USHA MARTIN

HIGH PERFORMANCE
ELEVATOR ROPE

OUR WORLD

Usha Martin is one of the largest manufacturers of wire ropes in the world. Our journey of more than six decades has been focused on manufacturing excellence, product innovation, technology improvements and customer satisfaction, which has resulted in establishing our wire ropes as one of the most preferred and trusted brands in the world.

Steel wire rope is one of the most crucial components of elevator ensuring smooth & safe movement of passengers in high-rise buildings. Usha Martin offers a complete range of high-quality, prestretched, low elongation wire ropes that ensure optimum service life & highest safety standards for elevators. Our elevator ropes are designed with close dimensional tolerance to help facilitate the jerk-free movement of elevators. In addition, regular testing for fatigue endurance, elongation characteristics, and diameter stability are carried out in a dedicated fatigue test facility to deliver consistent rope performance.

Backed by state-of-the-art technology – including automatic pickling & coating plants, advanced patenting furnaces, and high-speed wire drawing machines – our manufacturing capabilities are among the most advanced. With stringent quality control measures at every stage, Usha Martin ensures that our wire ropes consistently exceed industry standards and deliver top-tier performance.

The renowned elevator companies, extensively uses our high-performance ropes. Our desire to excel is exhibited through our group dynamics by having manufacturing facilities in India, Thailand, Dubai & the United Kingdom, distribution centers spread across continents, a Global Development Centre in Italy and service centres in India, the Netherlands, Scotland, Singapore, Dubai, and Saudi Arabia. Supported by a robust global network, we are dedicated to providing seamless service and reliable solutions to our valued clients worldwide

GLOBAL FOOTPRINT

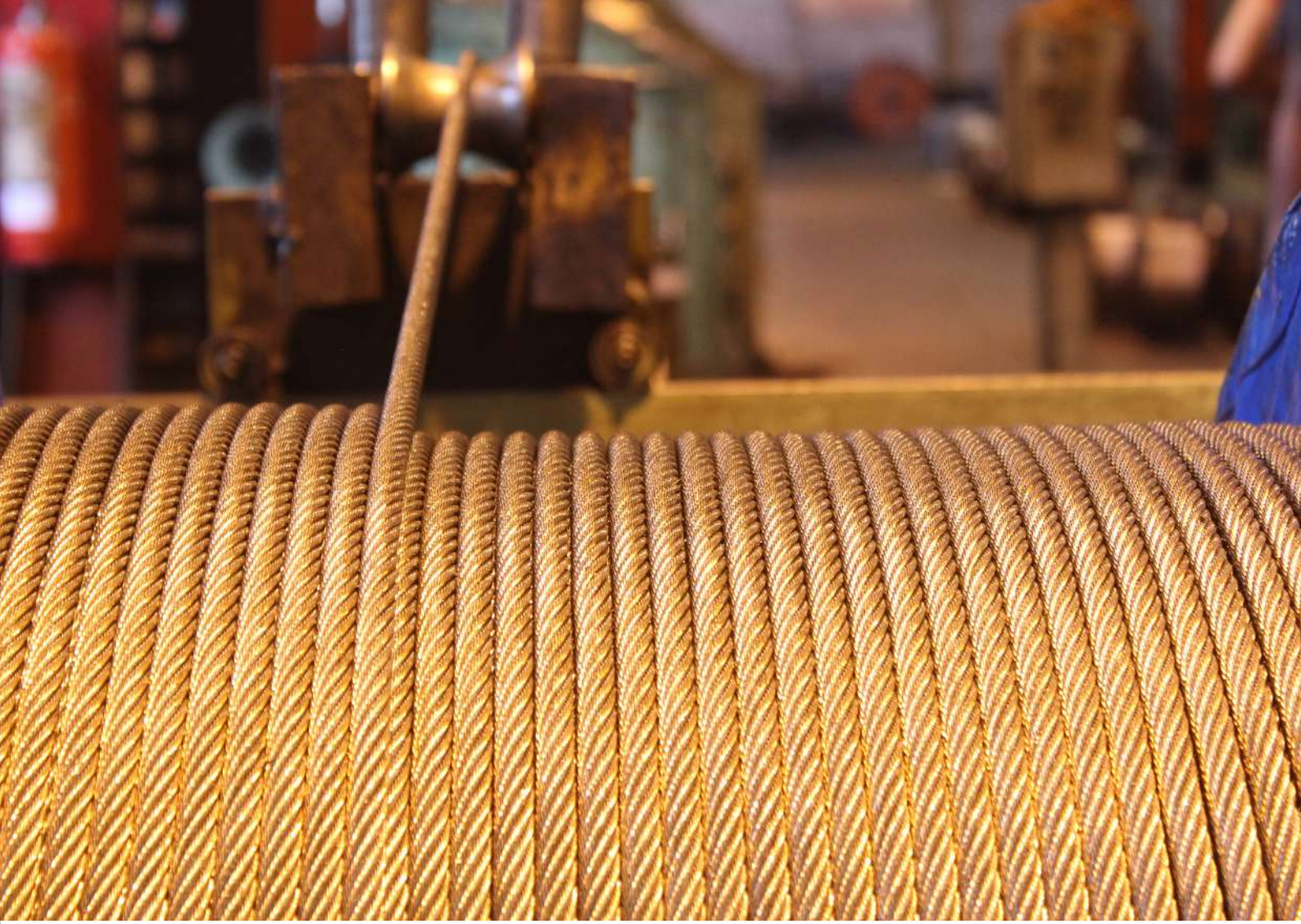
60+ YEARS OF LEADERSHIP

PRESENCE ACROSS **75+** COUNTRIES

06 MANUFACTURING FACILITIES

02 R&D CENTRES

300+ CHANNEL PARTNERS



MANUFACTURING CAPABILITIES

- Our elevator ropes are designed to meet the required OEM specifications and are available as elevator hoist ropes, compensating ropes, governor ropes, and control ropes, all used in traction-drive elevators and roped hydraulic lifts.
- The elevator ropes are prestretched using state-of-the-art technology to eliminate constructional stretch, ensuring greater stability, superior performance, and an extended service life of the rope.
- Our wire ropes undergo all kinds of destructive and non-destructive testing.
- The quality systems have been certified by ISO 9001:2015 and our elevator ropes are meticulously engineered to comply with all international standards.
- Usha Martin's global distribution and service centres are fully equipped to provide cut-to-length elevator ropes and tailored solutions for our customers.

HIGH STRENGTH, PRESTRETCHED ROPES

YOUR SAFETY OUR PRIORITY

Delivering one-stop elevator rope solutions tailored to your unique needs.

Building stronger connections with an unwavering commitment to customer satisfaction.

ROPE DIAMETER TOLERANCE

Throughout the entire manufacturing process of elevator wire ropes, the ropes are meticulously monitored to ensure they meet the desired tolerances and maintain a consistent diameter. This is critical for ensuring proper contact between the rope and the groove, which facilitates smooth and efficient elevator movement. A wire rope cannot be produced to its absolute size and there is always some applicable tolerance. Usha Martin manufactures its ropes within the tolerance levels specified by National and International Standards, as well as those specified by the OEMs.

The applicable rope diameter tolerance is as follows:

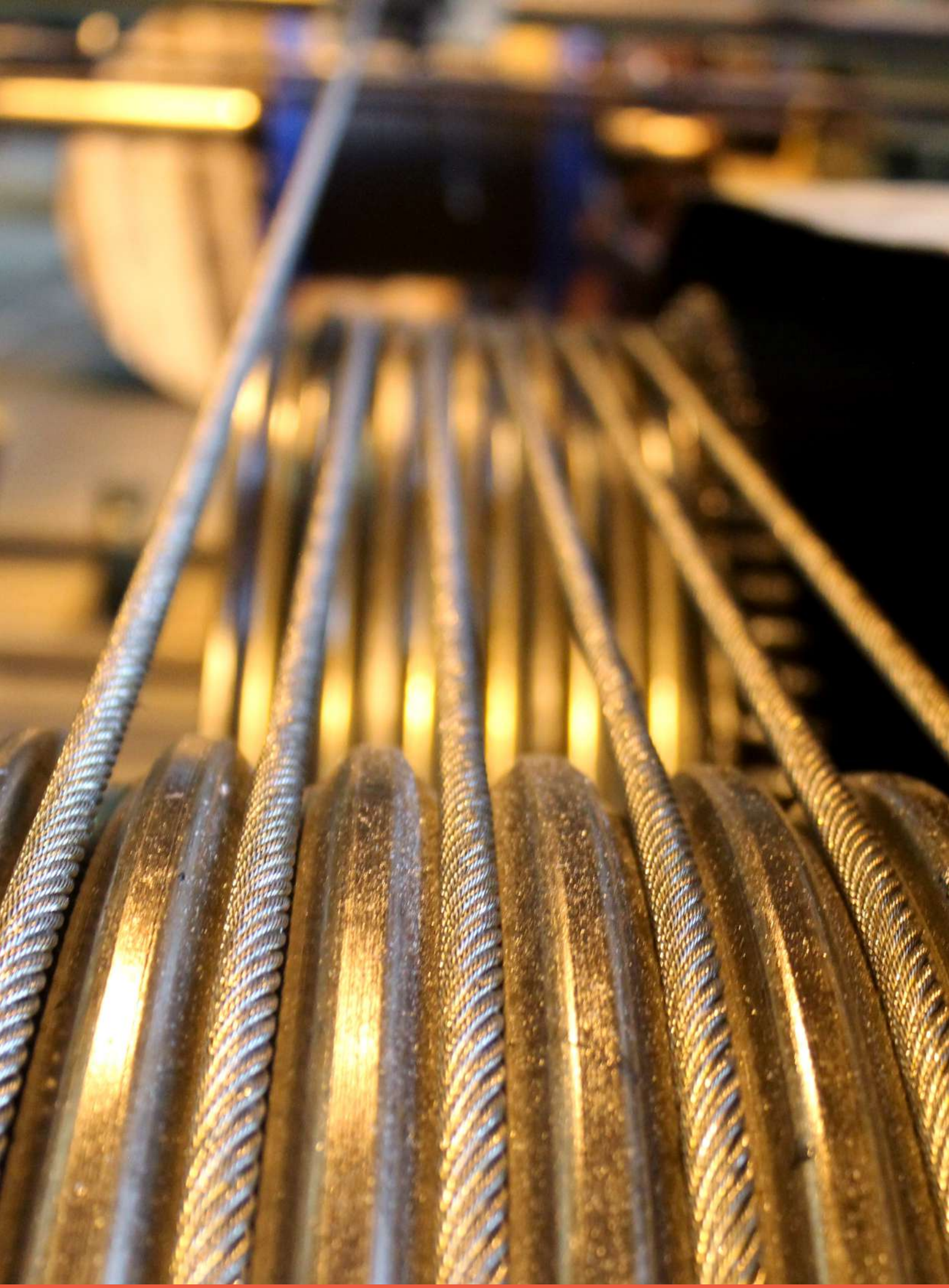
TABLE A

	Rope Designation	Core Type	Nominal Rope Diameter	Tolerance as percentage of nominal diameter	
				Maximum at no load	Minimum at 10% of MBL
SUSPENSION ROPES FOR TRACTION DRIVE LIFTS AND GOVERNOR ROPES	6X19 8X19	Fibre	upto 10 mm or 3/8”	+6	0
			above 10 mm or 7/16”	+5	0
	6X19 8X19 9X19	Steel (IWRC)	upto 10 mm or 3/8”	+3	-1
			above 10 mm or 7/16”	+2	-2

TABLE B

	Nominal Rope Diameter	Tolerance as percentage of nominal diameter	
		Maximum at no load	Maximum at no load
SUSPENSION ROPES OF ROPED HYDRAULIC LIFTS AND COMPENSATING ROPES	6mm < d < 8mm 1/4”< d < 5/16”	+6	0
	> 8 mm > 3/8”	+5	0

NOTE:
If not specified, we shall produce wire ropes meeting the diameter tolerance values specified in ISO 4344 and EN 12385-5



PRESTRETCHING

The elevator ropes are prestretched to remove the constructional stretch from wire rope. The prestretched ropes are processed off-line on a specially designed prestretching bed, utilising a longer length of rope and subjecting it to a suitable load for sufficient number of cycles until it stabilises. The process has been found to be the most effective in reducing the constructional stretch of a wire rope and is much superior to on-line prestretching, offering enhanced service life for elevator ropes.

It must however be remembered that repeated handling (particularly coiling/ uncoiling) of the wire rope reduces the effect of prestretching, although temporarily, which is realised again when the wire rope is loaded after installation.

	CONSTRUCTIONAL STRETCH	TOTAL STRETCH
STANDARD WIRE ROPE		
6x19 Class with Fibre Core	0.25-0.50%	0.40-0.75%
8x19 Class with Fibre Core	0.50-0.75%	0.70-1.05%
8x19 Class with Steel Core	0.30-0.60%	0.45-0.85%
9x19 Class with Steel Core		
PRESTRETCHED WIRE ROPE		
6x19 Class with Fibre Core	0.10-0.25%	0.25-0.50%
8x19 Class with Fibre Core	0.20-0.35%	0.40-0.65%
8x19 Class with Steel Core	0.10-0.30%	0.25-0.60%
9x19 Class with Steel Core		

- The values stated above are sensitive to the influence of applied load and other test /site condition and has been given for general guidance only
- The stretch of wire rope in an installation is greatly influenced by the efficiency of wire rope tensioning. If the tension is not equal on each rope of the set then each rope will not stretch in equal proportion and is likely to create vibration and will adversely affect rope performance.

MAINTENANCE

The wires of all elevator ropes produced at Usha Martin are lubricated during stranding process with specialized lubricant and a controlled wiping is employed to regulate its quantity on the finished wire rope. The type of lubricant is carefully selected for each category of elevator rope considering long service life of these wire ropes and further to ensure that traction is not affected adversely during usage. The natural fibre core is also impregnated with a compatible lubricant to protect the same during its storage and usage.

The lubricant applied during production, however, gradually diminishes during usage and requires to be replenished periodically with a suitable lubricant. The field lubrication is necessary to reduce wear of rope and sheaves, minimize friction between wires, protect wires from corrosion and increase service life of the wire rope.

Following are the OEM instructions regarding field lubrication.

- A light viscosity oil with corrosion inhibitors and good penetration is preferred.
- The lubricant may be applied with a spray-can or paint brush or by any other suitable and efficient method.
- Periodic check of lubrication condition on wire rope surface should be carried out.
- The re-lubrication schedule and quantity of lubricant should be decided by maintenance personnel considering atmospheric and technical factors.

AVOID

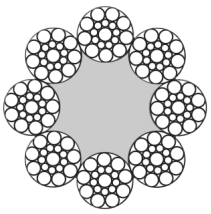
- Excessive Lubrication of hoist ropes as it may lead to slippage.
- Lubrication of governor ropes - it may interfere with the designed safety function of the device. Check OEM's recommendation.

ROPE CLASS 8X19

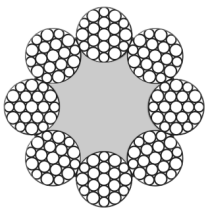
with Fibre Core

ISO 4344:2022, IS 2365:2024

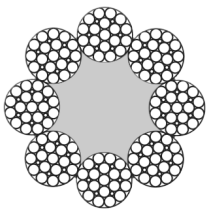
NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE				
			ROPE GRADE				
			DUAL TENSILE		SINGLE TENSILE		
			1370/1770	1570/1770	1570	1770	1960
mm	in	kg/100m	kN	kN	kN	kN	kN
8	5/16	21.8	28.1	30.8	29.4	33.2	36.8
9		27.5	35.6	38.9	37.3	42	46.5
9.5	3/8	30.7	39.7	43.4	41.5	46.8	51.8
10		34	44	48.1	46	51.9	57.4
11	7/16	41.1	53.2	58.1	55.7	62.8	69.5
12		49	63.3	69.2	66.2	74.7	82.7
12.7	1/2	54.8	70.9	77.5	74.2	83.6	92.6
13		57.5	74.3	81.2	77.7	87.6	97.1
14		66.6	86.1	94.2	90.2	102	113
14.3	9/16	69.5	-	98.3	-	-	-
15		76.5	99.0	108	104	117	129
16	5/8	87	113	123	118	133	147
17.5	11/16	104	-	147	-	-	176
18		110	142	156	149	168	186
19	3/4	123	159	173	166	187	207
20		136	176	192	184	207	230
20.6	13/16	144	-	204	-	-	-
22	7/8	165	213	233	223	251	278
22.4		173	221	241	231	260	288
25		216	275	300	288	324	359



8 X 19S (9 - 9 - 1) + FC



8X19W (6 + 6 - 6 - 1) + FC



8X25F (12 - 6F - 6 - 1) + FC

- Most frequently used worldwide
- Superior bending fatigue resistance
- Improved contact on drums and sheaves

EN 12385-5

NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE					
			ROPE GRADE					
			DUAL TENSILE				SINGLE TENSILE	
			1180/1770	1370/1770	1180/1770	1370/1770	1570	1570
mm	in	kg/100m	kN	kN	lbs	lbs	kN	lbs
8	5/16	21.8	25.7	28.1	5778	6317	29.4	6609
9		27.5	32.5	35.6	7306	8003	37.3	8385
10		34	40.1	44.0	9015	9892	46.0	10341
11	7/16	41.1	48.6	53.2	10926	11960	55.7	12522
12		49	57.8	63.3	12994	14230	66.2	14882
13		57.5	67.8	74.3	15242	16703	77.7	17468
14		66.6	78.7	86.1	17692	19356	90.2	20278
15		76.5	90.3	98.9	20300	22234	104	23380
16	5/8	87	103	113	23155	25403	118	26527
18		110	130	142	29225	31923	149	33497
19	3/4	123	145	159	32597	35745	166	37318
20		136	161	176	36194	39566	184	41365
22	7/8	165	194	213	43613	47884	223	50132

US CUSTOMARY UNITS

Wire Rope conforms to the applicable sections of ISO 4344

NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE				
			ROPE GRADE				
			DUAL TENSILE		SINGLE TENSILE		
			1370/1770	1570/1770	1570	1770	1960
in	mm	lb/ft	lbs	lbs	lbs	lbs	lbs
1/4	6.35	0.09	3979	4361	4100	4701	5211
5/16	8	0.15	6207	6924	6610	7464	8273
3/8	9.5	0.21	8925	9757	9330	10521	11645
7/16	11	0.28	11960	13061	12520	14118	15624
1/2	12.7	0.37	15939	17423	16680	18794	20817
9/16	14.3	0.47	20228	22099	21150	23906	26505
5/8	16	0.58	25403	27651	26530	29899	33047
11/16	17.5	0.70	30174	33047	31670	35700	39566
3/4	19	0.83	35744	38892	37320	42039	46535
13/16	20.6	0.97	41972	45861	43890	49368	54853
7/8	22	1.11	47884	52380	50140	56427	62497
15/16	23.8	1.30	56090	61148	58630	66037	73141
1	25.4	1.47	63816	69616	66720	75198	83309
1 1/16	27	1.66	72109	78683	75340	84955	94359

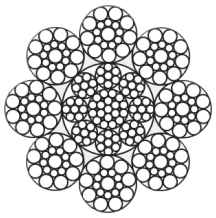
NOTE:
Rope sizes and breaking force not shown in the table, may be available on request and prior confirmation.
1180/1770 and 1370/1770 rope grade is equivalent to Traction steel grade.

ROPE CLASS 8X19

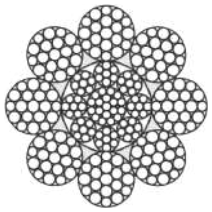
with Steel Core

ISO 4344:2022, IS 2365:2024

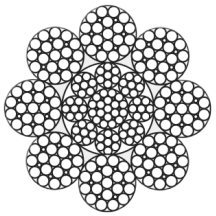
NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE				
			ROPE GRADE				
			DUAL TENSILE			SINGLE TENSILE	
			1370/1770	1570/1770	1570	1770	1960
mm	in	kg/100m	kN	kN	kN	kN	kN
6		15.6	21.6	23	21.6	24.3	27
6.5		17.5	25.3	27	25.3	28.6	31.6
8	5/16	26	38.4	40.8	38.4	43.3	47.9
9		33	48.6	51.7	48.6	54.8	60.6
9.5	3/8	36.7	54.1	57.6	54.1	61	67.6
10		40.7	60	63.8	60	67.6	74.9
11	7/16	49.2	72.6	77.2	72.6	81.8	90.6
12		58.6	86.4	91.9	86.4	97.4	108
12.7	1/2	65.6	96.7	103	96.7	109	121
13		68.8	101	108	101	114	127
14		79.8	118	125	118	133	147
15		91.6	135	144	135	152	168
16	5/8	104	154	163	154	173	192
18		132	194	207	194	219	243
19	3/4	147	217	230	217	244	270
20		163	240	255	240	270	299
22	7/8	197	290	309	290	327	362
22.4		207	301	320	301	339	376
25		258	375	399	375	423	468



8 X 19S (9-9-1) + IWRC



8 X 19W (6+6-6-1) + IWRC



8 X 25F (12-6F-6-1) + IWRC

- Exceptional bending fatigue resistance
- High resistance to crushing
- Improved contact with drums and sheaves

EN 12385-5

NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE							
			ROPE GRADE							
			DUAL TENSILE				SINGLE TENSILE			
			1370/1770	1570/1770	1370/1770	1570/1770	1570	1770	1570	1770
mm	in	kg/100m	kN	kN	lbs	lbs	kN	kN	lbs	lbs
8	5/16	26	35.8	38.0	8048	8543	35.8	40.3	8048	9060
9		33	45.3	48.2	10184	10836	45.3	51.0	10184	11465
10		40.7	55.9	59.5	12567	13376	55.9	63.0	12567	14163
11	7/16	49.2	67.6	71.9	15197	16164	67.6	76.2	15197	17130
12		58.6	80.5	85.6	18097	19244	80.5	90.7	18097	20390
13		88.7	94.5	100	21244	22481	94.5	106	21244	23830
14		79.8	110	117	24729	26303	110	124	24729	27876
15		91.6	126	134	28326	30124	126	142	28326	31923
16	5/8	104	143	152	32148	34171	143	161	32148	36194
18		132	181	193	40690	43388	181	204	40690	45861
19	3/4	147	202	215	45411	48334	202	227	45411	51032
20		163	224	238	50357	53505	224	252	50357	56652
22	7/8	197	271	288	60923	64745	271	305	60923	68567

US CUSTOMARY UNITS

Wire Rope conforms to the applicable sections of ISO 4344

NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE				
			ROPE GRADE				
			DUAL TENSILE		SINGLE TENSILE		
			1370/1770	1570/1770	1570	1770	1960
in	mm	lb/ft	lbs	lbs	lbs	lbs	lbs
1/4	6.35	0.11	5428	5793	5428	6137	6780
5/16	8	0.17	8633	9172	8633	9734	10768
3/8	9.5	0.25	12162	12949	12162	13713	15197
7/16	11	0.33	16321	17355	16321	18389	20368
1/2	12.7	0.44	21739	23155	21739	24504	27202
9/16	14.3	0.56	27676	29315	27676	31194	34477
5/8	16	0.7	34620	36644	34620	38892	43163
11/16	17.5	0.84	41223	43986	41223	46535	51638
3/4	19	0.99	48783	51706	48783	54853	60698
13/16	20.6	1.16	57241	60817	57241	64396	71311
7/8	22	1.32	65194	69466	65194	73512	81380

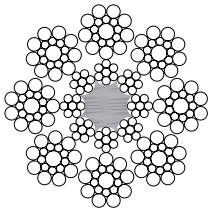
NOTE:
Rope sizes and breaking force not shown in the table, may be available on request and prior confirmation.
1180/1770 and 1370/1770 rope grade is equivalent to Traction steel grade.

ROPE CLASS 8X19

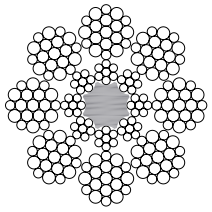
with Composite Steel Core

ISO 4344:2022, IS 2365:2024

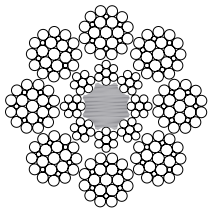
NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE				
			ROPE GRADE				
			DUAL TENSILE			SINGLE TENSILE	
			1370/1770	1570/1770	1570	1770	1960
mm	in	kg/100m	kN	kN	kN	kN	kN
8	5/16	24.2	35.4	37.6	35.4	39.9	44.2
9		30.6	44.8	47.6	44.8	50.5	55.9
9.5	3/8	34.1	49.9	53.1	49.9	56.2	62.3
10		37.8	55.3	58.8	55.3	62.3	69
11	7/16	45.7	66.9	71.1	66.9	75.4	83.5
12		54.4	79.6	84.6	79.6	89.7	99.3
12.7	1/2	61	89.1	94.8	89.1	100	111
13		63.9	93.4	99.3	93.4	105	117
14		74.1	108	115	108	122	135
15		85.1	124	132	124	140	155
16	5/8	96.8	141	150	141	159	177
18		122	179	190	179	202	224
19	3/4	136	200	212	200	225	249
20		151	221	235	221	249	276
22	7/8	183	267	285	267	302	334
22.4		190	277	295	277	313	346
25		236	345	367	345	389	431



8 X 19S (9-9-1) + CSC



8 X 19W (6+6-6-1) + CSC



8 X 25F (12-6F-6-1) + CSC

US CUSTOMARY UNITS

Wire Rope conforms to the applicable sections of ISO 4344

NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE				
			ROPE GRADE				
			DUAL TENSILE		SINGLE TENSILE		
			1370/1770	1570/1770	1570	1770	1960
in	mm	lb/ft	lbs	lbs	lbs	lbs	lbs
5/16	8	0.16	7958	8453	7958	8970	9905
3/8	9.5	0.23	11218	11938	11218	12634	13961
7/16	11	0.31	15040	15985	15040	16951	18712
1/2	12.7	0.41	20031	21313	20031	22481	24875
9/16	14.3	0.52	25406	27025	25406	28642	31616
5/8	16	0.65	31698	33723	31698	35745	39666
11/16	17.5	0.78	38048	40473	38048	42895	47350
3/4	19	0.91	44962	47662	44962	50582	55801
13/16	20.6	1.08	52722	56083	52722	59438	65611
7/8	22	1.23	60024	64074	60024	67893	74849

TAKING ELEVATORS TO NEW HEIGHTS

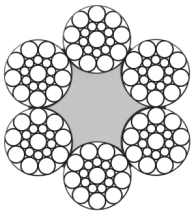
EMPOWERING CUSTOMER SUCCESS THROUGH CUTTING-EDGE SOLUTIONS

ROPE CLASS 6X19

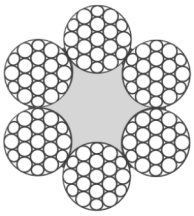
with Fibre Core

ISO 4344:2022, IS 2365:2024

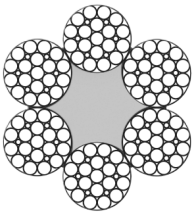
NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE				
			ROPE GRADE				
			DUAL TENSILE		SINGLE TENSILE		
			1370/1770	1570/1770	1570	1770	1960
mm	in	kg/100m	kN	kN	kN	kN	kN
6		12.9	17.8	19.5	18.7	21.0	23.3
6.3	1/4	14.2	-	21.5	-	23.2	25.7
6.5		15.2	20.9	22.9	21.9	24.7	27.3
8	5/16	23	31.7	34.6	33.2	37.4	41.4
9		29.1	40.1	43.8	42.0	47.3	52.4
9.5	3/8	32.4	44.7	48.8	46.8	52.7	58.4
10		35.9	49.5	54.1	51.8	58.4	64.7
11	7/16	43.4	59.9	65.5	62.7	70.7	78.3
12		51.7	71.3	77.9	74.6	84.1	93.1
12.7	1/2	57.9	79.8	87.3	83.6	94.2	104
13		60.7	83.7	91.5	87.6	98.7	109
14		70.4	97.0	106	102	114	127
14.3	9/16	73.4	-	111	-	119	132
15		80.8	111	122	117	131	146
16	5/8	91.9	127	139	133	150	166
17.5	11/16	110	-	166	-	179	-
18		116	160	175	168	189	-
19	3/4	130	179	195	187	211	-
20		144	198	216	207	234	-
20.6	13/16	152	-	230	-	248	-
22	7/8	174	240	262	251	283	-
22.4		180	248	272	260	293	-
25		224	309	338	324	365	-



6X19S (9 - 9 - 1) + FC



6X19W (6 + 6 - 6 - 1) + FC



6X25F (12 - 6F - 6 - 1) + FC

- 6x19 is mostly used as Governor Rope
- Good bending fatigue values

EN 12385-5

NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE							
			ROPE GRADE							
			DUAL TENSILE				SINGLE TENSILE			
			1180/1770	1370/1770	1180/1770	1370/1770	1570	1770	1570	1770
mm	in	kg/100m	kN	kN	lbs	lbs	kN	kN	lbs	lbs
6			16.3	17.8	3664	4002	18.7	21.0	4204	4721
6.5			19.1	20.9	4294	4699	21.9	24.7	4923	5553
8	5/16	23	28.9	31.7	6497	7126	33.2	37.4	7464	8408
9		29.1	36.6	40.1	8228	9015	42.0	47.3	9442	10633
10		35.9	45.2	49.5	10161	11128	51.8	58.4	11645	13129
11	7/16	43.4	54.7	59.9	12297	13466	62.7	70.7	14096	15894
12		51.7	65.1	71.3	14635	16029	74.6	84.1	16771	18906
13		60.7	76.4	83.7	17175	18817	87.6	98.7	19693	22189
14		70.4	88.6	97	19918	21806	102	114	22931	25628
15		80.8	102	111	22931	24954	117	131	26303	29450
16	5/8	91.9	116	127	26078	28551	133	150	29900	33721
18		116	146	160	32822	35969	168	189	37768	42489
19	3/4	130	163	179	36644	40241	187	211	42039	47435
20		144	181	198	40690	44512	207	234	46535	52605
22	7/8	174	219	240	49233	53954	251	283	56427	63621

US CUSTOMARY UNITS

Wire Rope conforms to the applicable sections of ISO 4344

NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE				
			ROPE GRADE				
			DUAL TENSILE		SINGLE TENSILE		
			1370/1770	1570/1770	1570	1770	1960
in	mm	lb/ft	lbs	lbs	lbs	lbs	lbs
1/4	6.3	0.1	4413	4833	4698	5216	5778
5/16	8	0.15	7126	7778	7464	8408	9307
3/8	9.5	0.22	10049	10971	10521	11847	13129
7/16	11	0.29	13466	14725	14095	15894	17602
1/2	12.7	0.39	17940	19626	18794	21177	23380
9/16	14.3	49	22751	24954	23924	26752	29675
5/8	16	0.62	28551	31248	29899	33721	37318
11/16	17.5	0.74	33998	37318	35700	40241	-
3/4	19	0.87	40241	43838	42039	47434	-
13/16	20.6	1.02	47210	51706	49368	55752	-
7/8	22	1.17	53954	58900	56427	63621	-
15/16	23.8	1.137	62946	69016	65981	74456	-
1	25.4	1.56	71714	78458	75187	84703	-
1 1/16	27	1.76	81021	88574	84957	95710	-

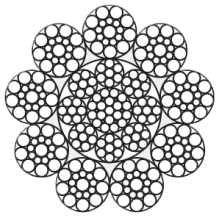
NOTE:
Rope sizes and breaking force not shown in the table, may be available on request and prior confirmation.
1180/1770 and 1370/1770 rope grade is equivalent to Traction steel grade.

ROPE CLASS 9X19

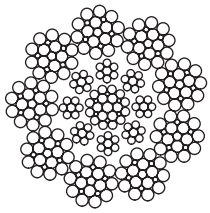
with Steel Core

ISO 4344:2022, IS 2365:2024

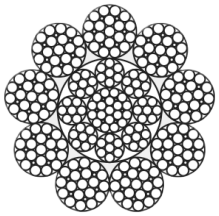
NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE			
			ROPE GRADE			
			DUAL TENSILE	SINGLE TENSILE		
			1570/1770	1570	1770	1960
mm	in	kg/100m	kN	kN	kN	kN
8	5/16	27.8	41.5	39.0	44.0	48.7
9		35.2	52.5	49.3	55.6	61.6
9.5	3/8	39.3	58.5	55.0	62.0	68.6
10		43.5	64.8	60.9	68.6	76.0
11	7/16	52.6	78.4	73.7	83.1	92.0
12		62.6	93.3	87.7	98.9	109
12.7	1/2	70.2	104	98.2	110	122
13		73.5	109	103	116	128
14		85.3	127	119	135	149
15		97.9	145	137	155	171
16	5/8	111	165	156	175	195
18		141	210	197	223	246
19	3/4	157	234	220	248	275
20		174	259	244	275	304
22	7/8	211	313	294	332	368
22.4		218	325	306	345	382
25		270	405	381	429	475



9 X 19S (9-9-1) + IWRC



9 X 21F (10-5F-5-1) + IWRC



9 X 25F (12-6F-6-1) + IWRC

- Excellent bend fatigue values
- Very good crushing resistance
- Enhanced contact on drum and sheaves

US CUSTOMARY UNITS

Wire Rope conforms to the applicable sections of ISO 4344

NOMINAL ROPE DIAMETER	#EQUIV. NOMINAL ROPE DIAMETER	APPROX. MASS	MINIMUM BREAKING FORCE			
			ROPE GRADE			
			DUAL TENSILE	SINGLE TENSILE		
			1570/1770	1570	1770	1960
in	mm	lb/ft	lbs	lbs	lbs	lbs
5/16	8	0.19	9330	8768	9892	10948
3/8	9.5	0.26	13151	12364	13938	15422
7/16	11	0.35	17625	16568	18682	20682
1/2	12.7	0.47	23380	22076	24729	27427
9/16	14.3	0.6	29787	28061	31636	35032
5/8	16	0.75	37093	35130	39341	43857
11/16	17.5	0.9	44627	42026	47379	52465
3/4	19	1.06	52605	49539	55849	61845
13/16	20.6	1.24	61773	58233	65652	72699
7/8	22	1.41	70365	66094	74636	82729

NOTE:
Rope sizes and breaking force not shown in the table, may be available on request and prior confirmation.

SAFETY INFORMATION

- Wire rope will fail if worn out, shock loaded, overloaded, misused, damaged, improperly maintained or abused.
- Always inspect wire rope for wear, damage or abuse before use.
- Never use a wire rope which is worn out, damaged, corroded or abused.
- Never overload or shock load a wire rope.
- Use the correct design factor for the application.
- Read and understand the machinery manufacturers handbook and guidance from the wire rope manufacturer.
- Refer to applicable directives, regulations, standards and codes concerning inspection, examination and rope removal criteria.

METRIC – IMPERIAL DIAMETER CONVERSION											
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
5/32	3.97	1/2	12.7	15/16	23.8	1 1/2	38.1	2 1/2	63.5	4 1/4	108.0
3/16	4.76	9/16	14.3	1	25.4	1 5/16	41.3	2 3/4	69.9	4 1/2	114.3
7/32	5.56	5/8	15.9	1 1/16	27.0	1 3/4	44.5	3	76.2	4 3/4	120.7
1/4	6.35	11/16	17.5	1 1/8	28.6	1 7/8	47.6	3 1/4	82.6	5	127.0
5/16	7.94	3/4	19.0	1 3/16	30.2	2	50.8	3 1/2	88.9		
3/8	9.53	13/16	20.6	1 1/4	31.8	2 1/8	54.0	3 3/4	95.3		
7/16	11.1	7/8	22.2	1 3/8	34.9	2 1/4	57.2	4	101.6		

CONVERSION TABLE				
Length	**1m**	**= 1000mm**	**= 3.281ft**	**= 39.37 inch**
Force	**1kN**	**= 101.97kp**	**= 0.10197 t metric-f**	**= 224lbs-f**
Tensile Strength	**1N/mm²**	**= 0.10197 kp/mm²**	**= 145.04 p.s.i.**	**= 10 bar**
Cross Section	**1 mm²**	**= 0.00155 sq.inch**		
Weight	**1 metric t**	**= 1000kg = 1.102 short t**	**= 0.9842 long t**	**= 2204.6 lbs**
Weight per Length Unit	**1 kg/m**	**= 0.672 lbs/ft**		

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