



Elephant Brand Wire Ropes

Elevator Wire Ropes Catalog

Alps Wire Rope Corporation

“ T H E P I N N A C L E O F Q U A L I T Y ”



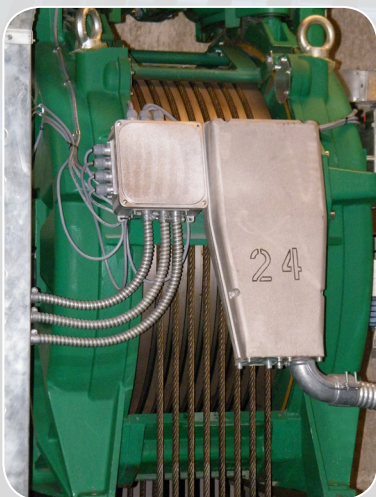
Alps Wire Rope Corporation is proud to distribute KISWIRE's Elephant Brand Elevator Rope throughout North America. The unique partnership between Alps Wire Rope and KISWIRE provides the entire industry with high quality products, superior service, and strategically located distribution points.

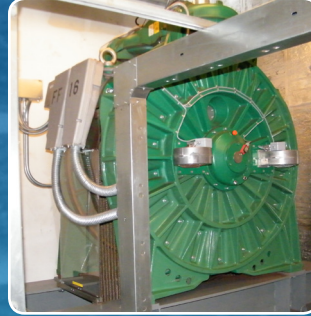
KISWIRE's commitment to quality begins with the visionary leadership of its Chairman and Executive Management Team; and is epitomized by their state of the art Research and Development Center located in Pohang City, Korea. All KISWIRE factories and facilities are ISO certified, and demonstrate a commitment to the highest level of quality and service.

Alps Wire Rope Corporation's Sales, Customer Service, and Distribution teams are trained and committed to meeting the unique demands of the Elevator Industry. Our eleven distribution points are located throughout the USA, and offer our customers the best possible delivery times with the most economical freight costs.

We feel our two companies; Alps and KISWIRE, working together in cooperation, bring the industry the best possible products at a fair cost, which is the very definition of value.

We appreciate your consideration, and hope you will enjoy the security of using the best products available.





ELEPHANT BRAND - ELEVATOR ROPE

Diameter of Rope	Breaking Strength Lbs. Sisal/PC			Approx. Weight (lb./ft.) 6x19 Sisal/PC	Approx. Weight (lb./ft.) 8x19 Sisal/PC	Breaking Strength Lbs. 8x19 IWRC		Approx Weight (lb./ft.) 8x19 IWRC
	6x19 & 8x19 Traction & Galv. Traction	6x19 EHS	8x19 EHS	Traction, Galv. Traction & EHS		Traction IWRC	EHS IWRC	Traction IWRC & EHS IWRC
1/4	3,600	5,200	4,500	0.10	0.09	5,600	---	0.11
5/16	5,600	8,100	6,900	0.16	0.14	8,100	9,200	0.18
9mm	7,100	10,400	8,700	0.20	0.18	10,500	11,800	0.23
3/8	8,200	11,600	9,900	0.23	0.20	11,700	13,200	0.25
10mm	9,100	12,900	11,000	0.25	0.22	12,900	14,600	0.28
11mm	10,800	15,400	13,300	0.31	0.27	15,700	17,700	0.34
7/16	11,000	15,700	13,500	0.31	0.28	16,000	18,000	0.35
12mm	12,900	18,300	15,800	0.37	0.32	18,700	21,000	0.41
1/2	14,500	20,400	17,500	0.40	0.36	20,900	23,500	0.46
13mm	15,200	21,400	18,300	0.43	0.38	21,800	24,600	0.48
9/16*	18,500	25,700	21,100	0.51	0.46	26,600	30,000	0.58
5/8*	23,000	31,600	27,200	0.63	0.57	33,300	37,500	0.73
16mm*	23,000	31,600	27,200	0.63	0.57	33,300	37,500	0.73
11/16*	27,000	38,200	32,800	0.76	0.69	39,800	44,900	0.87
3/4*	32,000	45,200	38,900	0.90	0.82	46,800	52,700	1.02

Diameter of Rope	Traction Steel 8x25 Sisal Core (Compensating Rope)		Iron Grade 8x19 & 8x25 Sisal Core	
	Weight Per Ft. Lbs.	Breaking Strength Lbs.	Weight Per Ft. Lbs.	Break Strength Lbs.
3/8	0.20	8,200	0.20	4,200
7/16	0.28	11,000	0.28	5,600
1/2	0.36	14,500	0.36	7,200
9/16	0.46	18,500	0.46	9,200
5/8	0.57	23,000	0.57	11,200
11/16	0.69	27,000	0.69	13,400
3/4	0.82	32,000	0.82	16,000

*Galvanized ropes also available in these diameters

ELEVATOR WIRE ROPES

Number of Strands: (6-strand rope vs. 8-strand rope)

The wires used in 6 strand elevator rope have a larger diameter than those used in 8 strand rope. These larger individual wires provide better resistance to abrasion and require the use of larger sheaves and drums. 6 strand ropes are not suitable for use in high-speed elevators or where reverse bending is required. The smaller diameter wires used in 8 strand rope give it better flexibility. 8 strand rope is more resistant to fatigue from bending, provides a greater area of contact with the sheave and therefore maintains better traction than 6 strand rope.

Rope Lay

Wire ropes have two aspects relating to lay. The first is the direction the strands are laid in the rope. The second describes the relationship of the wire lay of the strand to the finished rope lay. Elevator ropes are made in right regular lay, unless otherwise specified. Regular lay rope is the type of rope wherein the lay of the wires in the strand is in opposite direction to the lay of the strand in the rope. The crowns of the wires appear to be parallel to the axis of the rope. Lang lay is the type of rope in which the lay of the wires in the strand is in the same direction as the lay of the strand in the rope. The crowns of the wires appear to be at an angle to the axis of the rope. Lang lay ropes are used primarily in highly abrasive and/or reverse bending applications.

Grade

Most elevators utilize traction steel grade ropes. Extra high-strength traction steel ropes (EHS) are made with harder wire and provide higher strength for specific applications. Iron grade ropes are manufactured with lower tensile strength wire and are relatively softer and more flexible. Phosphor Bronze rope is spark resistant. Other ropes are available in select sizes and constructions.

Strand Construction

Elevator rope constructions available are: 8x25 Filler, 8x21 Filler, 8x19 Warrington, 8x19 Seale, 6x25 Filler, and 6x19 Warrington. Above constructions are listed roughly in decreasing order of flexibility and increasing order of resistance against abrasion. That is, using similar reasoning described in 'number of strands' section, when given the same diameter, strand construction that accommodates more wires in it will be more flexible due to smaller wire sizes within the strand. On the other hand, strands with bigger outer wires tend to have stronger resistance against abrasion wear, but less surface contact with the driver.

Cores

Standard Fiber Core ropes are made of sisal fibers and provide support for the strands. Cores are impregnated with lubricant that works its way outward to the rope surface during the operation of the elevator. Galvanized elevator ropes contain plastic cores engineered to support the rope and eliminate moisture accumulation. These cores also contain lubricant and do not absorb moisture. Independent Wire Rope Core (IWRC) ropes are also available. IWRC (steel core) ropes have less stretch and create a firmer structure to the rope diameter.

Finish

Elevator wire ropes come with a Bright (self colored) finish and a lubricant designed to enhance the traction process. Galvanized wire ropes are available for special applications requiring additional levels of corrosion protection that can not be fully accomplished through the lubrication of the rope. Galvanized ropes are constructed of "Drawn Galvanized Wires" which allow our Galvanized Ropes to have the same breaking strength as our Bright Wire Ropes.

NOTE: Galvanized ropes contain either IWRC or PC (plastic fiber core), but not Sisal Core.

Safety Factor of Suspension Ropes

The Safety Factor is defined as the ratio of the minimum breaking load of the rope to the working load and it shall NOT be less than the followings.

Rope Speed not exceeding.....	30M/minute.....	8 to 1
Rope Speed not exceeding.....	80M/minute.....	9 to 1
Rope Speed not exceeding.....	120M/minute..	10 to 1
Rope Speed not exceeding.....	210M/minute..	11 to 1
Rope Speed not exceeding.....	420M/minute..	12 to 1

Above ratio is obtained by using the boxed formula.

$$F = \frac{S \times N \times K}{W}$$

F: Safety factor

S: Minimum breaking load of rope

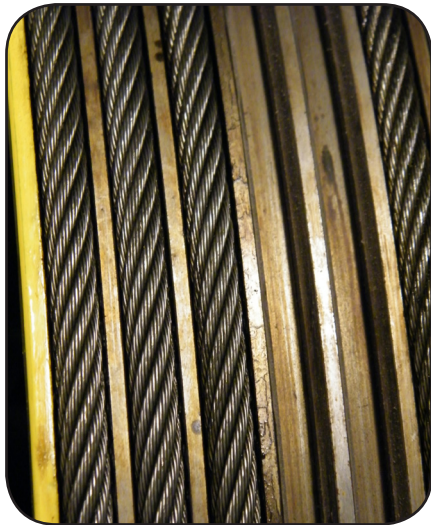
N: Number of separate suspension rope

K: Roping factor - 1 for 1 to 1 roping

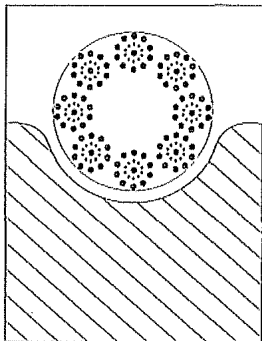
2 for 2 to 1 roping

3 for 3 to 1 roping

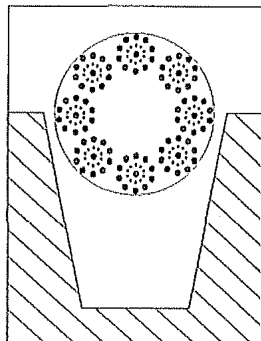
W: Maximum static load imposed on all Car ropes with car and it's rated load.



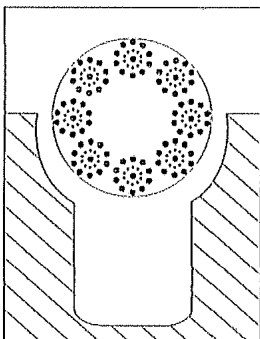
"U" Groove



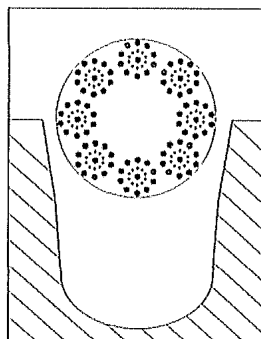
"V" Groove



Undercut Groove



Progressive Groove



Sheaves or Drums for Suspension

The service life of elevator ropes is highly dependent on the design and condition of the sheaves and drums. Apart from the diameter, the shape and condition of the grooves is also a major factor especially where traction sheaves are concerned.

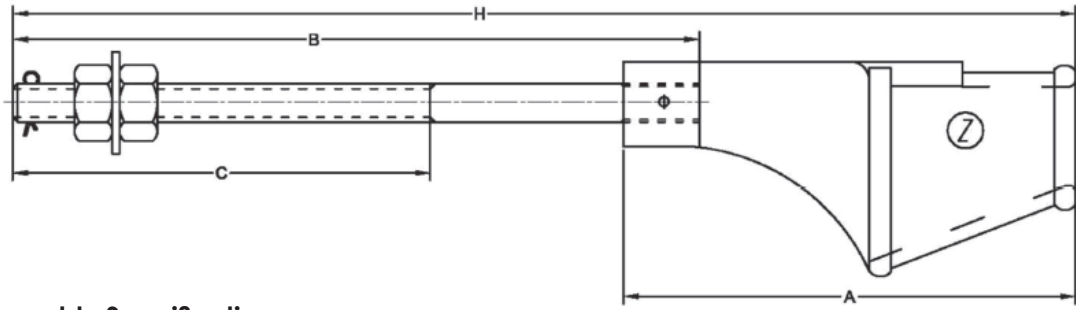
The minimum sheaves or drum diameter is 40 x rope diameter for non driven sheaves the radius of the groove should be 5% larger than the radius of the rope. For traction sheaves with a U-groove with or without undercut, the radius of the groove should be adapted to the rope diameter.

Undercut U-grooves with included angle 90 or 105 have better traction than U-grooves and less friction pressure than V-grooves.

To prevent the rope from slipping in traction sheaves, V-grooves sheaves are sometimes used, which exerts a wedging action on the rope. It will be obvious that in such grooves the rope is subject to serious deformation and deterioration. If this type of sheave is used, the grooves should be carefully inspected for wear and included angle should be between 35 and 40. As soon as the rope runs on the bottom of the groove, the wedging action is lost and the friction between rope and sheave is no longer sufficient to prevent the rope from slipping.

If the rope slips in the sheaves although the groove has the correct dimensions for the rope in question, this is usually due to; overloading of the rope, excessive acceleration and/or deceleration, irregular stresses in the rope due to difference in wear of sheave grooves (excessive lubrication of the rope).

ELEVATOR WIRE ROPE WEDGE SOCKET



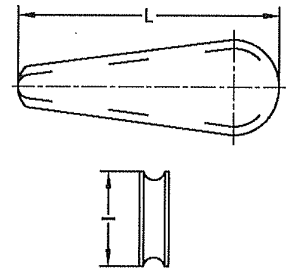
Wedge Socket Assembly Specifications

Part No.	Size	A	B	C	Nut Size	H
ELZ 14	1/4"-5/16" (6-8mm)	5"	12", 18", 24"	9.05"	M12	17", 23", 29"
ELZ 38	3/8" (10mm)	6"	12", 18", 24"	9.05"	M14	17", 23", 29"
ELZ 12	7/16"-1/2" (11-13mm)	7.5"	12", 18", 24", 30" 36", 42"	9.05"	M20	18", 24", 30", 36", 42", 48"
ELZ 58	9/16"-5/8" (14-16mm)	7.5"	12", 18", 24", 30" 36", 42"	9.05"	M20	18", 24", 30", 36", 42", 48"
ELZ 34	11/16"-3/4" (17.5-19mm)	9"	12", 18", 24", 30" 36", 42"	9.05"	M24	19.5", 25.5", 31.5", 37.5", 43.5", 49.5"

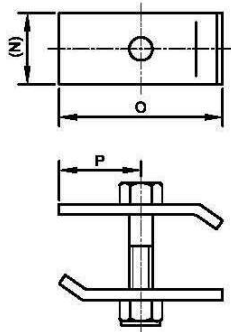
Wedge Insert Specifications

Part No.	Size	L	I	Color
EL ZZWW8	1/4"-5/16" (6-8mm)	3.25"	0.9"	White
EL ZZWW10	3/8" (10mm)	3.75"	1.3"	Red
EL ZZWW13	7/16"-1/2" (11-13mm)	4"	1.6"	Blue
EL ZZWW16	9/16"-5/8" (14-16mm)	4.7"	1.3"	Yellow
EL ZZWW19	11/16"-3/4" (17.5-19mm)	5.5"	1.57"	Green

WEDGE INSERT



RETAINING CLIP

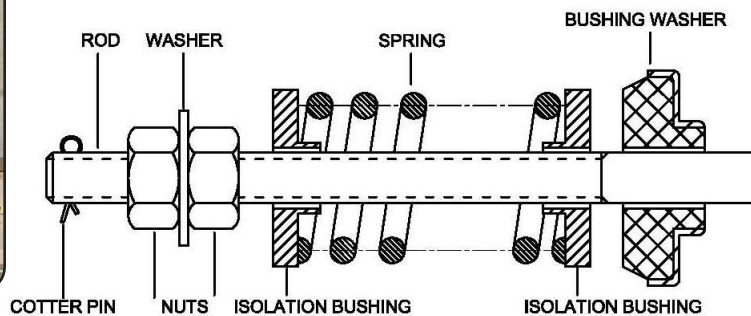


Retaining Clip Specifications

Part No.	Size	N	O	P	Nut Size	Bolt Size
EL ZZWRC810	1/4"-3/8" (6-10mm)	1"	1.58"	0.7"	M6	M6x30mm
EL ZZWRC1316	7/16"-5/8" (11-16mm)	1"	1.84"	0.94"	M6	M6x35mm
EL ZZWRC19	11/16"-3/4" (17.5-19mm)	1"	2.14"	1.06"	M6	M6x40mm

Spring Isolation Bushing Assemblies

Part No.	Size
EL ZZWS10	3/8" (10mm)
EL ZZWS13	7/16"-1/2" (11-13mm)
EL ZZWS16	9/16"-5/8" (14-16mm)
EL ZZWS19	11/16"-3/4" (17.5-19mm)



WARRANTY

Any warranty expressed or implied as to quality, performance, or fitness for use of wire rope products is always premised on the conditions that: (1) The published strengths apply only to new, unused rope, (2) That the mechanical equipment on which such products are used is properly designed and maintained, (3) That such products are properly stored, handled, used and maintained, and properly inspected on a regular basis during the period of use.

Seller shall not be liable under any circumstances for consequential or incidental damages or secondary charges including but not limited to personal injury, labor costs, a loss of profits resulting from use of said products, or from said products being incorporated in or becoming a component of any other products.

Alps Wire Rope Corporation agrees to replace any of its product proved to be defective in material or manufacture.

The user of Alps Wire Rope Corporation products has the responsibility for conformance to jurisdictional codes, rules or suitability of components or design for the application.

Wire rope must be regularly inspected during use. Damage, abuse or improper maintenance can cause rope failure. Wire rope removal criteria are based on the use of steel sheaves. If synthetic sheaves are used, consult the sheave equipment manufacturer.

When rope is cut, fitted with end connection by splicing or other ways, the fabricator has to obey the rules and standards for the fabrication process as well the end product. Any damage resulting from incorrect handling, cutting, splicing, fitting, or reeving, will not be the responsibility of Alps Wire Rope Corporation or the rope manufacturer.



Acknowledgements

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