

# ELEVATOR STEEL WIRE ROPES for North America



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## INSTITUTIONAL

10 LATIN AMERICA'S MOST LEADING EDGE INDUSTRIAL LOGISTICS SYSTEM

### IPH ROPE GRADE | EQUIVALENTS

Rope grade designation	Wire tensile strength grade		Rope grade value [N/mm <sup>2</sup> ]	Rope grade value [psi]
	Outer [N/mm <sup>2</sup> ]	Inner [N/mm <sup>2</sup> ]		
TRACTION	1370	1770	1500	210000
EHS	1570	1770	1670	234000
	1770	1770	1770	248000



## ELEVATORS STEEL WIRE ROPES for North America

The elevator is the most used form of transportation worldwide. As buildings around the world are reaching greater heights, the needs for safety and comfort are becoming increasingly important every day.

IPH manufactures and certifies according to ISO 4344, assuring constructive features suitable for each operation and market. With more than 30 year of experience in producing steel wire ropes for elevators, IPH has the know-how and technology to develop products which meet the highest international standards. Such products are exported to the main markets in Latin America, Europe, U.S.A. and Asia.

With our ability to manufacture the wires and sisal cores used in our elevator ropes, all rope combinations are possible.

For special applications in particular operations, or for ropes not displayed in this brochure, please contact our Technical Sales Department.

### IPH QUALITY

The quality certificate issued by IPH guarantees the traceability and conformity with national and international standards that can be applied to the controls carried out throughout the entire manufacturing process, from the wire production to the final product.

#### MANAGEMENT SYSTEM CERTIFICATIONS:

American Petroleum Institute, API Monogram Spec Q1, Spec 9A.  
TÜV Rheinland, ISO 9001:2008.  
Fundação Vanzolini NBR, ISO 9001:2008.

#### WIRE ROPES SPECIFIC CERTIFICATIONS:

**Marine use:**

Lloyd's Register plant certification.

**General purpose:**

ABNT NBR and ISO 2408 product certification.

**Elevators:**

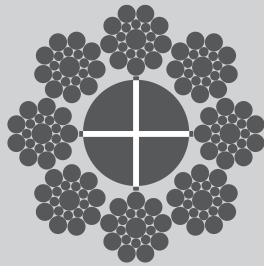
IRAM-INTI and IRAM 840 product certification.

**Offshore containers lifting slings:**

DNV 2.7-1 product certification.

For further information regarding those certificates mentioned above, please visit our web-site.

# TRACTION DRIVE AND COMPENSATING ROPES FOR CONVENTIONAL ELEVATORS



**IPH 819E**

## Advantages and features

- Lubricated high density sisal fiber core with perfect diameter uniformity.
- High resistance to bending fatigue.
- Diameter uniformity assures a smooth run, free from vibration and noise.
- Special lubricant fit to traction sheaves.
- The tensile strength resistance of the "dual" wires, with inner wires of 1770 N/mm<sup>2</sup> rises the overall resistance while the outer wires of 1370 N/mm<sup>2</sup> reduce to a minimum the wear on the sheaves.

For conventional elevators, the traction rope recommended is the 8x19 construction, with sisal fiber core manufactured in our facilities. Its excellent fatigue resistance complies with the highest international standards. This is a key factor regarding its life time and safety.

Diameter tolerance	Constructional stretch	Elastic stretch	Total stretch
[No load]: +2/+5% [At 10% MBL]: 0/+3%	Max. 0,6%	Max. 0,2%	Constructional + Elastic

## Minimum breaking load

Diameter		Weight factor		1370   1770 N/mm <sup>2</sup>		1770 N/mm <sup>2</sup>	
[mm]	[inch]	[kg/m]	[lb/ft]	[kN]	[lb]	[kN]	[lb]
8,00	5/16	0,218	0,146	29,4	6600	33,2	7500
9,50	3/8	0,307	0,206	41,5	9300	46,8	10500
10,00	-	0,340	0,228	46,0	10300	51,9	11700
11,00	7/16	0,411	0,276	55,7	12500	62,8	14100
12,00	-	0,490	0,329	66,2	14900	74,7	16800
12,70	1/2	0,548	0,368	74,2	16700	83,6	18800
13,00	-	0,575	0,386	77,7	17500	87,6	19700
16,00	5/8	0,870	0,585	118	26500	133	29900
17,50	11/16	1,040	0,699	141	31700	159	35700
19,00	3/4	1,230	0,827	166	37300	187	42000

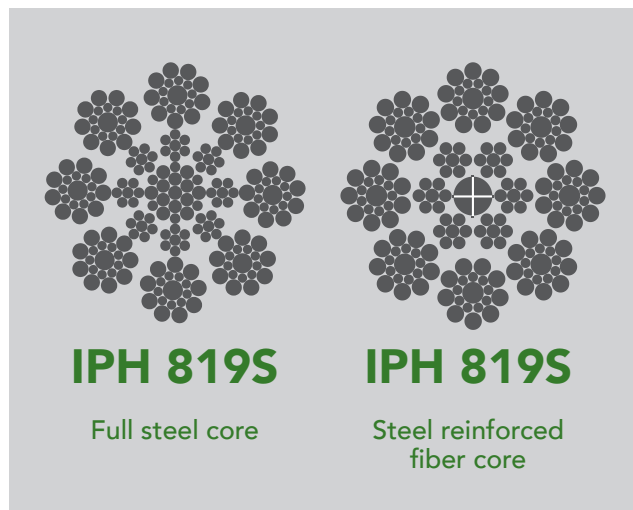
Construction: 8x19 Class + NFC (natural fiber core) Seale or Warrington may vary according to diameter. TS (1370/1770 N/mm<sup>2</sup> - dual tensile) or EHS (1770 N/mm<sup>2</sup> - single tensile).

Coating: bright lubricated (galvanized on demand).

Spec ref.: ISO 4344/ASME A 17.6.

For other rope diameters or grades not specified in this catalog, please contact IPH.

# TRACTION DRIVE AND COMPENSATING ROPES FOR HIGH SPEED ELEVATORS



## Advantages and features

- High flexibility steel core with special configuration.
- High resistance to bending fatigue and abrasion.
- High breaking load.
- Excellent diameter stability, which minimizes vibrations and noise in elevators working in high rise elevators.
- Special lubricant, fit to traction drive sheaves.

Unlike the conventional traction drive ropes, high speed elevators ropes are manufactured with an independent wire rope core (IWRC) which has high flexibility due to its special construction. Also are designed in high tensile strength resistance, from grade 1770 N/mm<sup>2</sup> to 2160 N/mm<sup>2</sup>, including a combination of them called "DUAL".

Core type	Diameter tolerance	Constructional stretch	Elastic stretch	Total stretch
Steel reinforced fiber core	[No load]: 0/+3% At 10% MBL: -1% min.	Max. 0,3%	Max. 0,2%	Constructional + Elastic
Full steel core		Max. 0,12%	Max. 0,18%	

### Minimum breaking load

Diameter		Weight factor		1570   1770 N/mm <sup>2</sup>		1770 N/mm <sup>2</sup>	
[mm]	[inch]	[kg/m]	[lb/ft]	[kN]	[lb]	[kN]	[lb]
6,00	-	0,150	0,101	-	-	26,9	6000
8,00	5/16	0,260	0,175	43,2	9700	45,4	10200
9,50	3/8	0,367	0,247	60,9	13700	63,9	14400
10,00	-	0,407	0,274	67,5	15200	70,9	15900
11,00	7/16	0,492	0,331	81,7	18300	85,8	19300
12,00	-	0,586	0,394	97,2	20400	102	22900
12,70	1/2	0,656	0,441	107	24100	112	25200
13,00	-	0,688	0,462	112	25200	118	26400
16,00	5/8	1,040	0,699	171	38400	180	40400
17,50	11/16	1,244	0,836	205	46000	215	48400
18,00	-	1,320	0,887	214	48100	225	50500
19,00	3/4	1,470	0,988	240	54000	252	56700

Construction: 8x19 Class + IWRC (independent wire rope core) Seale or Warrington may vary according to diameter.

Coating: bright lubricated (galvanized on demand).

Rope grade: 1570/1770 N/mm<sup>2</sup> (dual tensile) or 1770 N/mm<sup>2</sup> (single tensile).

Spec ref.: ISO 4344/ASME A 17.6.

For other rope diameters or grades not specified in this catalog, please contact IPH.



# HIGH PERFORMANCE WIRE ROPES

Wire ropes with compacted strands are specially designed for facilities with extreme operation conditions. Due to its compacted strands, the contact surface on sheaves increases, minimizing vibration, wear and noise while working.

This is the result of the reduced superficial pressure on the sheaves; which also increases the rope's service life and reduces wear on the sheaves.

The increase of the metallic area due to the compacted strands reduces the elongation properties and increases the breaking load of the rope.



## Advantages and features

- Lubricated high density sisal fiber core with perfect diameter uniformity.
- Increase of metallic area due to the compacted strands. Increase of breaking load and lower elongation.
- Higher resistance to bending fatigue which increases its service life.
- Greater abrasion resistance. This minimizes vibrations and noise while operating.

Diameter tolerance	Constructional stretch	Elastic stretch	Total stretch
[No load]: 2/+5% [At 10% MBL]: 0/+3%	Max. 0,6%	Max. 0,2%	Constructional + Elastic

### Minimum breaking load

Diameter		Weight factor		1570   1770 N/mm <sup>2</sup>		1770 N/mm <sup>2</sup>	
[mm]	[inch]	[kg/m]	[lb/ft]	[kN]	[lb]	[kN]	[lb]
12,70	1/2	0,600	0,403	91,4	20500	95,2	21400
13,00	-	0,630	0,423	95,8	21500	99,7	22400
16,00	5/8	0,950	0,638	145	32600	151	33900
17,50	11/16	1,140	0,766	173	38900	180	40500
19,00	3/4	1,340	0,900	204	45900	212	47700

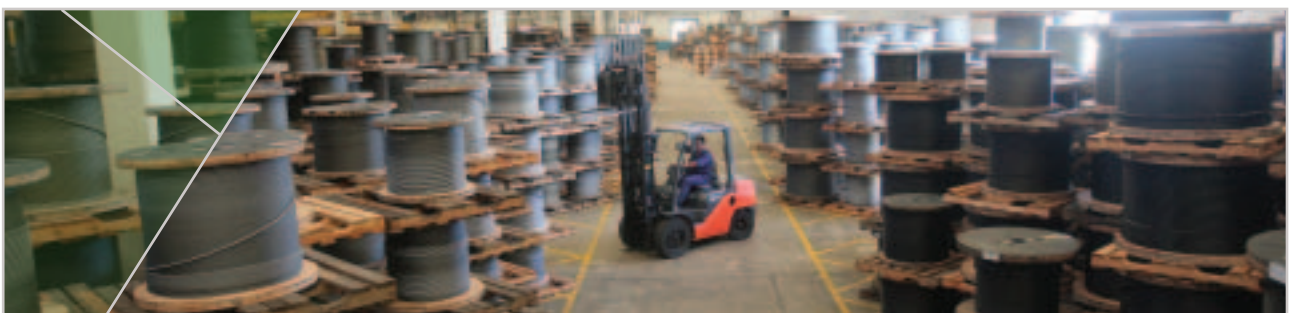
Construction: 8x19 SCO + NFC (compacted strands + natural fiber core)

Rope grade: EHS 1570/1770 N/mm<sup>2</sup> (dual tensile) or 1770 N/mm<sup>2</sup> (single tensile).

Coating: bright lubricated (galvanized on request).

Spec ref.: ISO 4344.

For other rope diameters or grades not specified in the catalog, please contact IPH.



# HIGH PERFORMANCE WIRE ROPES



## Advantages and features

- High flexibility steel core with special configuration.
- Increase of metallic area due to the compacted strands. Increase of breaking load and lower elongation.
- Higher bending fatigue resistance improving service life.
- Greater resistance to abrasion. This minimizes vibrations and noise while operating.



Diameter tolerance	Constructional stretch	Elastic stretch	Total stretch
[No load]: 0/+3% [At 10% MBL]: -1% min.	Max. 0,12%	Max. 0,18%	Constructional + Elastic

### Minimum breaking load

Diameter		Weight factor		1570   1770 N/mm <sup>2</sup>		1770 N/mm <sup>2</sup>	
[mm]	[inch]	[kg/m]	[lb/ft]	[kN]	[lb]	[kN]	[lb]
12,70	1/2	0,720	0,484	113	25400	117	26300
13,00	-	0,750	0,504	118	26500	123	27600
16,00	5/8	1,140	0,766	179	40200	186	41900
17,50	11/16	1,360	0,914	214	48100	223	50100
19,00	3/4	1,600	1,075	252	56700	262	59000

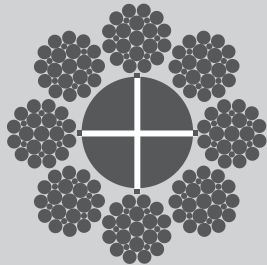
Construction: 8x19 SCO (compacted strands + IWRC). EHS 1570/1770 N/mm<sup>2</sup> (dual tensile) and 1770 N/mm<sup>2</sup> (single tensile).

Coating: bright lubricated (galvanized on demand).

Spec ref.: ISO 4344.

For other rope diameters or grades not specified in this catalog, please contact IPH.

# OVERSPEED CONTROLLERS GOVERNOR ROPES



**IPH 825E**

## Advantages and features

- Higher flexibility due to its construction with greater amount of wires.
- Lubricated high density sisal fiber core with perfect diameter uniformity.
- High resistance to bending fatigue due to its flexible design.
- Uniformity in diameter, which assures a smooth travel, free from vibrations and noises.

Diameter tolerance	Constructional stretch	Elastic stretch	Total stretch
[No load]: +2/+5% [At 10% MBL]: 0/+3%	Max. 0,6%	Max. 0,2%	Constructional + Elastic

### Minimum breaking load

Diameter		Weight factor		1370   1770 N/mm <sup>2</sup>		1770 N/mm <sup>2</sup>	
[mm]	[inch]	[kg/m]	[lb/ft]	[kN]	[lb]	[kN]	[lb]
6,00	-	0,123	0,083	15,8	3600	18,7	4200
7,00	-	0,167	0,112	21,5	4800	25,4	5700
9,50	3/8	0,307	0,206	41,5	9300	46,8	10500
12,70	1/2	0,548	0,368	74,2	16700	83,6	18800
13,00	-	0,575	0,386	77,7	17500	87,6	19700
16,00	5/8	0,870	0,585	118	26500	133	29900
17,50	11/16	1,040	0,699	141	31700	141	31700
19,00	3/4	1,230	0,827	166	37300	166	37300

Construction: 8x25 Filler + NFC (natural fiber core) TS (1370/1770 N/mm<sup>2</sup> - dual tensile) EHS (1770 N/mm<sup>2</sup> - single tensile)

Coating: bright lubricated (galvanized on demand).

Spec ref.: ISO 4344 and ASME A 17.6.

For other rope diameters or grades not specified in this catalog, please contact IPH.





# IPH VALUE

## 1. Detailed and strict process control that includes:

- Metallographic properties (grain size, metallographic structure, inclusions, segregation).
- Mechanical properties (tensile strength, hardness, ductility, bending fatigue, stretch, torsion).
- Chemical properties (chemical composition, coating control, lubricant content).
- Dimensional properties (diameter, ovalization, density, length, mass, helix preforming).

On:

- Raw material
- Patented wire
- Drawn wire
- Strand
- Sisal core
- Rope

## 2. Traceability and certification.

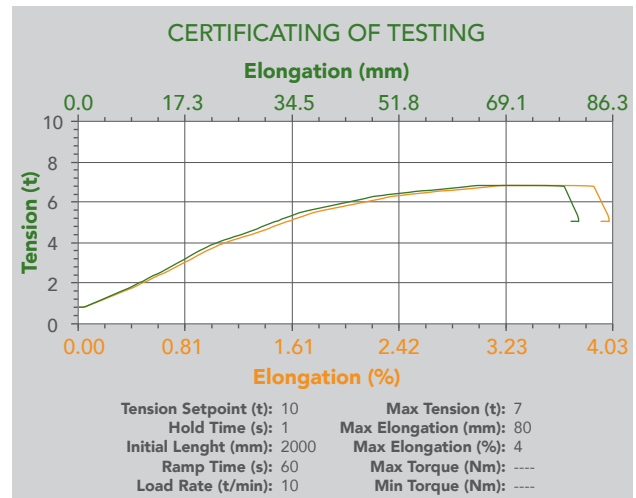
## 3. Customized engineering design.

## 4. Skill staff.

## 5. Customer orientation.

## TENSILE STRENGTH / ELONGATION TESTS

In tensile strength test benches, breaking load, diameter reduction under load and elongation is monitored.



## DIMENSIONAL

Dimensional controls are carried out on the finished products which assure diameter regularity.



## FATIGUE TESTS

Fatigue tests simulate real working conditions, which allow monitoring the quality of our ropes at all times.



# Latin America's most leading edge industrial logistics system

Founded in 1949 in Buenos Aires, Argentina, IPH has become one of the major players in the manufacturing of wire ropes in Latin America, placing itself in a position of leadership through the specialization in achieving solutions for the highest demands in the market.

Since its beginnings, IPH developed a business model based in innovation and high tech investment. Its high quality and customer service standards allowed the company to place itself among the most competitive markets in the five continents.

Located in the city of San Miguel, Buenos Aires, its 45.000 covered square meters with the capacity to produce up to 1500 Tons per month, combines cutting edge technology, highly capable manpower and a Quality System certified by the leading international standards.

The planning of the vertically integrated productive process involves every component of the steel wire rope, from the manufacturing of its own wires and steel or fiber cores, until the wooden or steel reels, and packaging, according to customers specifications. This integration model is the key to the optimization of the designs, productive versatility and sustainability and quality assurance of its final products.

In its two state-of-the-art sales and service centers, located in Buenos Aires and San Pablo, IPH keeps the widest stock of finished products; along with facilities to manufacture slings for various purposes, cut to length, final conditioning of products, certifications and lab testing; offering the most comprehensive response in solutions for lifting and hosting.

The factory, combined with the two sales and service centers, gives to IPH a highly efficient operation, shaping the most modern industrial and logistic complex in Latin America.





San Miguel Plant  
Buenos Aires, Argentina



Service and Sales Center  
Itapevi, Brazil



Service and Sales Center  
Bella Vista, Argentina



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## **IPH. EVOLUTION AS AN ATTITUDE**

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