

**UNIFORM STRENGTH
AT EVERY LENGTH**

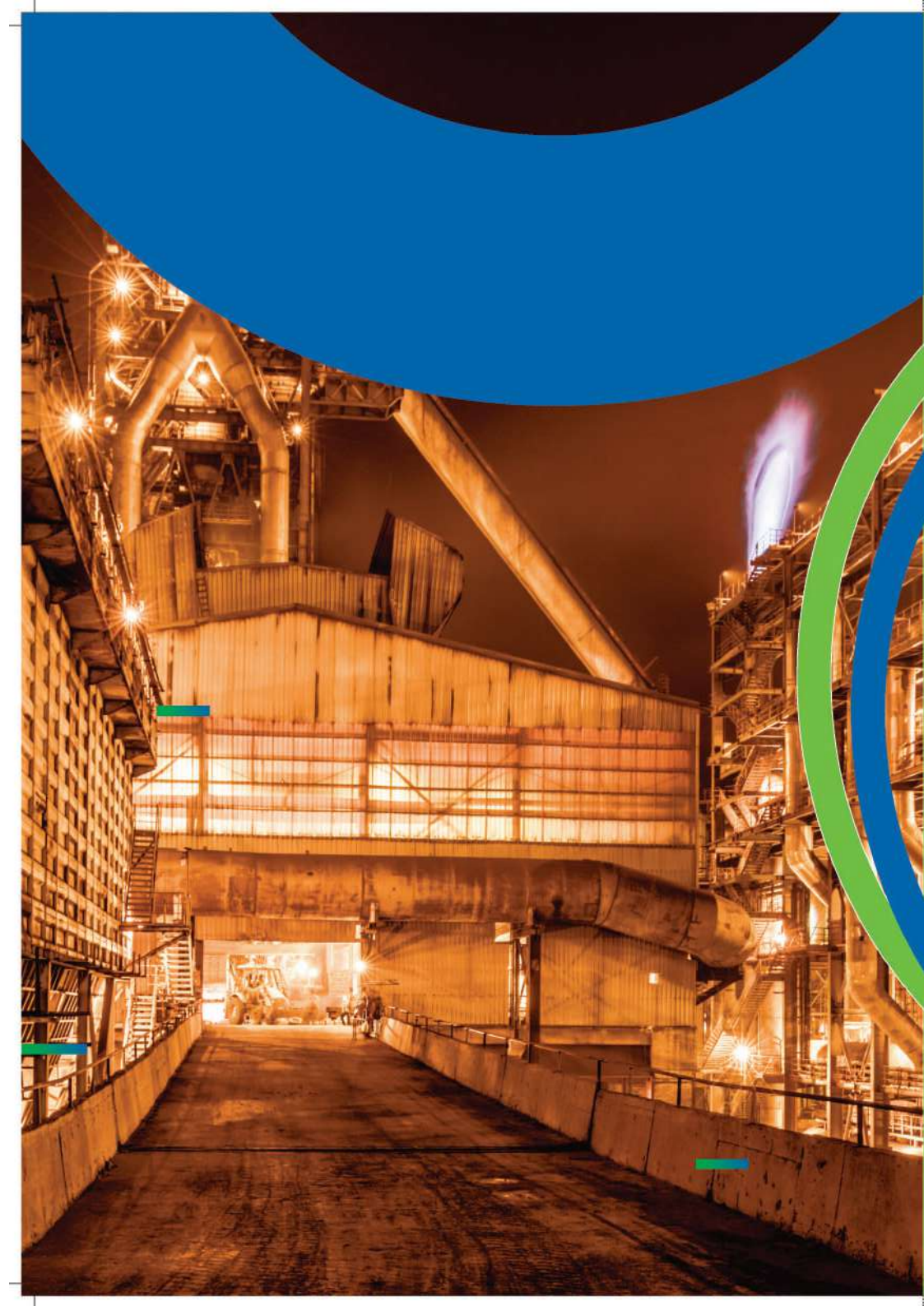
U-WIRRO
WIRE RODS

 **vedanta**
transforming elements

U-WIRRO
WIRE RODS

U-Wirro Wire Rods are produced from high quality raw materials and are known for their uniform strength and consistent quality. They are used in various applications such as construction, manufacturing and infrastructure. U-Wirro Wire Rods are available in various grades and sizes to meet the needs of different industries.

U-WIRRO
WIRE RODS



THE BEGINNING OF A NEW LEGACY

Vedanta Group is a globally diversified Natural Resources Company specializing in Zinc, Lead, Silver, Iron Ore, Steel, Copper, Aluminum, Power, Oil and Gas. It is the Largest Mining and Non-ferrous Metals Company in India and has Mining, Petroleum and Gas Operations in various countries across the Globe. The group's journey consists of regular geological exploration and discoveries, technological advancements, sustainable developments, turning around businesses and setting new industry benchmarks.

With the acquisition of integrated steel manufacturing unit of Electrosteel Steels Limited (ESL), Vedanta group is now looking to set new benchmarks in the steel industry. At the Greenfield Integrated Steel Plant in Bokaro (Jharkhand), ESL has a current capacity and produces approximately 1.5 Million Ton per annum of high-quality Steel Intermediaries and Products - Pig Irons, Billets, TMT Bars, Wire Rods, and Ductile Iron Pipes.

With process like benchmarking, operational and commercial excellence at every stage of value chain of steel Business, backed by state of the art technology and partnership with internationally reputed suppliers, the entity is poised for delivering refreshed and enhanced quality products. Along with technological interventions, entity is equally "in sync" with latest ecological standards for production of "GREEN" steel, contributing to responsible nation building and serving the communities in a more sustainable way.

BEHIND THE SCENE OF ESL WIRE ROD MILL

Equipment and features:

- 1 Atomized reheating furnace** using BF gas as fuel, ensures optimized heating and promotes uniform mechanical properties in the wire rods with low scale formation.
- 2 Alternate horizontal and vertical rolling strands** in roughing and intermediate mill ensure close dimensional tolerances and prevent various defects like laps, porosity, segregation and stickers in the finished product.
- 3 Wear-resistant tungsten carbide rings** in the rolls of resizing, finishing and pre-finishing unit ensure high quality surface finish and close dimensional tolerances.
- 4 Crop shears** are provided at various locations in the line to remove front and tail ends, ensuring that the cold and split ends do not carry over and affect the quality of the wire rod.
- 5 Pre-finishing mill** provides accuracy in the stock sizes via No Twist Mill (NTM), so that uniformity is maintained to ensure high accuracy for longer period.
- 6 No Twist Mill (NTM)** products deliver close dimensional tolerances with superior grain structure at high speed rolling due to less stress generation and controlled temperature rolling
- 7 Reducing and Sizing Mill (RSM)** have smaller and accurate entry guides that are set with optical instruments to ensure high dimensional accuracy in smaller size wire rods without any scratch on them.
- 8 Post-rolling water boxes** ensure superior micro structure with high precision wire rods of fine grain structure in order to have minimal scale generation and consistent mechanical properties.
- 9 On-line rod gauges** installed at various points, enable active monitoring and control of the sectional dimensions for a close dimensional tolerance range.
- 10 Morgan enhanced water cooling system** encourages uniform cooling of the rods, enabling uniform mechanical properties.
- 11 High-speed laying head** along with **intellect pinch roll**, converts the high speed linear rod path onto a controlled loop of predetermined diameter and places the formed rings onto the stelmor conveyor.
- 12 Stelmor conveyor** conveys the rod rings in an overlapping pattern from the laying head to the coil reform station to produce the desired metallurgical and mechanical properties of specific grades of steel.
- 13 Reform tub** collects and arranges rod rings for formation of coils within the reform tub and provides a buffer storage space to allow collection of the next coil while the completed coil is removed.



THE ALL-PURPOSE V-WIRRO

VWirro comes in low carbon, medium carbon and high carbon grades to fit a wide range of applications in engineering, construction, power and automobile industry. With features like uniform mechanical properties, excellent surface finish and close dimensional tolerance, each wire rod is free from surface defects and inclusions.

SPECIALITY OF ESL WIRE RODS

- Uniform mechanical properties across length
- Excellent surface finish and close dimensional tolerance due to usage of tungsten carbide rings in rolls
- Free from surface defects
- Excellent thermo-mechanical properties and high dimensional consistencies
- Superior grain structure due to less stress generation and controlled temperature rolling
- Superior cooling system ensuring low scale formation in products
- Low phosphorous and sulphur content
- Low level of metallic and non-metallic inclusions resulting in superior drawability



WIRE ROD MILL FEATURES

- Annual production capacity 0.6 mtpa
- Outer diameter 1250
- Inner diameter 850
- Coil weight 2 metric tonnes
- Size range 5.5~16.0 mm, 0.5 mm upgrade
- Mill speed 110 metre per second
- Number. Of strands 30

DIMENSIONAL TOLERANCE

Diameter (mm)	Tolerance of Diameter (mm)	Ovality (mm)
5.5~10.0	±0.15	_0.24
10.5~15.0	±0.20	_0.32
15.5~16.0	±0.25	_0.40

APPLICATION OF WIRE RODS

PRODUCT CATEGORY	APPLICATIONS
Low carbon wire rods	Cable armour wire, binding wire, nails, fencing wire, nut & bolt, screw, fasteners etc.
Medium carbon wire rods	High tensile fasteners for automobile and construction industries, wire for elevators, cableways & cranes, nut & bolt, screw, rivet, axle.
Cold heading quality steel wire rods	Automobile and machine parts like screw, high tensile fasteners, bush, spline, socket, connecting rod, shaft, gear, quarter, nails, rivets etc.
High carbon wire rods	Wire for concrete reinforcement for railway sleepers, tyre bead, umbrella ribs, cycle spoke, spring application, wire rope, needle wire, conveyor wire etc.
Alloy steel wire rods	Case hardening automobile and machine parts like gears, pinion, crown wheel, cam shaft etc.

PRODUCT SPECIFICATIONS

LOW CARBON

GRADE	CARBON%	MANGANESE%	SULPHUR%	PHOSPHORUS%	SILICON%	Al%
SAE1016	0.04-0.06	0.25-0.40	0.025MAX	0.025MAX	0.06MAX	0.012MAX
SAE1018 (SWR10)	0.10MAX	0.30-0.60	0.025MAX	0.025MAX	0.10MAX	0.020-0.40
SAE1010 (SWR14)	0.08-0.23	0.30-0.60	0.025MAX	0.025MAX	0.10-0.30	0.020-0.40
SAE1020	0.18-0.23	0.30-0.60	0.025MAX	0.025MAX	0.15-0.35	0.020-0.40
SAE1025	0.22-0.28	0.30-0.60	0.025MAX	0.025MAX	0.15-0.35	0.020-0.40

MEDIUM CARBON

GRADE	CARBON%	MANGANESE%	SULPHUR%	PHOSPHORUS%	SILICON%	Al%
SAE1030	0.28-0.34	0.60-0.90	0.025MAX	0.025MAX	0.15-0.35	0.20-0.050
SAW1035	0.32-0.38	0.60-0.90	0.025MAX	0.025MAX	0.15-0.35	0.20-0.050
SAE1038	0.35-0.42	0.60-0.90	0.025MAX	0.025MAX	0.15-0.35	0.20-0.050
SAE1040	0.37-0.40	0.60-0.90	0.025MAX	0.025MAX	0.15-0.35	0.20-0.050
SAE1541	0.36-0.44	1.35-1.65	0.025MAX	0.025MAX	0.10-0.30	0.20-0.050
EN8D	0.40-0.45	0.70-0.90	0.025MAX	0.025MAX	0.15-0.36	0.20-0.050

PRODUCT SPECIFICATIONS

COLD HEADING QUALITY STEEL

GRADE	CARBON%	MANGANESE%	SULPHUR%	PHOSPHORUS%	SILICON%	Al%
SAE1008	0.10 MAX	0.30-0.60	0.20MAX	0.025MAX	0.10 MAX	0.20-0.050
SAE1010	0.08-0.13	0.30-0.60	0.20MAX	0.025MAX	0.10 MAX	0.20-0.050
SAE1012	0.10-0.15	0.30-0.60	0.20MAX	0.025MAX	0.10 MAX	0.20-0.050
SAE1015	0.13-0.18	0.30-0.60	0.20MAX	0.025MAX	0.10 MAX	0.20-0.050
SAE1018	0.15-0.20	0.60-0.90	0.20MAX	0.025MAX	0.10 MAX	0.20-0.050
SAE1020	0.18-0.23	0.60-0.90	0.20MAX	0.025MAX	0.10 MAX	0.20-0.050

ALLOY STEEL

GRADE	CARBON%	MANGANESE%	SULPHUR%	PHOSPHORUS%	SILICON%	Al%	CR%	MO%
16MnCr5	0.14-0.19	1-1.3	0.03MAX	0.25MAX	0.15-0.35	0.02-0.05	0.9-1.1	
20MnCr5	0.17-0.22	1.1-1.4	0.03MAX	0.25MAX	0.15-0.35	0.02-0.05	1.1-1.3	
SOM415H	0.13-0.18	0.6-0.85	0.025MAX	0.25MAX	0.15-0.35	0.02-0.05	0.9-1.2	0.15-0.03
SOM420N	0.17-0.23	0.6-0.85	0.03MAX	0.25MAX	0.15-0.35	0.02-0.03	0.9-1.2	0.15-0.03
SAE8620	0.18-0.23	0.7-0.90	0.03MAX	0.25MAX	0.15-0.35	0.02-0.03	0.4-0.6	0.15-0.25
SAE4135	0.33-0.38	0.7-0.9	0.03MAX	0.03MAX	0.15-0.03	0.02-0.03	0.8-1.1	0.15-0.25
SAE4140	0.38-0.43	0.38-0.43	0.03MAX	0.03MAX	0.15-0.03	0.02-0.03	0.8-1.1	0.15-0.25

PRODUCT SPECIFICATIONS

HIGH CARBON STEEL

GRADE	CARBON%	MANGANESE%	SULPHUR%	PHOSPHORUS%	SILICON%	Al%
HC36/40	0.36-0.4	0.60-0.80	0.03MAX	0.03MAX	0.15-0.30	
HC41/45	0.41-0.45	0.60-0.80	0.03MAX	0.03MAX	0.15-0.30	
HC51/55	0.51-0.55	0.60-0.80	0.03MAX	0.03MAX	0.15-0.30	
HC56/60	0.56-0.60	0.60-0.80	0.03MAX	0.03MAX	0.15-0.30	
HC61/65	0.61-0.65	0.60-0.80	0.03MAX	0.03MAX	0.15-0.30	
HC66/70	0.66-0.70	0.60-0.80	0.03MAX	0.03MAX	0.15-0.30	0.10MAX
HC71/75	0.70-0.75	0.60-0.80	0.03MAX	0.03MAX	0.15-0.30	0.10MAX
HC76/80	0.76-0.8	0.60-0.80	0.03MAX	0.03MAX	0.15-0.30	0.10MAX
HC81/85	0.81-0.85	0.60-0.80	0.03MAX	0.03MAX	0.15-0.30	0.25MAX
PSC116	0.75-0.8	0.60-0.80	0.03MAX	0.03MAX	0.15-0.35	0.10-0.20
TB 68	0.66-0.7	0.65-0.75	0.03MAX	0.03MAX	0.15-0.35	
SRWH52A	0.51-0.55	0.40-0.6	0.03MAX	0.03MAX	0.15-0.35	
SRWH62A	0.6-0.65	0.40-0.6	0.03MAX	0.03MAX	0.15-0.35	
SRWH82A	0.8-0.85	0.40-0.6	0.03MAX	0.03MAX	0.15-0.35	

ELECTRODE EQUALITY

GRADE	CARBON%	MANGANESE%	SULPHUR%	PHOSPHORUS%	SILICON%	Al%
EQ	0.08MAX	0.38-0.52	0.025MAX	0.025MAX	0.1MAX	0.012MAX
EM12K	0.06-0.12	0.8-1.2	0.025MAX	0.025MAX	0.1MAX	0.10MAX

KEEPING CUSTOMERS FIRST

- Our short lead time enables our business partners to respond quickly to the requirements of their customers
- We make available our rolling programme to our customers in advance. This helps them schedule their production accordingly, also allowing them to reduce stock inventory at their plant
- Modern handling facilities at our plant and stockyard across India ensure delivery of wire rods with minimal surface damage



WE ALSO MAKE



DI PIPES



BILLETS



PIG IRON



TMT BAR

OUR FOOTPRINTS ALL OVER INDIA

