

## CHEMICAL PROPERTIES

Carbon%	: 0.12 max
Manganese%	: 0.70 max
Sulphur%	: 0.050 max
Phosphorus%	: 0.050 max

## PHYSICAL PROPERTIES

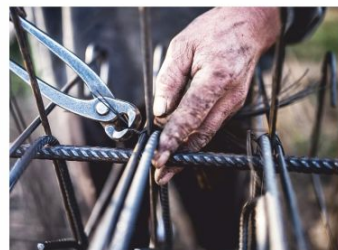
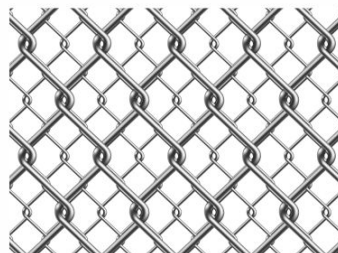
Yield Strength(MPa)	: 270-325
Tensile Strength(MPa)	: 345-460
% Elongation	: 28 % min

## TESTING

Chemical composition	: Spectrometer
Tensile Test	: Universal Tensile Machine
Hardness Test	: Brinell Hardness Machine
Ovality Test	: Vernier Caliper & Micrometer

## APPLICATION OF WIRE RODS

PRODUCT CATEGORY	APPLICATIONS
Low carbon	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 fastners, bush, spline, socket, connecting rod, shaft, gear, quarter. nail, 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.



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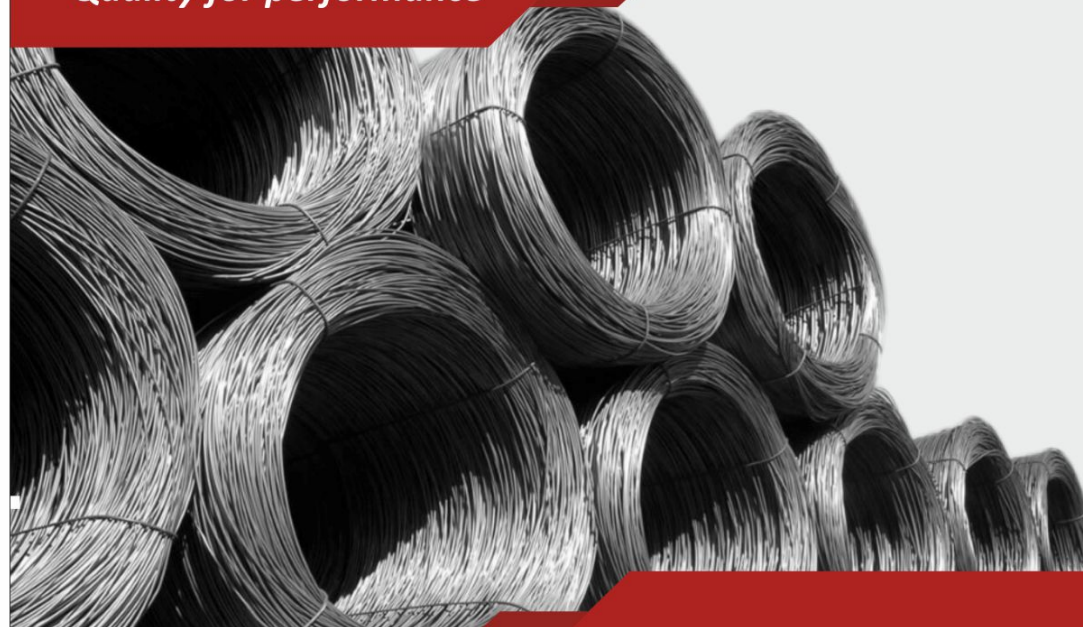
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IS 432  
IS 1875



**JYOTI**  
Ek Kadam Aage  
**WIRE ROD**



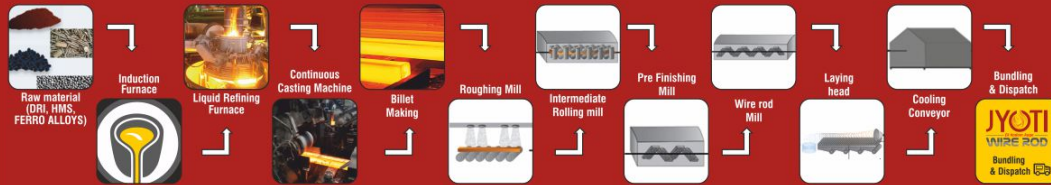
*Quality for performance*



# JYOTI WIRE ROD PLANT PROCESS FLOW



## MANUFACTURING PROCESS OF WIRE ROD



## FEATURES OF JYOTI WIRE ROD PLANT

### SALIENT FEATURES OF WIRE ROD PLANT EQUIPMENTS

- Automated digital type DIFOC & GREEN Induction furnaces followed by LRF, ensures inclusion free material and uniform chemical composition in liquid metal and finally in wire rod.
- Automated primary and secondary cooling zones and automated mould level controller during casting at continuous casting machine ensures uniform temperature of billets which are directly charged for further rolling process for wire rod.
- Horizontal 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.
- Wear-resistant tungsten carbide rings in the rolls of resizing, finishing and pre-finishing blocks ensure high surface finish and close dimensional tolerances.



- Crop shears are provided at various locations in the line to remove front and tail end to ensure that the cold and split ends do not carry over and affect the quality of the wire rod.
- Pre-finishing mill provided accuracy in the stock sizes that enter into Block mill, so that uniformity is maintained to ensure high accuracy for longer period.
- Wire Rod mill products have close dimensional tolerances with superior grain structure at high speed rolling, due to less stress generation and controlled temperature rolling.
- 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.
- On-line monitoring at various points, enable active monitoring and control of the sectional dimensions for a close dimensional tolerance range.



## SALIENT FEATURES OF WIRE ROD PRODUCTS

### SPECIAL FEATURES OF JYOTI 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 draw-ability.

## WIRE ROD PLANT FEATURES

ANNUAL PRODUCTION CAPACITY	100000 MTPA
OUTER DIAMETER	1250 $\pm$ 100mm
INNER DIAMETER	850 $\pm$ 100mm
COIL WEIGHT	800 Kg – 1000 Kg
SIZE RANGE	5.5, 9,12,16 mm
MILL SPEED	95-100 meter per second
NO. OF STRANDS	26

## DIMENSIONAL TOLERANCE

DIMENSIONAL (MM)	TOLERANCE OF DIAMETER (MM)	OVALITY (MM)
Upto & including 15.0	$\pm$ 0.20	$\leq$ 0.25
Above 15.0	$\pm$ 0.30	$\leq$ 0.40

## OUR SERVICES

Be it product manufacturing or service deliverance – both are done under the strict supervision of experienced professional engineers. Quality is at the core of all products and services and usage of global technology further ensures that best in class offerings are given to the valued customers.