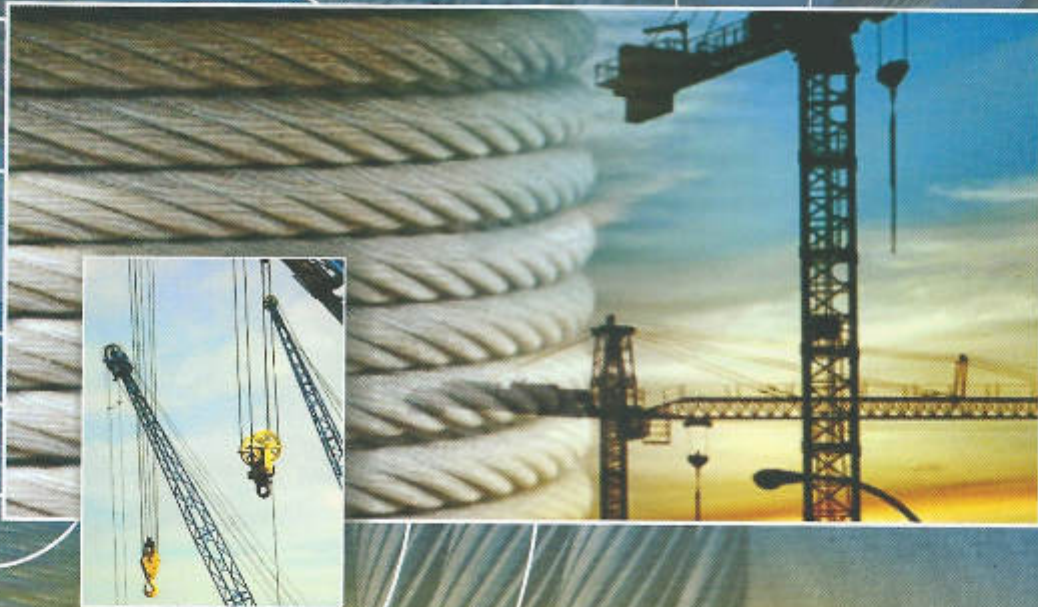


VIKRANT ROPES PRIVATE LIMITED

An ISO 9001 : 2000 Certified Company



• Regd. Office •

"Surana House" 27, Civic Centre, Bhilai (C.G.)

Fax : +91-788-2261592, Tel. : +91-788-2292326, 2261699, E-mail : jksurana@rediffmail.com

• Works •

VIKRANT ROPES PVT. LTD.

6, G.E. Road, Vill-Tedesara, Rajnandgaon, Chhattisgarh, Tel. : 9203902305, Mob. 98932-92727

e-mail : parthosaha2007@yahoo.com

www.vikrantropes.com



INTRODUCTION

VIKRANT ROPES came in to production in 1989 as an ancillary Unit to Bhilai Steel Plant (SAIL). The unit has since been making a steady progress in the field of manufacturing Steel Wire Ropes for various applications in Mining, Shipping, Oil, Well drilling and General Engineering, (Such as Heavy Duty Cranes, Excavators, Winches, Pilling etc.).

With the latest Plant & Machinery, manned by highly qualified and experienced engineers the company has been able to set highest standards of quality in the field of manufacturing Steel Wire Ropes, A well equipped mechanical test house and laboratory ensures rigid quality tests at each stage of manufacturing that every rope which goes out of the factory confirms to prescribed engineering standards.



QUALITY POLICY

- Quality Assurance
- Customer Satisfaction
- Delivery in Time



OBJECTIVE

- To produce quality products as per requirements.
- Upgrading Technology.
- Growth of Company as well as society by establishing fair relation with our employees and welfare of their family.



OUR PRODUCTS

We manufacture Steel Wire Ropes conforming to following specification:

- Bureau of Indian Standards.
- British Standard.
- American Petroleum Institute (A.P.I. 9A)
- German Standard.
- Any other National/International standard .





PRODUCT RANGE

Steel wire ropes of diameter ranging from 6.0 mm to 40 mm in fibre main core (FMC) & Independent wire rope core (IWRC), Un-galvanized and galvanized coatings as per IS 2266 or any other specification. We also produce non rotating ropes such as 18 x 7, 34 x 7.



LICENCE HOLDER

1. Granted approval from Bureau of Indian Standards to mark our product with ISI Mark.
2. Authorised to supply wire ropes under certification from competent authority declared by Directorate General Factory Advice Service and Labour Institutes for Dock workers (Safety, Health and Welfare) Regulation 1990 Mumbai .
3. Certificate of competency issued by Directorate of Industrial Health & Safety, Raipur (C.G.).

LICENCE

1. NSIC (The National Small Industries Corp. Ltd., Raipur)
Reg. No. NSIC/BPL/GP/RS/V-72/C.G.
2. SSI (Reg. No. 104303747 Dt. 10-8-1990)

RELEVANT INDIAN STANDARDS

Wire Rope for winding purpose in mines	1855/77
Wire Rope for haulage purpose in mines	1856/77
Galvanized stay strand	2141/79
Wire Rope for crane, excavator & general engineering purpose	2266/02
Glossary of terms relating to Wire Rope	2263/65
Wire Rope for Lift & Elevator	2365/77
Galvanized Shipping Rope	2581/77
Wire Rope for Sling & Sling leg	2762/82
Small Wire Rope	3459/77
Guide & Rubbing Rope	3623/78
Locked Coil Winding Rope	3937/74
Code of Practice for selection, installation & maintenance of Steel Wire Ropes	3973/67
Wire Ropes used in oil wells & oil well drilling	4521/77
Method of splicing of Wire Rope (Hand Spliced)	5245 (P-1)/71
Method of splicing of Wire Rope (Mech. Spliced)	5245 (P-2)/71
Wire Rope and Strands for suspension bridges	6494/79



VIKRANT ROPES PVT. LTD.

TYPES OF LAYS

Yellow Colour Polyester Film
inside for identification
VIKRANT ROPES PVT. LTD.



Right Hand
Ordinary Lay



Right Hand
Lang's Lay



Left Hand
Ordinary Lay



Left Hand
Lang's Lay

FACTORS FOR MINIMUM BREAKING LOAD

$$\text{Minimum Breaking Load : } F_o = \frac{K^1 d^2 R_o}{1000}$$

F_o is the minimum breaking load in kilo newton.

d is the nominal diameter of rope in millimeters.

R_o is the tensile grade of wire in newton per square Millimeter

k^1 is the empirical factor for the minimum breaking load for a given rope Construction.

ROPE CONSTRUCTION	FMC	IWRC
6 x 7	0.3322	0.3588
6 x 19	0.3073	0.3319
6 x 37	0.2948	0.3186
6 x 19 Seale	0.3309	0.3647
6 x 37 Filler	0.3377	0.3647
6 x 26 W.S.	0.3299	0.3563
6 x 31 W.S.	0.3299	0.3563
6 x 36 W.S.	0.3299	0.3563
6 x 41 W.S.	0.3299	0.3563
6 x 12	0.2086	
6 x 24	0.2802	
8 x 19 Seale	0.2870	0.3386
8 x 19 Filler	0.2936	0.3464
17 x 7 & 18 x 7	0.3186	0.3281
34 x 7 & 36 x 7	0.3122	0.3184

FACTORS TO BE CONSIDERED BEFORE SELECTING CORRECT WIRE ROPE FOR YOUR EQUIPMENT

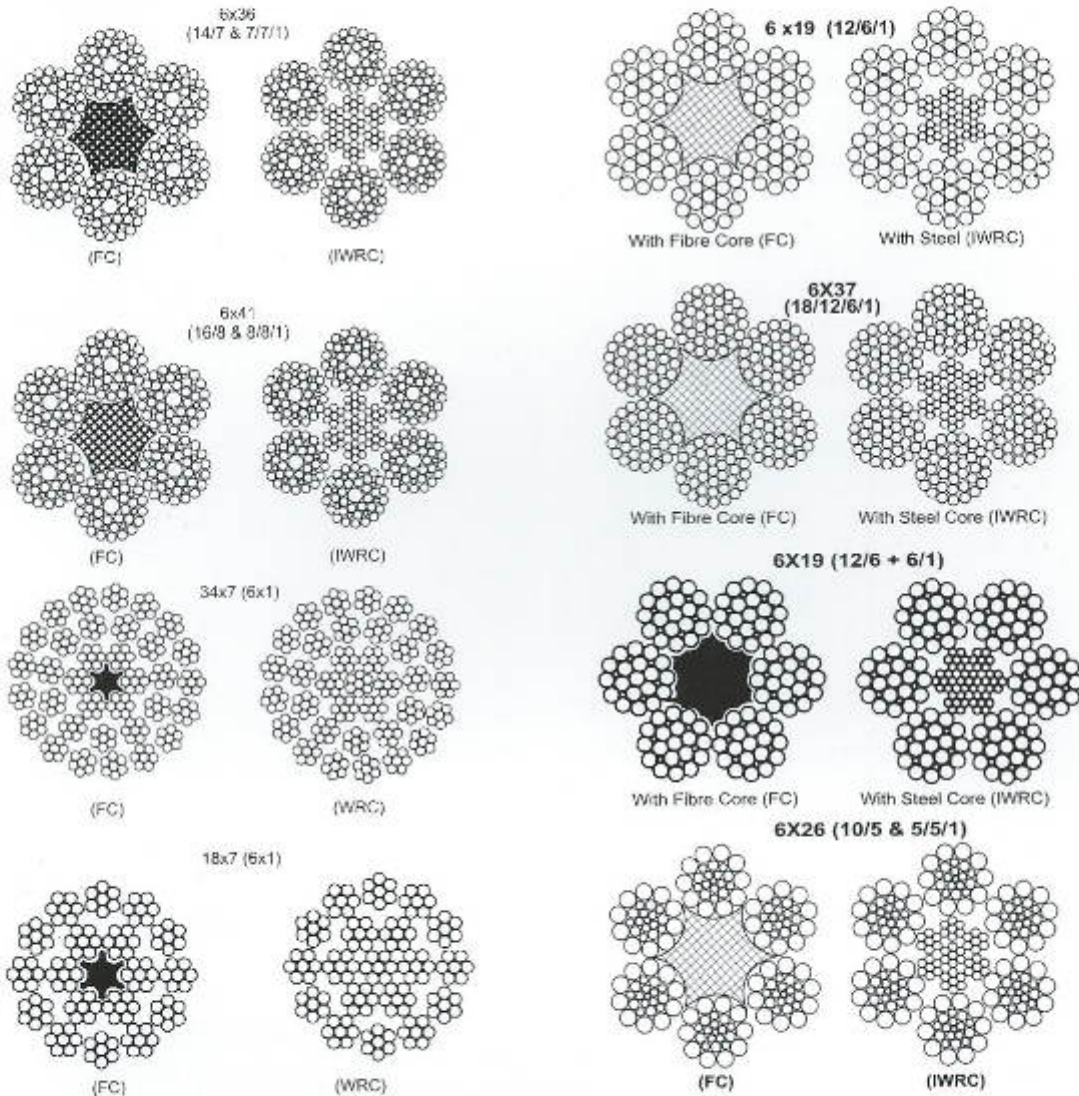
- Load to be applied including bending stress, stresses during starting and stopping. Stresses due to change in the speed and effective stresses
- Crushing and abrasive conditions.
- Pulley, Sheaves and Drum diameter.
- Flexibility of the rope.
- Construction of rope
- Working conditions.
- Factor of Safety.

An ISO 9001 : 2000 Certified Company





WIRE ROPE CROSS SECTION



HANDLING

Improper handling or unloading of rope from reels and coils often result in the "springing" of strands and kinking of the rope both of which are very difficult to be corrected. It reduces effective rope life considerably



SEIZING BEFORE CUTTING

Before cutting a wire rope, it should be securely seized on each side of point of cut with soft wire. This is very important, as it prevents the rope untwisting and ensures equal tension in the strand when the load is applied.

If the rope is not properly seized, one or more strands may slip and become loosened causing distortion of the lay and when put on work these strands may get bird caged or displaced and get damaged at sheave block or on the drum

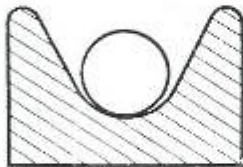


DRUMS AND SHEAVES :

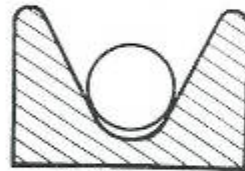
Wire rope life is effected greatly by (I) Size of drums and sheaves over which the rope operates. (ii) Arrangement of drum and sheaves (iii) Size of groove on the drum.

SHEAVE GROOVING

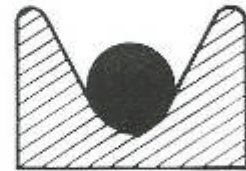
The size of grooves on sheaves should be such as to provide proper support to the rope. It should neither be too wide nor too tight as shown in the figures below



(a) Wrong
Sheave Groove too wide



(b) Wrong
Sheave Groove too narrow



(c) Right
Sheave Groove of correct size

SHEAVE DIAMETER FOR STEEL WIRE ROPE

Type of wire Rope	6 x 7		6 x 19		6 x 37	8 x 19
Recommended Min Sheave Dia	42nd	30d	60d	20d	18d	21d
Preferred Sheave Dia	72d	45d	100d	30d	27d	31d
Uses	Mines Haulage Tramways	Cargo Crane Mine Hoist	Cargo Crane Mine Hoist		Derriks, Dredges Elevator Well Drilling	


FIELD CARE

- Steel Wire Ropes should be stored under covered shed in dry condition free from all possible attack by corrosive agent such as mill dust, acids, alkalies, chemical and others fumes.
- If Ropes are stored for a long period of time in warm or hot conditions are likely to cause rope lubricant to drain on one side of the reel. The reel should be turned over periodically to maintain uniform lubrication inside the rope.
- Rope Should be relubricated if necessary.
- Bars for moving the rope should be used against the reel flange and not against the rope.
- The reel should not be dropped from a truck or platform. This may cause damage to rope as well as break the reel.
- Rolling the reel in mud, dust should be avoided
- Whenever possible a new Wire Rope installed should be run under light load for some time so as to get it adjusted with working conditions.
- The recommendations for handling as given should be observed at all times during the life of the rope.
- When a wire rope is operated close to its minimum factor of safety, Care should be taken that the rope and related equipments are in good condition.
Care is to be taken to minimize shock, impact, sudden jerk and acceleration or deceleration of loads.
- Wire rope life varies with the factor of safety therefore longer rope life can generally be expected when relatively high factor of safety is maintained.
- Rope should be kept tightly and evenly wound on the drums.
- In order to insure a minimum turning effort all sheaves should be kept properly lubricated.
- Check the groove often for wear and sheave for alignment and rectify the defect
- The placement of drums & sheaves should be so planned as to avoid unnecessary bending of Rope which causes bending fatigue and resultant poor rope life



SPECIAL ROPE

Some of our special product which are more efficient with high breaking strength flexibility and rotation resistance are exhibited below. However these are not covered under BIS.

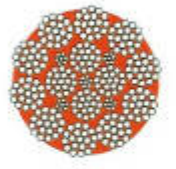


ANILIFT

- MADE OUT OF 17 STRAND. LESS FLEXIBLE BUT HIGH STRUCTURAL COMPATIBILITY
- NON ROTATING TYPE
- HIGH BREAKING LOAD • SUITABLE FOR

BREAKING TABLE & CROSS SECTION AREA

SIZE	AREA	BREAKING STRENGTH	TENSILE
12MM	62.04 sqmm	9.79 MT	1770N/mm ²
		8.07 MT	1570N/mm ²
14MM	85.59 sqmm	12.52 MT	1770N/mm ²
		11.13 MT	1570N/mm ²
15MM	97.03 sqmm	18.47 MT	1770N/mm ²
		14.12 MT	1570N/mm ²
16MM	111.00 sqmm	16.29 MT	1770N/mm ²
		14.48 MT	1570N/mm ²
18MM	139.9 sqmm	20.48 MT	1770N/mm ²
		18.20 MT	1570N/mm ²
19MM	155.7 sqmm	22.77 MT	1770N/mm ²
		20.25 MT	1570N/mm ²
20MM	173.0 sqmm	25.31 MT	1770N/mm ²
		22.50 MT	1570N/mm ²
22MM	209.0 sqmm	30.60 MT	1770N/mm ²
		27.20 MT	1570N/mm ²

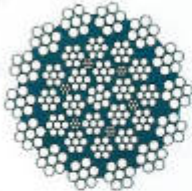


MANLIFT

- HIGH FLEXIBILITY
- FULLY LUBRICATED
- 10 STRANDED CONVENTIONAL STRAND
- HIGH STRUCTURAL STABILITY

BREAKING TABLE & CROSS SECTION AREA

SIZE	AREA	BREAKING STRENGTH	TENSILE
18MM	162 sqmm	23.81 MT	1770N/mm ²
		21.19 MT	1570N/mm ²
19MM	181 sqmm	26.61 MT	1770N/mm ²
		23.66 MT	1570N/mm ²
20MM	201 sqmm	29.54 MT	1770N/mm ²
		26.52 MT	1570N/mm ²
22MM	249 sqmm	36.45 MT	1770N/mm ²
		32.40 MT	1570N/mm ²

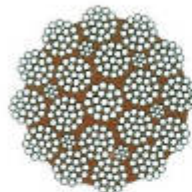


MAHALIFT

- SUITABLE FOR HOISTWITH STEEL CORE
- NON ROTATING TYPE
- FULLY LUBRICATED
- AVOIDING INTERNAL ROPE DESTRUCTION
- EXCELLENT LIFT

BREAKING TABLE & CROSS SECTION AREA

SIZE	AREA	BREAKING STRENGTH	TENSILE
18 MM	143 sqmm	21.05 MT	1770N/mm ²
		18.71 MT	1570N/mm ²
19 MM	163 sqmm	23.93 MT	1770N/mm ²
		21.27 MT	1570N/mm ²
20 MM	183 sqmm	26.89 MT	1770N/mm ²
		23.91 MT	1570N/mm ²
22 MM	207 sqmm	30.30 MT	1770N/mm ²
		26.93 MT	1570N/mm ²



ABILIFT

- HIGH EFFICIENCY AND EXTRA FLEXIBLE
- NON ROTATING BY DESIGN, ADEQUATELY BALANCED ROPE
- MADE OF CONVENTIONAL STRAND WITH GREAT RESISTANCE TO CRUSHING

BREAKING TABLE & CROSS SECTION AREA

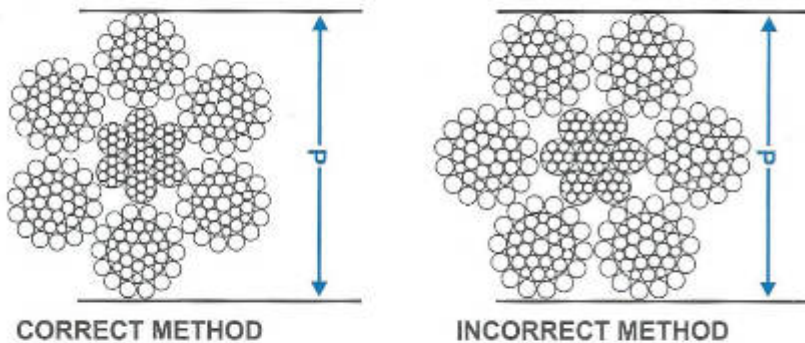
SIZE	AREA	BREAKING STRENGTH	TENSILE
18 MM	171 sqmm	25.16 MT	1770N/mm ²
		22.36 MT	1570N/mm ²
19 MM	163 sqmm	28.42 MT	1770N/mm ²
		25.26 MT	1570N/mm ²
20 MM	183 sqmm	31.83 MT	1770N/mm ²
		28.29 MT	1570N/mm ²
22 MM	207 sqmm	36.87 MT	1770N/mm ²
		32.79 MT	1570N/mm ²



FACTOR OF SAFETY FOR STEEL WIRE ROPES

APPLICATION OF WIRE ROPE	FACTOR OF SAFETY
Track Cable	4.2
Guys	3.5
Miscellaneous Hoist	5
Derricks	6
Haulage Rope	6
Small Electric & Air Hoist	7
Over Head & Gantry Crane	6
Jip & Pillar Crane	6
Hot Laddle Crane	8
Slings	8

HOW TO MEASURE DIAMETER OF STEEL WIRE ROPE



HOW TO ORDER A WIRE ROPE

DETAILS OF SPECIFICATIONS EXAMPLE

Brand name	: VIKRANT
Finish/Coating	: Galvanised or Ungalvanised
Construction	: 6 x 19
Tensile	: 1570 N/mm ²
Lay	: RHO or RHL
Core	: FMC or WSC or IWRC
Size	: 25 mm
Quantity	: 4 x 1000 mtrs.
Packing	: on Reel (or in coils)
Details of Fittings if any	: one end fitted with open type thimble
Conforming	: as per IS : 2266/2002
End Use	: For Cranes.

A WORD TO WIRE ROPE USERS

Wire Ropes are manufactured in various types and constructions with different Lay, Core, Breaking strength etc, depending on the purpose for which they are required and the working conditions under which they are used. As a matter of fact, each application of wire rope presumes certain Design factors to get the best life and performance there from. It is therefore, necessary that adequate care be taken while selecting the rope for particular job so as to ensure long and trouble free service.

The Manufacturer can ensure that the rope is produced to the prescribed standards, customer has to see that only correct rope is used for a particular job.

All care and caution, supervision and inspection, exercised by the manufacturer will be rendered useless if rope is put to use for which is not designed.