



**UNIFORM
STRENGTH
AT EVERY LENGTH**

The journey of **excellence**



Vedanta Group

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



ESL Steel Limited (ESL)

Vedanta group is now looking to set new benchmarks in the steel industry. ESL is having state of art Integrated primary steel plant having main products such as Wire Rods, TMT Rebars, Ductile Iron Pipes, Pig Iron, and Billets

Currently commissioned at a capacity of 2.5 MTPA, the company has a vision of expanding up to 10 MTPA in the coming years

WHY CHOOSE ESL

Fully integrated steel plant with 100% production at a single site which ensures high-quality assurance. The company is having its own iron ore mines and coke oven ensuring good quality raw materials used for its manufacturing operations

Acknowledged by the Ministry of Steel as a primary steel maker, the Company is equipped with cutting-edge modern machinery for all steel-making processes

High diversified range of products suiting as per different international standards

Drive for customer delight and transparency with the e-commerce Vedanta Metal bazaar portal

ESL WIRE ROD MILL

Equipment and features:

1 **Automized 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

V-Wirro comes in Low Carbon, Medium Carbon, High Carbon, Alloy grades like En31 & CO₂ welding grades to fit a wide range of applications in Engineering, Construction, Power & Automobile industry

- 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

ESL WIRE ROD MILL FEATURES

- Annual production capacity 0.6 MTPA
- Coil outer diameter 1250mm
- Coil inner diameter 850mm
- Coil weight - 2 metric tonnes
- Size range 5.5mm to 16.0mm, 0.5mm upgrade
- Mill speed 110 metre per second
- Number of strands: 30



APPLICATIONS OF U-WIRRO

Product Category	Applications
High carbon Wire Rods	Wires for Concrete reinforcement for Railway Sleepers/Electric Poles, LRPC Strands, Wire Ropes, Tyre Bead, Tyre Cord, Spring Applications, Automobile Cables, Suspension Springs, Torsion wires, Wires for Reinforcement for Conductors, Umbrella wires, Cycle Spoke, Crimped Wire mesh, Needle wire, Conveyor wire, Earth/Stay Wires and various other applications
Low Carbon Wire Rods	Cable Armour Wire, Fasteners (Nut/Bolts), Fencing Wire, Screws, Welded Mesh, Steel Fibres for Concrete Reinforcement, Farming Wires, Steel Wool, Fine quality wires, Welding electrodes, Stapler pins, Binding wire, Nails and various other applications
Medium Carbon Wire Rods	High Tensile Fasteners for Automobile & Construction industry, Axles, Motor Shafts, Wire for Elevators/Cableways/Cranes
Cold Heading Quality Steel Wires	Automobile & Machine Parts like Screws, High Tensile Fasteners, bush, spline, socket, connecting rod, shaft, gear, Nails, Rivets and various other applications
Alloy Grade wires	En31 Grade - Ball bearing applications CO ₂ Grade - Mig Welding Wires for welding applications



PRODUCT SPECIFICATIONS

Low Carbon Grades (5.5 mm to 16 mm Dia)						
Grade	%C	%Mn	%P (Max)	%S (Max)	% Al	UTS (MPa) Max
IS 7887 Gr 2	0.08 max	0.25 - 0.40	0.030	0.030	0.02 Min	390
IS 7887 Gr 3	0.10 max	0.30 - 0.50	0.030	0.030	0.02 Min	410
IS 7887 Gr 4	0.08 - 0.13	0.30 - 0.60	0.030	0.030	0.02 Min	430
IS 7887 Gr 4M	0.08 - 0.13	0.60 - 0.90	0.030	0.030	0.02 Min	450
IS 7887 Gr 5	0.10 - 0.15	0.30 - 0.60	0.030	0.030	0.02 Min	450
IS 7887 Gr 6	0.13 - 0.18	0.30 - 0.60	0.030	0.030	0.02 Min	470
IS 7887 Gr 7M	0.15 - 0.20	0.60 - 0.90	0.030	0.030	0.02 Min	510
IS7887 Gr8	0.18 - 0.23	0.30 - 0.60	0.030	0.030	0.02 Min	570
IS 7887 Gr 8M	0.18 - 0.23	0.70 - 0.90	0.030	0.030	0.02 Min	600
IS 7887 Gr 10	0.22 - 0.28	0.30 - 0.60	0.030	0.030	0.02 Min	600
SAE 1006	0.08 max	0.25 - 0.40	0.030	0.030	0.02 Min	390
SAE 1008	0.10 max	0.30 - 0.50	0.030	0.030	0.02 Min	410
SAE 1010	0.08 - 0.13	0.30 - 0.60	0.030	0.030	0.02 Min	430
SAE 1012	0.10 - 0.15	0.30 - 0.60	0.030	0.030	0.02 Min	450
SAE 1015	0.13 - 0.18	0.30 - 0.60	0.030	0.030	0.02 Min	470
SAE 1018	0.15 - 0.20	0.60 - 0.90	0.030	0.030	0.02 Min	510
SAE 1020	0.18 - 0.23	0.30 - 0.60	0.030	0.030	0.02 Min	570
SAE 1022	0.18 - 0.23	0.70 - 0.90	0.030	0.030	0.02 Min	600
SAE 1025	0.22 - 0.28	0.30 - 0.60	0.030	0.030	0.02 Min	600

Note: All the grades are Al killed

Any specific chemistry requirement can be mutually discussed & agreed

Medium Carbon Grades (5.5 mm to 16 mm Dia)							
Grade	%C	%Mn	%Si	P % (Max)	S% (Max)	%Cr	UTS (MPa)
En8D/45C8 -IS7283	0.40 - 0.45	0.70 - 0.90	0.15 - 0.30	0.025	0.025	0.10 - 0.30	610 min
En8A	0.33 - 0.38	0.70 - 0.90	0.15 - 0.30	0.025	0.025	0.10 - 0.30	580 min

Any specific chemistry requirement can be mutually discussed & agreed if Feasible

Ball Bearing Grade (5.5 mm to 16 mm dia)						
Grade	%C	%Mn	%P (Max)	%S (Max)	%Si	%Cr
En31	0.90 - 1.20	0.30 - 0.75	0.025	0.025	0.10 - 0.35	1.10 - 1.60



ENERGY

TG/D
O M
FLOOR

MAIN S

DO NOT EN

WHAT
TEAM
GRTHH

TG/D
O M
FLOOR

VALVES (L) (R) (U) (S)
ALWAYS CLOSE
ALWAYS OPEN
ADJUSTABLE
ANTI CLOCK WISE OPEN
CLOCK WISE CLOSE

VACCUM PUMP
#2

VACCUM PUMP
#1

NO SMOKING

CL

TG-1
O M
POWER
PLANT

55
LEAK
REPAIRAGE

PRODUCT SPECIFICATIONS

High Carbon Grades (5.5 mm to 16 mm Dia)						
Grade	%C	%Mn	%Si	%P (Max)	%S (Max)	%Cr (Max)
HC38B / SWRH38B	0.35-0.40	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC42B / SWRH42B	0.40-0.45	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC48B / SWRH48B	0.45-0.50	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC52B / SWRH52B	0.50-0.55	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC58B / SWRH58B	0.55-0.60	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC62B / SWRH62B	0.60-0.65	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC68B / SWRH68B	0.65-0.70	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC72B / SWRH72B	0.70-0.75	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC78B / SWRH78B	0.75-0.80	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC78BCr / SWRH78BCr	0.75-0.80	0.60-0.90	0.15-0.30	0.030	0.025	0.25
HC82B / SWRH82B	0.80-0.85	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC82BXHMn	0.80-0.85	0.70-0.90	0.15-0.30	0.030	0.025	0.10
HC80BCr (PC) / HC80B	0.78-0.83	0.60-0.90	0.15-0.30	0.030	0.025	0.20
HC82BCr (LRPC) / SWRH82BCr	0.80-0.85	0.60-0.90	0.15-0.30	0.030	0.025	0.30
HC88B	0.85-0.90	0.60-0.90	0.15-0.30	0.030	0.025	0.10
HC42A / SWRH42A	0.40-0.45	0.30-0.60	0.15-0.30	0.030	0.025	0.10
HC52A / SWRH52A	0.50-0.55	0.30-0.60	0.15-0.30	0.030	0.025	0.10
HC62A / SWRH62A	0.60-0.65	0.30-0.60	0.15-0.30	0.030	0.025	0.10
HC68A / SWRH68A	0.65-0.70	0.30-0.60	0.15-0.30	0.030	0.025	0.10
HC72A / SWRH72A	0.70-0.75	0.30-0.60	0.15-0.30	0.030	0.025	0.10
HC78A / SWRH78A	0.75-0.80	0.30-0.60	0.15-0.30	0.030	0.025	0.10
HC82A / SWRH82A	0.80-0.85	0.30-0.60	0.15-0.30	0.030	0.025	0.10

Note: All High Carbon grades are Si killed

Any specific Chemical & Mechanical property requirements can be mutually discussed & agreed

Special Electrode Wire Grade (5.5 mm dia)								
Grade	%C	%Mn	%P (Max)	%S (Max)	%Si	N2 PPM	UTS (MPa)	%RA
CO2	0.06-0.10	1.40-1.60	0.030	0.025	0.80 min	70 max	540 max	75 min

CUSTOMER CENTRIC APPROACH

Close coordination with customers and a flexible approach help customers to meet their requirements and work with thinner inventories safeguarding them in a high volatile market

Cross-functional engagement and partnering with customers for new product developments

Modern handling facilities and equipment at the plant to ensure minimal surface damage

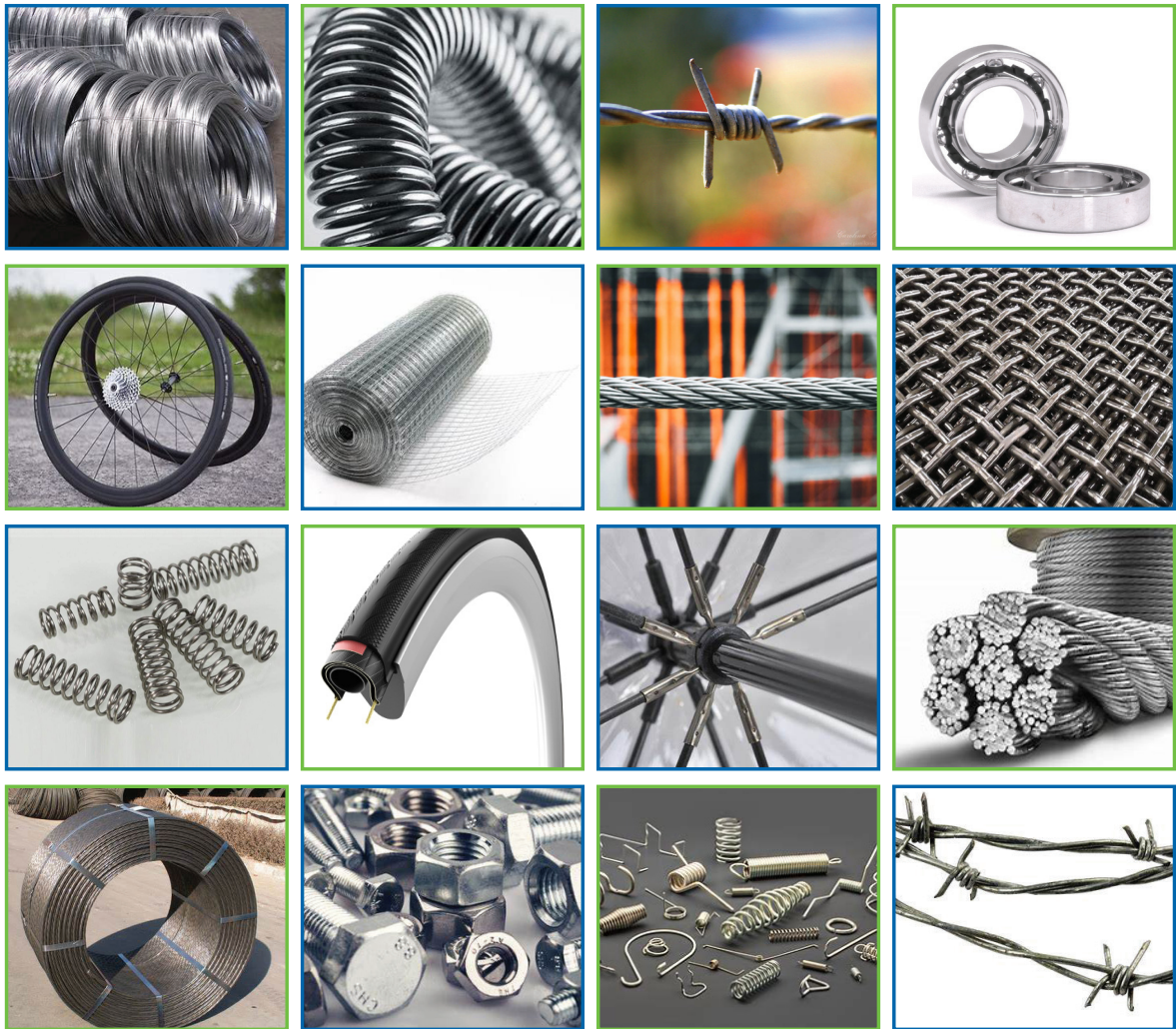
Short lead time

High commitment and trust with the partners of adhering to promises

Transparency, governance

Drive for Automation





Sales and Marketing Office Address:

Bengal Intelligent Park,
Alpha Building,
2nd Floor (South Wing), Block EP & GP,
Plot- A2&M2, Sector V, Bidhannagar,
Kolkata - 700 091

Plant Address:

Village: Siyaljori. P.O-Jogidih, OP-
Bangaria, P.S-Chandankyari,
Dist.- Bokaro, Jharkhand, Pin-828303

Website: www.eslsteel.com

Email: contact.ESL@vedanta.co.in