



# MINING ROPES

SURFACE AND  
UNDERGROUND

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 **usha martin**





The mining industry is known for having some of the most diverse, difficult and demanding rope applications in the world.

Usha Martin Limited can supply a wide range of wire rope constructions to provide the right combination of wear and fatigue resistance, strength and other properties to meet these severe service conditions.

The wire rope constructions provided for the mining industry are specifically designed for the types of loading, external wear, bending and vibrational stresses to which these ropes are subjected.

- ISO 9001:2008 accredited: All mining ropes shown are manufactured using systems which are approved to ISO.
- Guaranteed breaking load: A sample of each rope is tested to destruction to confirm that the published guaranteed minimum breaking load is achieved.
- Excellent resistance to fatigue, wear and abrasion: confirmed by laboratory testing and field experience.
- Excellent service life
- Fully lubricated
- Worldwide distribution network with full technical support.



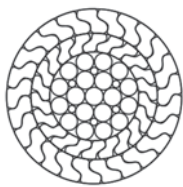
ISO 9001 ACCREDITATION



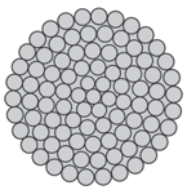
# SURFACE MINING

Usage	Rope Type	Rope Size (mm)	Rope Details
Drag line	Hoist Rope	38-144	Minesflex 6/Cushion Core; Minesform 8 PVF/Minesflex 8
	Drag Rope	38-127	Drag 6
	Dump Rope	38-83	6x36WS, 6x41WS, 6x37SF, Minesflex 8, Minesform 8PVF
	Boom Suspension Rope	25-116	Full locked coil wire rope/ Spiral strand
Shovels	Hoist Rope Crowd/Retract Rope	38-86	Minesform 8PVF/Minesflex 8/ Cushion Core/Minesflex 6
	Trip Rope	8-26	6x26SW; 6x36WS
	Boom Suspension Rope	25-116	Full locked coil wire rope/ Spiral strand

Note: Other sizes and constructions available on request



FULL LOCKED TRACK ROPE

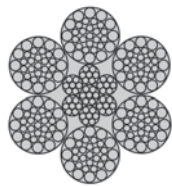


SPIRAL STRANDS



# SURFACE MINING

## SPECIAL MINING ROPES DRAG 6



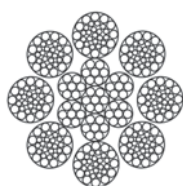
CONSTR.	NOMINAL ROPE DIA		APPROX. ROPE MASS Kg./100m	MINIMUM BREAKING STRENGTH	
	mm	Inch.		kN	MT
6x37SF	38	1-1/2	599	872	88.9
	40		664	961	98
		1-5/8	707	1030	105
	42		732	1069	109
	44	1-3/4	804	1167	119
	46		878	1275	130
	48	1-7/8	956	1393	142
	50		1038	1511	154
		2	1071	1560	159
	52		1123	1628	166
	54	2-1/8	1211	1756	179
	56		1302	1893	193
		2-1/4	1356	1972	201
	58		1397	2031	207
	60	2-3/8	1502	2276	232
6x50SF	63	2-1/2	1656	2502	255
	67	2-5/8	1873	2835	289
	70	2-3/4	2044	3090	315
6x57SF		2-7/8	2225	3394	346
	76	3	2410	3669	374
		3-1/8	2629	3914	399
6x55SF	83	3-1/4	2895	4287	437
	86	3-3/8	3108	4611	470
	89	3-1/2	3328	4934	503
	92	3-5/8	3557	5278	538
6 X 61	95	3-3/4	3765	5484	559
		3-7/8	4042	5886	600
		4	4306	6269	639
	105	4-1/8	4599	6690	682
	108	4-1/4	4866	7083	722
	111	4-3/8	5140	7485	763
		4-1/2	5450	7936	809
	121	4-3/4	6105	8889	906
	127	5	6726	9792	999

Note: Sizes and breaking load values not shown above are also available on request.



# SURFACE MINING

## SPECIAL MINING ROPES MINESFLEX 8

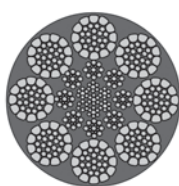


CONSTR.	NOMINAL ROPE DIA		APPROX. MASS Kg./100m	MINIMUM BREAKING STRENGTH	
	mm	Inch.		kN	MT
8x37SF	38	1-1/2	599	872	88.9
	40		664	961	98
		1 - 5/8	707	1030	105
	42		732	1069	109
	44	1 - 3/4	804	1167	119
	46		878	1275	130
	48	1 - 7/8	956	1393	142
	50		1038	1511	154
		2	1071	1560	159
	52		1123	1628	166
	54	2 - 1/8	1211	1756	179
	56		1302	1893	193
		2 - 1/4	1356	1972	201
	58		1397	2031	207
	60	2 - 3/8	1513	2197	224
	62		1615	2345	239
	63	2 - 1/2	1668	2423	247
	64		1721	2502	255
8x50SF	67	2 - 5/8	1905	2766	282
	70	2 - 3/4	2079	3021	308
		2-7/8	2263	3286	335
	76	3	2451	3561	363
		3 - 1/8	2673	3885	396
	83	3 - 1/4	2923	4238	432
	86	3 - 3/8	3138	4552	464
	92	3 - 5/8	3603	5252	536
8x55SF	115	4 - 1/2	5552	8093	825
8x61	121	4 - 3/4	6222	9070	925
	127	5	6855	9992	1019
	143	5 - 5/8	8691	12668	1292

Note: Sizes and breaking load values not shown above are also available on request.

# SURFACE MINING

## SPECIAL MINING ROPES MINESFLEX 8PVF



CONSTR.	NOMINAL ROPE DIA		APPROX. MASS Kg./100m	MINIMUM BREAKING STRENGTH	
	mm	Inch.		kN	MT
8x37SF	38	1 - 1/2	639	981	100
	40		708	1089	111
		1 - 5/8	754	1148	117
	42		780	1197	122
	44	1 - 3/4	856	1344	137
	46		936	1422	145
	48	1 - 7/8	1019	1550	158
	50		1106	1678	171
		2	1141	1727	176
	52		1196	1815	185
	54	2 - 1/8	1290	1962	200
	56		1387	2099	214
		2 - 1/4	1445	2188	223
	58		1488	2256	230
	60	2 - 3/8	1604	2433	248
	62		1712	2600	265
	63	2 - 1/2	1768	2688	274
	64		1812	2737	279
8x50SF	67	2 - 5/8	2002	3012	307
	70	2 - 3/4	2185	3120	318
	72		2312	3296	336
	73	2 - 7/8	2379	3394	346
	76	3	2576	3561	363
		3 - 1/8	2810	3885	396
	83	3 - 1/4	3073	4248	433
	86	3 - 3/8	3299	4562	465

**Note:**

- 'PVF' signifies Fully Plasticated & Valley Filled
- Sizes and breaking load values not shown above are also available on request.



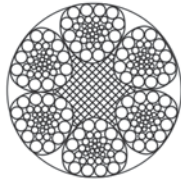


## ADVANTAGES OF 8 STRAND AND PLASTIC FILLED ROPES

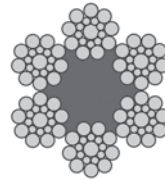
- More flexible construction increases the fatigue resistance.
  - More number of point contact for 8-strand rope than 6-strand rope increases the contact area with the sheave and drum grooves. These results in extended abrasion and fatigue life.
  - Suitable for Dragline & Shovel Ropes.
  - Unique process of compaction, improves inter wire contact, ensuring that the rope will operate in lower stress level resulting in longer bending fatigue life.
  - Smooth surface of compacted strand rope improves rope to sheave contact area leading to reduce wear on both, rope and sheave.
  - The Plastic Impregnation cushions the strands and prevents inter strand contact and improves resistance to shock loading.
  - Plastic filling extends rope life by reducing the impact of fatigue on rope life.
  - Plastic filled ropes keeps the internal lubricant intact and keeps out dirt and dust.
  - The plastic filled ropes increase safety by providing a clean working environment (locked lubrication inside the rope).
  - Most suitable for Dragline Hoist Ropes & Shovel Hoist Ropes.
- Note: Compacted Valley Filled ropes are also available with 8 x 37SF, 8 x 43SF & 8 x 49SF Construction.



# UNDERGROUND MINING



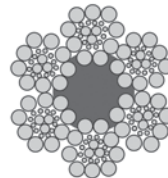
6 x V25  
(12/12/9+3  $\Delta$  Brangle Centre) + CFN



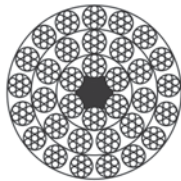
ROUND STRAND  
6/19S (9-9-1)



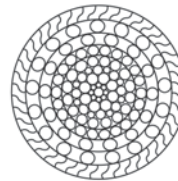
ROUND STRAND 6/7 (6/1)  
(Aerial Haulage)



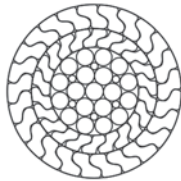
FLATTENED STRAND  
6x22 (9/12- $\blacktriangle$ ) & 6x25 (12/12- $\blacktriangle$ ) FS



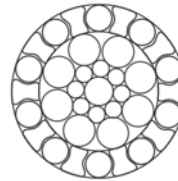
34 x 7



FULL LOCKED WINDING ROPE



FULL LOCKED TRACK ROPE



HALF LOCKED GUIDE ROPE





Sector	Rope Type	Rope Size (mm)	Rope Details
Under ground Mines	Haulage Rope	16-28	6x7, 6x17S, 6x19S
	Winding Rope	16-55	LCWR-Full Lock
			6xV8, 6xV22, 6xV25, 6xV27, 6xV28
			6x7, 6x19S, 6x26SW, 6x36SW, 8x19
	Guide Rope	29-54	LCWR; Half Lock, Right Lay, Galvanised/Ungalvanised.
	Balance Rope	16-64	34x7 (Rotation resistant)

Sector	Rope Type	Rope Size (mm)	Rope Details
Material Handling	Haulage Rope	16-51	6x7, 6x17S, 6x19S, 6xV8, 6xV22
	Lock Coil Track Rope	25-70	Full Lock/Right lay; Ungalvanised.

Note:

“V” = Triangular Flattened Strand Ropes.

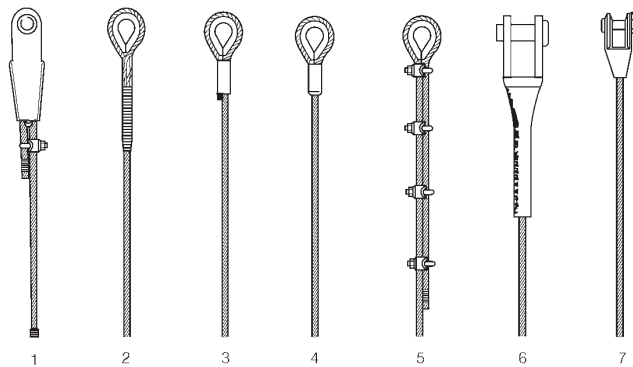
“CWR” = IWRC

PVF = Plastic Valley Filled



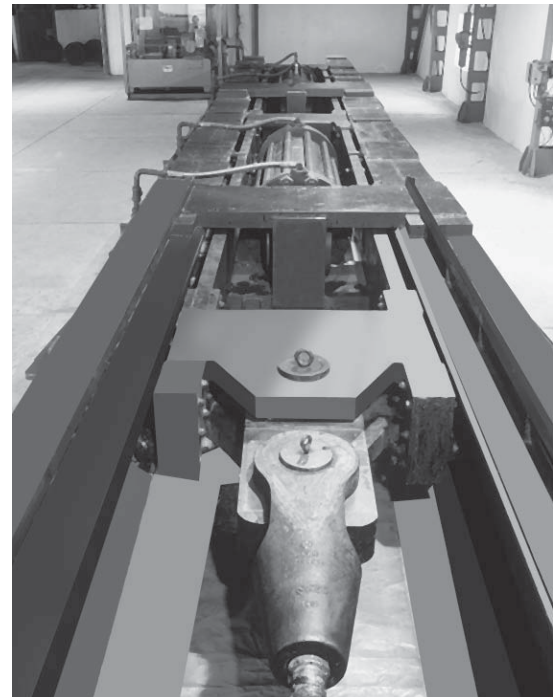
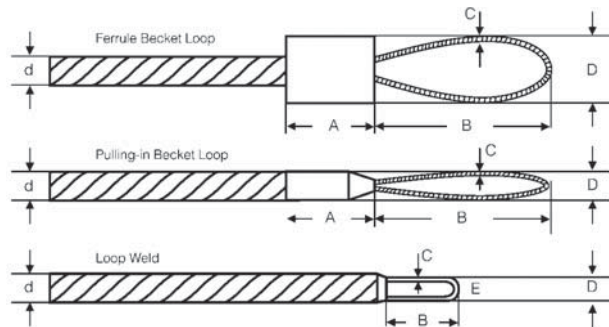
## Rope End Terminations

The wire ropes can be supplied for different types of boom pendants tailored to the particular mining requirement.



## Rope Ends

For ease of installation we can supply a full range of end fittings including becket loops



Testing facility ranging from 100 kN for wire to 10000 kN for rope.



# SAFETY INFORMATION

Any performance specifications are conditional on proper rope diameter, construction & grade of rope tensile; on proper design & maintenance of mechanical equipment on which the wire rope is used and on proper storage, handling, maintenance and periodic inspection of such products during the period of use.

Inspect wire rope and consult industry and equipment manufacturer recommendations before each use. The UML wire rope may not perform as expected if it is damaged, abused, overused or improperly maintained.

All statements, technical information and recommendations contained herein are believed to be reliable, but no guarantee is given as to their accuracy and/or completeness. The user must determine the suitability of the product for his own particular purpose, either alone or in combination with other products and shall assume all risk and liability in connection therewith.

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