 14.0			
	420C	0.43 - 0.50	1.00	0.040	0.030	1.00	12.0 - 14.0			
	420 Mo	0.33 - 0.45	1.50	0.040	0.015	1.00	15.5 - 17.5	1.00 max.		0.80 - 1.30
	ER420	0.30 - 0.37	1.00	0.030	0.015	1.00	12.0 - 14.0			
	430	0.10	1.00	0.040	0.030	0.75	16.0 - 18.0	0.60		
0	430L	0.030	1.00	0.040	0.030	1.00	16.0 - 18.0			
400	430LNb	0.020	0.80	0.030	0.020	0.50	17.8 - 18.8	0.30	0.30	0.30
	430Cu	0.12	0.30 -0.50	0.040	0.010	0.30 - 0.50	16.0 - 18.0	0.50 max.	0.85 - I.00	
	430F	0.12	1.25	0.060	0.150	1.00	16.0 - 18.0			
	430F DIN	0.12	1.25	0.060	0.150	1.00	16.0 - 18.0			0.20 - 0.60
	430Nb	0.08	1.00	0.045	0.030	1.00	16.0 - 18.0			
	431	0.12 - 0.22	1.50	0.040	0.015	1.00	15.0 - 17.0	1.50 - 2.50		
	434	0.12	1.00	0.040	0.030	1.00	16.0 - 18.0	0.50 max.	0.75 max.	0.75 - 1.25
	439Ti	0.05	1.00	0.040	0.015	1.00	16.0 - 18.0			
	440C	0.95 - 1.20	1.00	0.040	0.030	1.00	16.0 - 18.0	0.60		0.75
	441	0.03	1.00	0.040	0.015	1.00	17.5 - 18.5			
	446	0.20	1.50	0.040	0.030	1.00	23.0 - 27.0			
47	2101	0.040	4.00 - 6.00	0.040	0.030	1.00	21.00 - 22.00	1.35 -1.70	0.10 - 0.80	0.10 - 0.80
Steel	2205	0.030	2.00	0.030	0.02	1.00	21.00 - 23.00	4.50 - 6.50	0.10 - 0.60	2.50 - 3.50
	2209	0.030	0.50 - 2.00	0.030	0.030	0.90	21.50 - 23.50	7.50 - 9.50	0.75	2.50 - 3.50
e X	2304	0.030	2.00	0.030	0.020	1.00	22.0 - 24.0	3.50 - 5.50	0.10 - 0.60	0.10 - 0.60
Duplex	2507	0.030	1.20	0.035	0.020	0.80	24.0 - 26.0	6.00 - 8.00	0.50 max.	3.00 - 5.00
	2553	0.040	1.50	0.040	0.030	1.00	24.0 - 27.0	4.50 - 6.50	1.50 - 2.50	2.90 - 3.90
	2594	0.030	2.50	0.030	0.020	1.00	24.0 - 27.0	8.0 - 10.50	1.50	2.50 - 4.50
es	TYPE	С	Mn	Р	S	Si	Cr	Ni	Cu	Мо
Series	AISI	Max %	Max %	Max %	Max %	Max %	%	%	%	Max

ies	TYPE	С	Mn	Р	S	Si	Cr	Ni	Cu	Мо
Series	AISI	Max %	Max %	Max %	Max %	Max %	%	%	%	Max
	Alloy 82 (ERNiCr-3)	0.05					20.0	67.0 min.		
	904L	0.025	1.00 - 2.50	0.020	0.030	0.50	19.5 - 21.5	24.0 - 26.0	1.20 - 2.00	4.20 - 5.20
	X 750	0.08	0.30		0.010	0.50	14.0 - 17.0	Ni+Co 70 min.	0.50	
es	Nickel 200	0.15	0.35		0.010	0.35		99.0 min.	0.25	
	Alloy 600	0.15	1.00		0.015	0.50	14.0 - 17.0	72.0 min.	0.50	
Grad	Alloy 60 I	0.10	1.00	0.015	0.015	0.50	21.0 - 25.0	58.0 - 63.0	I.0 max.	
J G	Alloy 625	0.10	0.50	0.015	0.015	0.50	20.0 - 23.0	58.0 min.		8.0 - 10.0
ē	C-276	0.01	1.00	0.040	0.030	0.08	14.5 - 16.5	Bal.		15.0 - 17.0
Oth	Alloy 20	0.07	2.00	0.045	0.035	1.00	19.0 - 21.0	32.0 - 38.0	3.00 - 4.00	2.00 - 3.00
0	Alloy 825	0.05	1.00		0.030	0.50	19.5 - 23.5	38.0 - 46.0	1.50 - 3.00	2.50 - 3.50
	631 (17-7PH)	0.09	1.00	0.040	0.030	1.00	16.0 - 18.0	6.50 - 7.80		
	Alloy 400	0.30	2.00		0.024	0.50		63.0 min.	28.0 34.0	
	A 286	0.080	2.00		0.030	1.00	13.5 - 16.0	24.0 - 27.0		1.00 - 1.50

^{*} Alloy 418, Alloy 22, Nickel 61 (ERNi-I) & Cusn7 is available on request.



N	Ti	Others		EQUI	VALENT INTE	RNATIONAL STAND	ARDS
Max	%	%	W. Nr.	JIS	BS	AFNOR	UNI
	6 X %C		1.4512				
		Cb I 0Xc Min0.75 Max					
			1.4006				
			1.4351				
			1.4005				
			1.4021				
			1.4034				
			1.4122				
			1.4028				
			1.4016	SUS430	430517	Z 8C17	X8CrI7
			1.4016				
		Nb 0.05 +7 (C+N)-0.50	1.4016				
			1.4104				
		Nb 12 X %C	1.4511				
			1.4057				
			1.4113				
	0.15 - 0.80		1.4510				
			1.4125				
	0.10 - 0.60	Nb 0.35 - 1.00	1.4509				
0.25			1.4762				
0.20 - 0.25			1.4162				
0.10 - 0.22			I.4462	SUS32953L	318813		
0.08 - 0.20							
0.05 - 0.22			1.4362				
0.24 - 0.32							
0.10 - 0.25							
0.20 - 0.30		W - 1.0					

N	Ti	Others	Iron	Co	Al	Tungsten	Vanadium	Niobium + Tantalum
Max	%	%		Max				
			3.00 max.					2.50
	2.25 - 2.75		5.00 - 9.00		0.40 - 1.00			0.70 - 1.20
			0.40 max.					
	0.50		6.0 - 10.0	1.00	0.35			1.00
					1.00 - 1.70			
	0.40 max.		5.00 max.	1.00	0.40 max.			3.15 - 4.15
			4.0 - 7.0	2.50		3.00 - 4.50	0.35 max.	
			Bal.					8 x C - 1.00
	0.60 - 1.20		22.0 min.		0.20 max.			
			1.4568	SUS631	0.75 - 1.50			
			2.50 max.					
	1.90 - 2.35	B 0.001 - 0.010			0.35 max.		0.10 - 0.50	



Quality Assurance System

Quality Policy

We at Raajratna are committed to satisfy the needs and expectation of the customers by manufacturing and supplying stainless steel wires, heat resistance wires, welding wires, profile wires, reinforcement bars and bright bars of stated quality, timely delivery and reliable services at all times.

This is achieved by Encouraging participation of employees.

Supplying reliable product assured by complying requirements and continuously improving the effectiveness of quality management system.



Tensile Testing for Fine Wires



Approvals













Tensile Testing Machine





The company has modern production facilities manned by experienced and committed personnel to produce wires and bright bars conforming to various international standards.

The quality is built into the product as a result of inspection and testing at various stages of production starting from raw material stage to finish product. We have also installed spectrometer for chemical analysis of incoming raw material.









Chemical Lab Salt Spray Test

Torsion Tester

XRF Analyzer



Raajratna's Global Presence



Enquiries & Orders

Please provide following information while forwarding your enquires and orders:

- Size
- ▶ Grade (as per international standards) with any change from standard composition.
- Finish condition, tensile strength and surface finish
- ▶ End application
- Quantity for each size and each grade
- Delivery Schedule
- Packaging requirements coil, spool etc. with specific dimensions
- ▶ Port of shipment / Destination

For more information please visit our website: www.raajratna.com



Research & Development







Our Testing Facilities Include

- Eddy Current Test
- Metallurgical Tests
- Mechanical Tests
- Inter-granular Corrosion Test
- Surface Roughness Tester
- Salt Spray Test

- Spectro & XRF Analyser
- Radioactive Test
- Feedability Test for MIG Wire
- Profile Projector
- CMM

Upgradation of technology and continual research & developments helped us to meet critical standards of end users as per their requirements. Such infrastructure automatically leads to improved processes, world-class practices and recognised quality benchmarks enabling the company to achieve excellence in the product.







Infrastructure, Packaging & Logistics













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Subsidiary Companies

Plant - Indonesia

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