

# STEEL CABLE AND SUPERFLEX SLINGS

PRODUCT  
CATALOGUE



**ANDROMEDA**  
**INDUSTRIES**

*"Your first choice in lifting"*



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## ABOUT US

Andromeda Industries established in 1972 by Raymond McLaren is an Australian company manufacturing lifting solutions at our Moonbi NSW facility. We are the exclusive provider of Superflex Cable and Superflex Products distributed across Australia and worldwide.



LEEA Member No #3797



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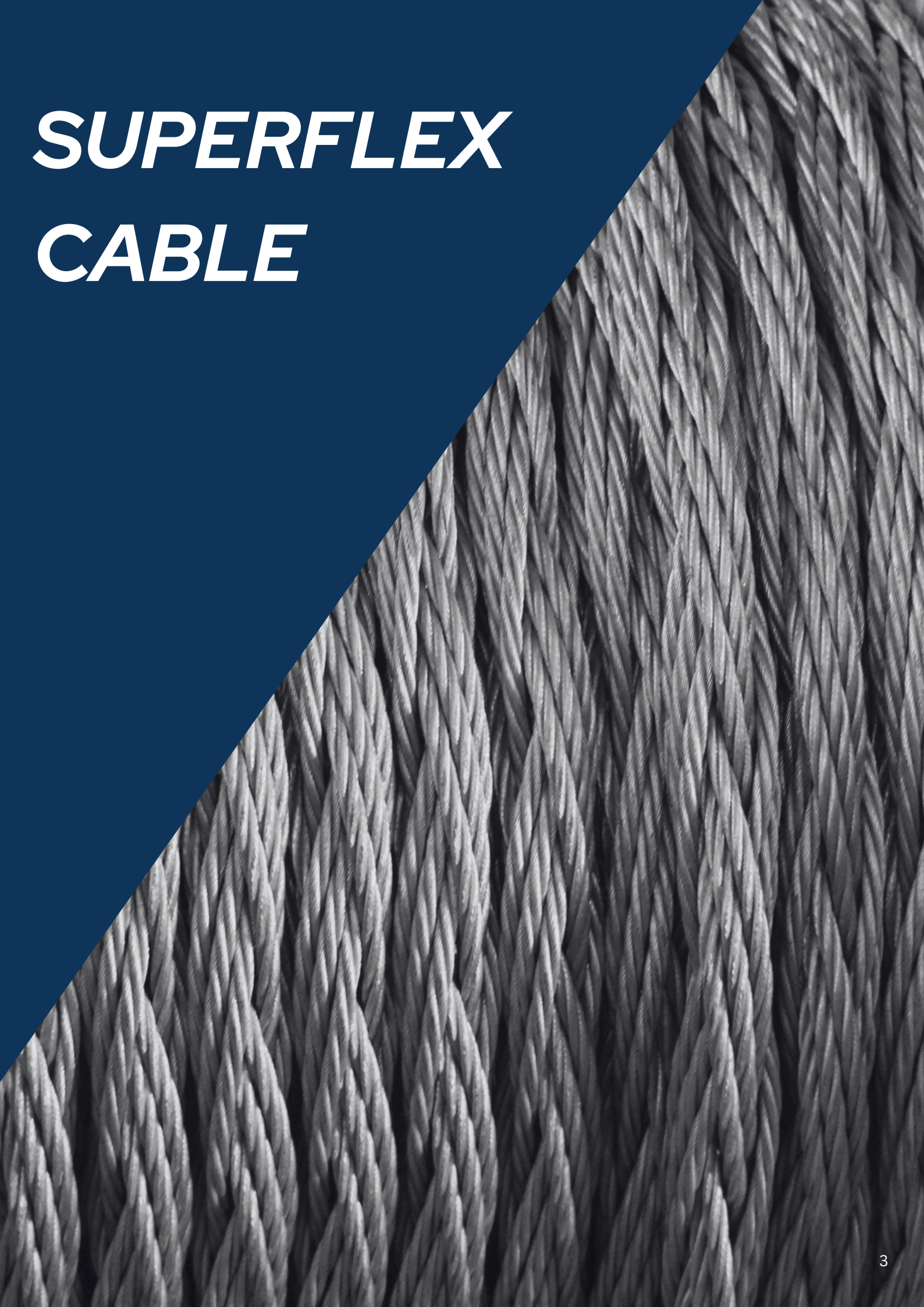


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# ***SUPERFLEX CABLE***



# SUPERFLEX CABLE

Andromeda Industries stands out as the sole producer of Superflex Cable and Superflex Slings. The distinctive plaited structure of this steel cable provides exceptional flexibility, giving it the name Superflex. Unlike conventional cables that are twisted or laid, the plaited design of Superflex distinguishes it from the rest.

Superflex combines the robustness and power of wire rope with the flexibility found in fiber and synthetic slings used in the lifting sector.



Superflex Strop, Size Three-5, with a hand tied knot under tensile load 400kgsf



The same Strop untied from the knot. Note the minimal set remaining in the cable.

Steel slings can be the safest option when it comes to lifting gear. When compared to synthetic slings, steel slings do not lose their tensile capacity over time. Steel slings will visually indicate as a broken strand or abraded wires, corrosion or sets caused by mishandling.

Most Superflex cables comprise 912 individual wires in the cross section. This makes for a cable of great flexibility yet is still tough and practical for general use.

# SUPERFLEX CABLE

## Superflex Basic Physical Parameters and standard ferrules for turnback eyes

Superflex Cable nominal size (D)	Superflex Cable basic physical parameters						Ferrules to EN 13411 (DIN 3093)		
	Minimum Breaking Force (MBF) kN	Mass of cable kg/metre	Nominal Diameter (D) mm	Free Breaking Length	Volume of cable (litres/metre)	Incremental increase in MBF from previous size	Alloy Ferrule nominal size	Alloy Ferrule pressed OD (actually die size)	Estimated press Closing Force needed (tonnes)
Ratio D x			1.0				1.0	2.0	
Two-5	50	0.31	10	16200	0.121	1.66	10	20	50
Three-0	75	0.47	12	16000	0.169	1.5	12	24	72
Three-5	95	0.60	14	15900	0.225	1.27	14	28	100
Four-0	125	0.79	16	15900	0.289	1.31	16	32	130
Four-5	157	1.00	18	15700	0.361	1.25	18	36	160
Five-0	210	1.31	20	16100	0.441	1.33	20	40	200
Five-5	270	1.68	22	16100	0.576	1.28	22	44	240
Six-5	345	2.12	26	15800	0.784	1.26	26	52	340
Eight-0	530	3.37	32	15800	1.30	1.55	32	68	510
Ten-0	790	4.99	40	15700	2.16	1.47	40	84	800
Twelve-0	1110	6.88	48	16100	3.05	1.42	48	96	1150
Fourteen-0	1460	9.38	56	15600	4.10	1.31	56	112	1500
Seventeen-0	2168	13.6	68	15900	6.10	1.48	70 <sub>um</sub>	136	2300
Twenty-0	3015	19.0	80	15900	8.32	1.39	78 <sub>um</sub>	156	3200
TwentyFour-0	4340	27.4	96	15800	12.0	1.43	96	192	4500

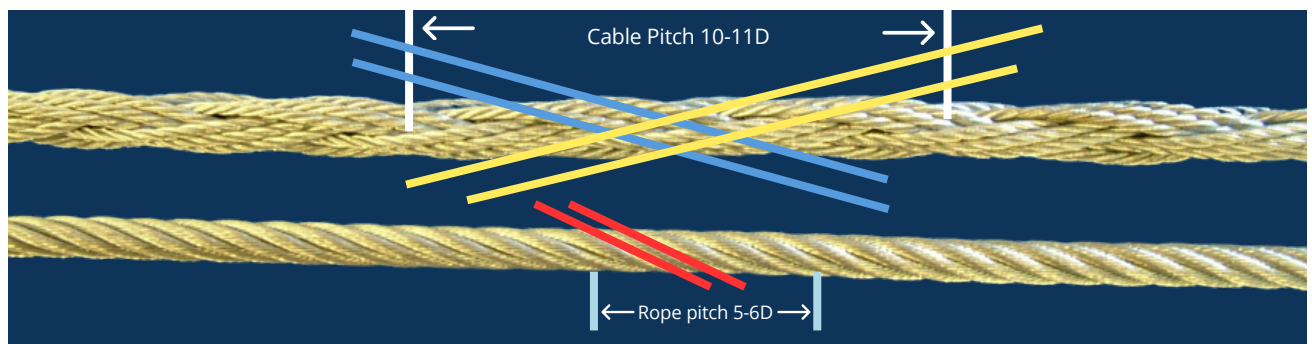
# SUPERFLEX CABLE

This picture below shows the plaited construction of Superflex Cable. The blue lines represent the “Z” lay sets of cords, and yellow lines represent the “S” laysets. The helix angle in both lays is 10 degrees in each direction. The white lines indicate the node points on Superflex where the sets crossover. The distance between the white lines is the cable pitch, usually expressed as a ratio of the cable nominal diameter.

At bottom is ordinary wire rope of 6 x 24 construction. The red lines represent the helix angle that the strands follow in the wire rope, in this case approximately 20 degrees. The light blue lines represent the helical pitch of this wire rope.

As you will see, the helical pitch of Superflex is twice that of ordinary wire rope.

This is one of the main reasons that Superflex demonstrates a high UTS, considering its low mass compared to wire rope.



*A demonstration showing the flexibility of Superflex Cable. Our TwentyFour-0 Superflex cable is 96mm ND and is being coiled onto a standard size pallet.*

# ***SUPERFLEX SLINGS & STROPS***



# SUPERFLEX SINGLE SLINGS

Superflex Single Slings are used for general lifting purposes where a flexible steel sling is needed. Unless otherwise specified all slings are fitted with aluminium ferrules. Steel ferrules can be supplied up to 32mm on request. These slings are designed to provide exceptional durability and strength, making them ideal for a wide range of lifting tasks in various industries.

**Size Range:** 10mm - 96mm  
**Lifting capacity (WLL) in a single fall:** 1 tonne - 84.3 tonne



*Three-5 Superflex Sling fitted with aluminium ferrules*



*Our TwentyFour-0 Superflex Cable being pressed in our 4200 Tonne Talurit Swaging press.*




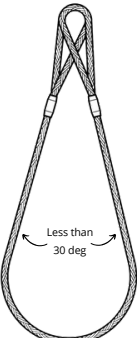
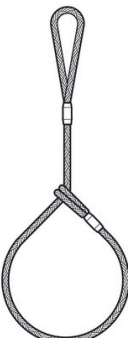
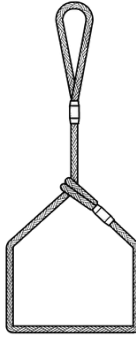
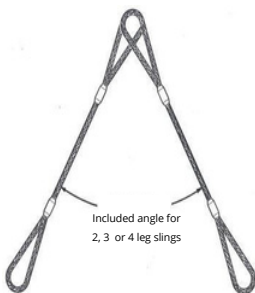
*Two Ten-0 Superflex Single Slings lifting a crane counter weight.*

# SUPERFLEX SINGLE SLINGS

## Working Load Limits For Superflex Single Slings



Superflex Single Slings are used for general lifting purposes where a flexible steel sling is needed. The WLL is shown in the table in tonnes of 1000 kgsf – the standard Factor of Safety is 5

Basic cable details							WLL for various included angles of two, three or four leg slings			
Cable Size or number	Minimum Breaking Force (MBF) kN	Cable nominal diameter (D) mm								
			Single Fall WLL	Cradle lift, angle <30°	Choked on round load	Choked on rectangular load with edge radius > 1.0 D	<30°	60°	90°	120°
Two-5	50	10	1.0	2.0	0.7	0.5	2.0	1.7	1.4	1.0
Three-0	75	12	1.5	2.9	1.1	0.8	2.9	2.6	2.1	1.5
Three-5	95	14	1.8	3.5	1.4	0.9	3.5	3.1	2.5	1.8
Four-0	125	16	2.4	4.7	1.8	1.2	4.7	4.2	3.4	2.4
Four-5	157	18	3.0	5.9	2.3	1.5	5.9	5.2	4.2	3.0
Five-0	210	20	4.1	8.0	3.1	2.1	8.0	7.1	5.8	4.1
Five-5	270	22	5.2	10.2	3.9	2.6	10.2	9.0	7.3	5.2
Six-5	345	26	6.7	13.1	5.0	3.4	13.1	11.6	9.4	6.7
Eight-0	530	32	10.3	20.2	7.7	5.2	20.2	17.8	14.5	10.3
Ten-0	790	40	15.3	30.0	11.5	7.7	30.0	26.5	21.6	15.3
Twelve-0	1110	48	21.6	42.1	16.1	10.8	42.1	37.2	30.3	21.5
Fourteen-0	1460	56	28.3	55.5	21.2	14.2	55.5	49.0	39.9	28.3
Seventeen-0	2168	68	42.1	82.5	31.6	21.1	82.5	72.8	59.4	42.1
Twenty-0	3015	80	58.5	114.7	43.9	29.3	114.7	101.2	82.5	58.5
TwentyFour-0	4340	96	84.3	165.2	63.2	42.1	165.2	145.8	118.9	84.3
Loading factors for various configurations based on the single fall WLL			1.0	1.96	0.75	0.5	1.96	1.73	1.41	1.0

**These WLL figures are derived in accordance with AS 1666.1**

**Notes on these calculations:** to convert the list MBF of Superflex cable in kNs to WLL of a Superflex sling in tonne (1000kgsf) made from that cable, use the following procedure – divide the MBF by 49.05 (9.81 x 5), then multiply this result by 0.95 to allow for the 5% reduction for sling assembly as required by AS 1666.1. (the all up divisor = 51.5) This provides the WLL for a sling in single fall configuration, and from this all the other configurations are calculated.

Please note – figures are rounded to the closest decimal point

# SUPERFLEX STROPS

Superflex Stropps are slings made especially as chokers. They are designed to choke onto and safely lift objects such as poles and piles, steel bars, drill rods and bundles of tube. They are very versatile slings with great gripping power and can often solve lifting problems. Various versions are available. Unless otherwise specified all slings are fitted with aluminium alloy ferrules. Steel ferrules can be supplied up to 32mm on request.

**Size Range:** 10mm - 96mm

**Lifting capacity (WLL) in a single fall:** 1.5 tonne - 126.5 tonne



*Superflex Strop fitted with steel LD ferrules*



*Steel pole lifted by a Superflex Strop as a choker*



*Multiple Stropps used as chokers in 'laydown' of hot aluminium billets.*

Due to the extreme flexibility of Superflex it allows for immense gripping properties without damaging the item being lifted. Superflex Stropps are used to lift bars and poles in vertical orientation even if they are greasy and slippery. They are used in a variety of industries from Aluminium smelters to Power companies erecting power poles.




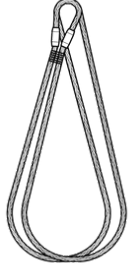

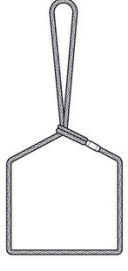
# SUPERFLEX STROPS

## Working Load Limits of Superflex Strops



Superflex Strops are made especially as chokers.

The WLL is shown in tonnes of 1000 kgf – the standard Factor of Safety is 5

Basic cable details			Strop terminated one end only (very slim one end, easy fitting in tight places)						
Cable Size or number	Minimum Breaking Force (MBF) kN	Cable nominal diameter (D) mm							
			Single fall WLL	<30°	60°	90°	120°	Choked on round load	Choked on square load
Two-5	50	10	1.5	2.9	2.6	2.1	1.5	1.1	0.8
Three-0	75	12	2.3	4.5	4.0	3.2	2.3	1.7	1.1
Three-5	95	14	2.7	5.3	4.7	3.8	2.7	2.0	1.4
Four-0	125	16	3.6	7.1	6.2	5.1	3.6	2.7	1.8
Four-5	157	18	4.5	8.8	7.8	6.3	4.5	3.4	2.3
Five-0	210	20	6.1	11.9	10.5	8.6	6.1	4.6	3.0
Five-5	270	22	7.8	15.3	13.5	11.0	7.8	5.9	3.9
Six-5	345	26	10.0	19.6	17.3	14.1	10.0	7.5	5.0
Eight-0	530	32	15.4	30.2	26.6	21.7	15.4	11.6	7.7
Ten-0	790	40	23.0	45.0	39.8	32.4	23.0	17.3	11.5
Twelve-0	1110	48	32.4	63.5	56.0	45.7	32.4	24.3	16.2
Fourteen-0	1460	56	42.5	83.3	73.5	59.9	42.5	31.9	21.3
Seventeen-0	2168	68	63.1	123.7	109.2	89.0	63.1	47.3	31.6
Twenty-0	3015	80	87.8	172.1	151.9	123.8	87.8	65.8	43.9
Twentyfour-0	4340	96	126.5	247.9	218.8	178.4	126.5	94.9	63.3
Loading factors for the various configurations based on the single fall WLL			1.0	1.96	1.73	1.41	1.0	0.75	0.50

### Notes on the WLL figures for strops

The derivation of the WLL for Superflex Strops is based on the WLL for single fall Superflex Slings. For a strop terminated one end only, the factor is 1.5 x the WLL for a single fall sling. Please note – figures are rounded to the closest decimal point

# SUPERFLEX DOUBLE ENDED STROPS

Superflex Double Ended Stropps are designed specifically for use as chokers, offering greater strength compared to single stropps. With lapped eyes at both ends, they can handle higher tonnage loads effectively. Just like single stropps they are designed to safely choke onto like poles and piles, steel bars, drill rods and bundles of tube. Superflex Double Ended Stropps are very versatile slings with great gripping power and can often solve lifting problems. Unless otherwise specified all slings are fitted with aluminium alloy ferrules. Steel ferrules can be supplied up to 32mm on request.

**Size Range:** 10mm - 96mm  
**Lifting capacity (WLL) in a single fall:** 2 tonne - 168.6 tonne



*Our largest 24-0 cable as a Double Ended Strop held up by a forklift*



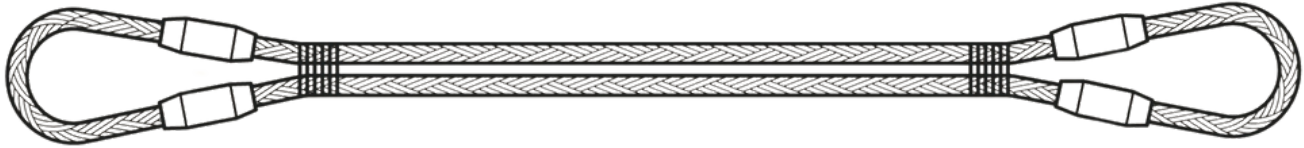
*4 Double Ended stropps lifting a turbine*

When comparing the Double Ended Strop to our Superflex Slings, the Double Ended Strop offers double the lifting capacity with a Working Load Limit (WLL) that is twice that of the Superflex Sling.

This product offers a secure and reliable solution for handling large and complex lifts.




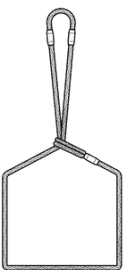
# SUPERFLEX DOUBLE ENDED STROPS

## Working Load Limits of Superflex Double Ended Stropps



Superflex Stropps are slings made especially as chokers. Various versions are available.

The WLL is shown in tonnes of 1000 kgf – the standard Factor of Safety is 5

Basic cable details			Strop terminated both ends						
Cable Size or number	Minimum Breaking Force (MBF) kN	Cable nominal diameter (D) mm							
			Single fall WLL	<30°	60°	90°	120°	Choked on round load	Choked on square load
Two-5	50	10	2.0	3.9	3.5	2.8	2.0	1.5	1.0
Three-0	75	12	3.0	5.9	5.2	4.2	3.0	2.3	1.5
Three-5	95	14	3.6	7.1	6.2	5.1	3.6	2.7	1.8
Four-0	125	16	4.8	9.4	8.3	6.8	4.8	3.6	2.4
Four-5	157	18	6.0	11.8	10.4	8.5	6.0	4.5	3.0
Five-0	210	20	8.2	16.1	14.2	11.6	8.2	6.2	4.1
Five-5	270	22	10.4	20.4	18.0	14.7	10.4	7.8	5.2
Six-5	345	26	13.4	26.3	23.2	18.9	13.4	10.1	6.7
Eight-0	530	32	20.6	40.4	35.6	29.0	20.6	15.5	10.3
Ten-0	790	40	30.6	60.0	52.9	43.1	30.6	23.0	15.3
Twelve-0	1110	48	43.2	84.7	74.7	60.9	43.2	32.4	21.6
Fourteen-0	1460	56	56.6	110.9	97.9	79.8	56.6	42.5	28.3
Seventeen-0	2168	68	84.2	165.0	145.7	118.7	84.2	63.2	42.1
Twenty-0	3015	80	117.0	229.3	202.4	165.0	117.0	87.8	58.5
TwentyFour-0	4340	96	168.6	330.5	291.7	237.7	168.6	126.45	84.3
Loading factors for the various configurations based on the single fall WLL			1.0	1.96	1.73	1.41	1.0	0.75	0.50

### Notes on the WLL figures for stropps

The derivation of the WLL for Superflex Stropps is based on the WLL for single fall Superflex Slings.  
For a strop terminated at both ends, the factor is 2.0 x the WLL for a single fall sling.  
Please note – figures are rounded to the closest decimal point

# LOW DEFORMATION (LD) TERMINATION SYSTEMS

Four basic steel termination fittings have been developed using LD technology:

1. **The LD Ferrule system**, a method to make turn back eyes in Superflex Cables, used in lifting operations in many industries all over Australia.
2. **The U Termination**, a fitting enabling the manufacturer of very thin woven steel slings.
3. **The Superjoiner**, a method to make slim, compact inline joints in Superflex cables for the manufacture of a range of recovery strops used in the open cut mining industry.
4. **The Bifurcated fitting**, a method to make a very compact eye termination in steel, used in the manufacture of Chock winch Ropes for longwall mining operations.

Andromeda's Low Deformation (LD) technology is applied to *turnback eyes* for Superflex Slings and Flat Woven Slings.

This Steel Ferrule system has the following advantages:

- The ferrule is 18% smaller in diameter than equivalent aluminium ones.
- The sling is entirely made of steel, thus it can be used in maritime and caustic environments such as found in alumina smelters, salt water and similar without corrosion to the sling.
- Four inspection holes provide the capability to see the wire ends from any side of the ferrule, as per requirements of AS 1666.
- The ferrule is also tapered at the working end, and chamfered at the throat end; providing a sling that has no sharp edges to snag in tight places.
- The double swage process ensures an extremely secure termination and offers a high resultant strength. It is as secure as a hand splice, but the mechanical joint can deliver a higher ultimate tensile strength (UTS) compared to a splice.
- It enhances mechanical and aesthetic design resolution by offering a central exit point from the ferrule.



Superflex Sling fitted with an LD Ferrule



Steel Ferrules up to 32mm

***DEAN-0***



# DEAN-O

The Dean-O is a special sling designed to be made very short. The structure of this sling provides a single lifting point under Ramshorn Hooks on large cranes. This sling is basically a Double Ended Superflex Strop, middled as in a cradled lift. Each eye of the middled strop sling is then attached to one hook of the Ramshorn.

**Size Range:** Made to requirements - Minimum sizes apply.

**Lifting capacity (WLL) single fall:** 11.0 tonne up to 165 tonne.



80.0t Dean-O



*Dean-O Sling assisting in lifting an undercarriage of an excavator*

A specialty designed sling produced by Andromeda Industries.

These slings can be made very short and creates a single point of load to be attached and still maintain centerline loading.

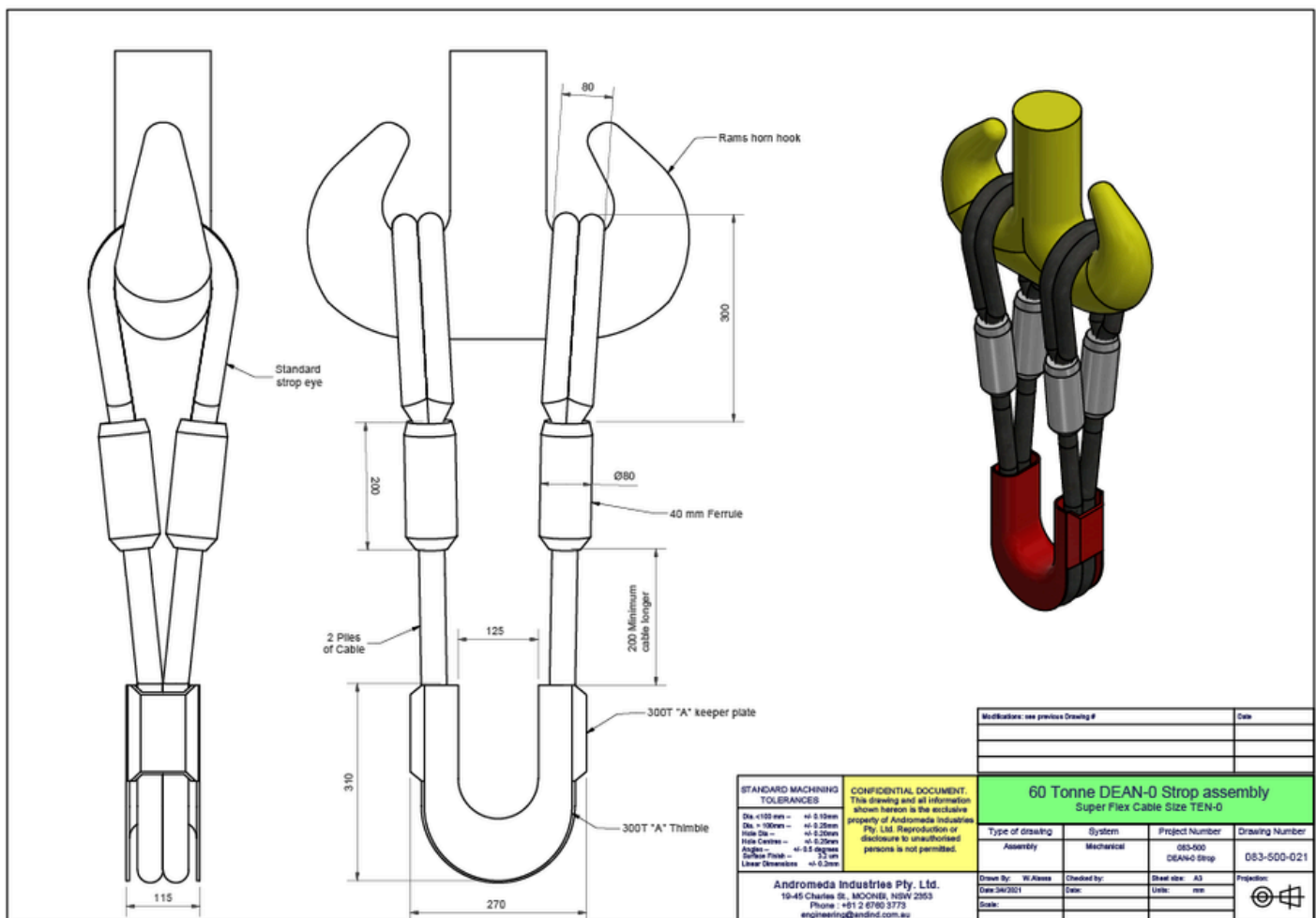
Off-centre loads can cause the Ramshorn Hooks to skew on the rig centerline, potentially damaging the block assembly and wire rope. The Dean-O Sling prevents this from happening.

## Working Load Limits of Dean - 0 Slings

Dean-0 Slings are offered in seven different capacities with the **WLL** of: 11 tonnes, 20 tonnes, 40 tonnes, 60 tonnes, 80 tonnes, 110 tonnes and 165 tonnes.

Suitable master links can be fitted onto and removed from this sling as required.

See below of a detailed breakdown of the construction of our unique Dean-0 Sling.



60.0 t CAD Drawing

CAD drawings of all sizes can be supplied upon request.

# ***FLAT WOVEN SLINGS***



# FLAT WOVEN SLING - TYPE 1 (cradle Lift)

Flat Woven Slings are durable slings, suitable for general lifting tasks that require lower contact pressure. Type 1 Flat Woven slings are designed to cradle a load while lifting.

Available with U termination, lapped eye with ferrules or hand formed soft eye at one end. Unless otherwise specified all Flat Woven slings are fitted with aluminium alloy ferrules. Also available are our LD steel ferrules as fitted to Superflex slings.

**Size Range:** 50mm - 250mm  
**Lifting capacity (WLL) Single fall:** 1 tonne - 48 tonne



*Type 1-G*



*Type 1-A lifting steel coils off a freight ship.*

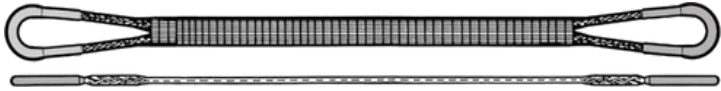




*Type 1-C lifting the top of a swaging press.*

# FLAT WOVEN SLINGS - TYPE 1 (Cradle Lift)

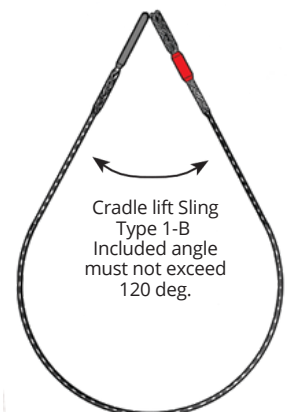
## Working Load Limits of Flat Woven Slings - Type 1

### Type 1 - Cradle Lift Applications - Typical Configurations

Design Number	Graphic representation of sling	Description and usage
1-A		U Termination both ends. This provides the slimmest woven steel sling. Slides easily under loads. Made from machine woven flat cables. For general lifting of bundles of tubes, bars, timber, roofing steel in cradle lift.
1-B		U Termination one end and lapped eye with ferrules on the other end. Economical sling with slim end to slide easily under loads. Made from machine woven flat cable and used for general work. End with ferrules remains on the crane hook during rigging.
1-C		Lapped eye with ferrules both ends. Lowest cost sling where clearances under loads are adequate. Made from machine woven flat cable. For general lifting of steel bars etc. in cradle lift.

### Type 1 - Cradle Lift Standard - WLL - Designs # 1-A, 1-B, 1-C

Size Nominal size of sling = width mm	Woven flat cable					Sling WLL in tonnes			
	24 ply warp, fine cords, 2 ply weft, fine cords					Cradle lift Included angle at the hook			Proof load
	Flat Cable Thickness mm	Generic cord size mm	Weight Kg/m	Woven jacket nom. dia	WLL in single fall kN	<30 deg	60 deg	120 deg	Straight pull in single fall kN
50	5	2.0	0.4	32	10.2	1.9	1.7	1.0	20.4
64	7	2.5	0.6	38	16.0	3.0	2.7	1.6	32.0
76	8	3.0	1.0	52	23.8	4.5	4.0	2.3	47.6
88	10	3.5	1.3	62	31.6	6.0	5.3	3.1	63.2
100	11	4.0	1.6	70	42.5	8.1	7.1	4.1	85.0
112	12	4.5	2.1	76	53.4	10	9.0	5.2	107
125	14	5.0	2.7	102	71.4	13	12	7.0	143
160	17	6.5	4.3	120	114	21	19	11	228
200	20	8.0	6.9	150	170	32	28	17	340
250	25	10.0	10.3	170	255	48	43	25	510





\*Note - Type 1-A & Type 1-B up to 160mm

# FLAT WOVEN SLING - TYPE 1 (cradle Lift)

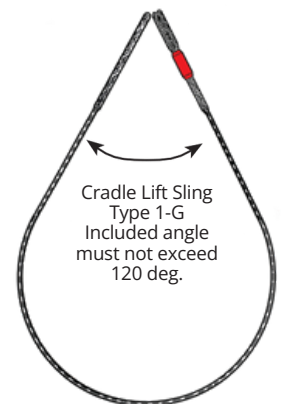
## Working Load Limits of Flat Woven Slings - Type 1

### Type 1 - Cradle Lift Applications - Typical Configurations

Design Number	Graphic representation of sling	Description and usage
1-E	Type 1 Special (1-E, 1-G) hand made 	U Termination one end and hand formed soft eye other end. Very thin sling, the soft eye is useful where clearance between bundles is limited. Hand made form cord feedstock.
1-G		Lapped eye with ferrules one end, and other end hand formed soft eye. Entirely hand made from cord feedstock.

Type 1 - Cradle Lift Special - WLL - Designs # 1-E, 1-G. Hand made flat cables , with a soft eye in one end.

Size Nominal size of sling = width mm	Woven flat cable					Sling WLL in tonnes			
	24 ply warp, fine cords, 2 ply weft, fine cords					Cradle lift Included angle at the hook			Proof load
	Flat Cable Thickness mm	Generic cord size mm	Weight Kg/m	Woven jacket nom. dia	WLL in single fall kN	<30 deg	60 deg	120 deg	Straight pull in single fall
50	5	2.0	0.4	32	9.0	1.6	1.5	0.9	kN 18.0
64	7	2.5	0.6	38	14.1	2.7	2.4	1.4	28.2
76	8	3.0	1.0	52	21.0	4.0	3.5	2.1	42.0
88	10	3.5	1.3	62	28.5	5.4	4.8	2.8	57.0
100	11	4.0	1.6	70	37.5	7.1	6.3	3.7	75.0
112	12	4.5	2.1	76	46.5	8.7	7.8	4.6	93.0
125	14	5.0	2.7	102	63.0	11.8	10.6	6.2	126
160	17	6.5	4.3	120	100	18.8	16.8	9.8	200
200	20	8.0	6.9	150	150	28.2	25.2	14.7	300
250	25	10.0	10.3	170	225	42.3	37.8	22.1	450



\*Note - Type 1-E up to 160mm

# FLAT WOVEN SLINGS - TYPE 2 (Choker Lift)

Heavy-duty slings designed for general lifting tasks that require reduced contact pressure. Type 2 slings are equipped with U Termination, Lapped Eye with ferrules, or Hand Formed Soft Eye options at one end. By default, all Flat Woven Slings feature aluminium ferrules, with the option of our LD steel ferrules as seen on Superflex Slings.

**Size Range:** 50mm - 250mm  
**Lifting capacity (WLL) in a single fall:** 1.7 tonne - 18 tonne

Type 2-W



Type 2-U



Type 2-R FWS displaying the choker usage on a timber reel



Type 2-S FWS lifting a 420kg roll of mining conveyor belt.

# FLAT WOVEN SLINGS - TYPE 2 (Choker Lift)

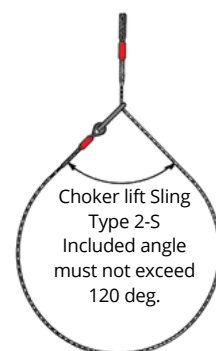
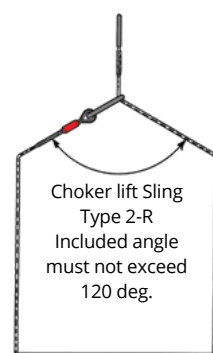
## Working Load Limits of Flat Woven Slings - Type 2

### Type 2 - Choker Lift applications - Typical configurations

Design Number	Graphic representation of sling	Description and usage
2-R		U Termination in reeving end and semi-trapezoidal link in other end. Link fitted with thimbles and ferrules. Made from machine made flat cable. Provides a thin working end for sliding easily under loads. Used for general lifting where a choker lift is needed.
2-S		Lapped eye with ferrules one end, and semi-trapezoidal link other end fitted with thimbles and ferrules. Made from machine made flat cable. Needs more clearance under loads. For general usage where choke hitch is needed.
2-T		U Termination in the reeving end, and trapezoidal link fitted with leather sleeve in the other end. The slimmest of the type 2 slings. Hand made from cord feedstock.
2-U		Lapped eye with ferrules in the reeving end, and trapezoidal link fitted with leather sleeve other end. Hand made from cord feedstock.

### Type 2 - Choker Lift - WLL - Designs # 2-R, 2-S, 2-T, 2-U

Size Nominal size of sling = width mm	Woven flat cable					Slings		
	24 ply warp, fine cords, 2ply weft, fine cords					WLL in tonnes	WLL	Proof Load
	Flat cable thickness mm	Generic cord size mm	Weight Kg/m	Woven jacket nom. dia	WLL in single fall kN	Choked on round load	Choked on square load	Straight pull in single fall
50	5	2.0	0.4	32	10.2	0.7	0.5	20.4
64	7	2.5	0.6	38	16.0	1.2	0.8	32.0
76	8	3.0	1.0	52	23.8	1.7	1.1	47.6
88	10	3.5	1.3	62	31.6	2.3	1.5	63.2
100	11	4.0	1.6	70	42.5	3.1	2.0	85.0
112	12	4.5	2.1	76	53.4	3.8	2.6	107
125	14	5.0	2.7	102	71.4	5.1	3.4	143
160	17	6.5	4.3	120	114	8.2	5.5	228
200	20	8.0	6.9	150	170	12	8.2	340
250	25	10.0	10.3	170	255	18	12	510




\*Note - Type 2-R & Type 2-T up to 160mm only.

# FLAT WOVEN SLINGS - TYPE 2 (Choker Lift)

## Working Load Limits of Flat Woven Slings - Type 2

Type 2 - Choker Lift applications - Typical configurations

Design Number	Graphic representation of sling	Description and usage
2-W		This hand made sling has the original soft flexible eye in one end, and is terminated in the other end with thimbles enclosed in a semi- trapezoidal reeving link. It provides a slim and flexible eye for passing under loads with limited clearance.

Type 2 - Choker Lift - WLL - Designs # 2-W

Size Nominal size of sling = width mm	Woven flat cable					Slings		
	24 ply warp, fine cords, 2ply weft, fine cords					WLL in tonnes	WLL	Proof load
	Flat cable thickness mm	Generic cord size mm	Weight Kg/m	Woven jacket nom. dia	WLL in single fall kN	< 30 deg	60 deg	Straight pull in single fall
50	5	2.0	0.4	32	9.0	0.6	0.4	kN 13.5
64	7	2.5	0.6	38	14.1	1.1	0.7	21.15
76	8	3.0	1.0	52	21.0	1.5	1.0	31.5
88	10	3.5	1.3	62	28.5	2.0	1.3	42.75
100	11	4.0	1.6	70	37.5	2.7	1.8	56.25
112	12	4.5	2.1	76	46.5	3.3	2.3	69.75
125	14	5.0	2.7	102	63.0	4.5	3.0	94.5
160	17	6.5	4.3	120	100.0	7.2	4.8	150.0
200	20	8.0	6.9	150	150.0	10.6	7.2	225.0
250	25	10.0	10.3	170	225.0	15.8	10	337.5

Sling Type 2-W have the WLL 12% lower than types 2-R, 2-S, 2-T and 2-U. This is because of the single ply eye in the working end.

# FLAT WOVEN SLINGS

## General information about Andromeda Flat Woven Steel Slings

Please note that points **3** and **4** relate to Superflex Slings and Strops as well.

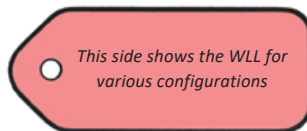
### 1. Ferrules:



All FWS come equipped with aluminium alloy ferrules that meet the EN 13411 standard unless stated otherwise. These ferrules feature chamfers at both ends, designed to facilitate handling in confined spaces, achieved through the use of specialized dies. Additionally, we offer low deformation (LD) steel ferrules found on Superflex Slings.

**2. Protective Jackets:** Flat woven slings can come with a synthetic protective cover upon request. This cover is placed over the woven section of the sling or tailored to precise dimensions, serving as a shield to safeguard against the steel sling and the load being lifted.

### 3. The Tag System:



The standard tags consist of 1.0mm steel and are securely affixed using steel cord swaged into the ferrule. Each tag includes:

- Manufacturer's name (Andromeda)
- Sling size and type (nominal width)
- Working Load Limit (WLL) for different uses
- Test number and date if proof loaded.

These tags are durably and firmly attached.

**4. Proof Loading:** Performed according to AS 1666.1 requirements, these slings are treated as wire rope slings. Typically, this process is done using the sling in a Single Fall configuration and loaded to the specified force indicated in the relevant table. During proof loading, the sling tag will display the Test Number for the batch and the date. The Test Certificate will include the invoice number, applied proof load, test date, declaration of compliance with NATA and AS 1666.1, the WLL of the woven strap, sling size, number of slings in the test series, manufacturer, and the testing facility.

**5. Stainless Steel Slings:** Available in 100mm, typically equipped with copper ferrules, although steel ferrules are an option. Stainless steel ferrules designed to Andromeda's LD system can be custom-made for specific quantities.

**6. U Terminations:** This fitting offers a sturdy and highly durable end point for commonly used slings. Andromeda has developed its manufacturing and assembly techniques. Typically crafted from alloy steel, certain sizes can also be produced in stainless steel.

**7. Nominal Size:** This width is determined by the cord size, for example, 24x3 equals 76. The actual width can fluctuate based on the tightness of the weave, whether it is crafted by hand or machine. Nonetheless, the cable's strength is determined by the cord diameter rather than the sling's width.

# FLAT WOVEN SLINGS

## The effect of small radius corner bends on Andromeda Flat Woven Steel Slings

Even though sharp edges (small radius corner bends) can pose risks to wire slings, there are occasions where they must navigate sharp bends without additional padding. Andromeda Flat Woven Steel Slings are constructed with 24 plies of warp cord running parallel, giving them a slim cross-section that enhances their resistance to damage from tight bends. However, if the bends have a radius smaller than  $1xd$ , a reduction in Working Load Limit (WLL) should be implemented. Refer to the graph below to gauge the WLL reduction for radii less than  $1xd$  (diameter of the warp cord). The table provides the warp cord diameter (d) for different sizes of Flat Woven Slings for your convenience.

Warp cord diameters for Andromeda Flat Woven Steel Slings										
Sling Size	50 mm	64 mm	76 mm	88 mm	100 mm	112 mm	125 mm	160 mm	200 mm	250 mm
Dia of warp cord "d"	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.5	8.0	10.0

In a cradle lift configuration, the Working Load Limit (WLL) is reduced with the assumption that the legs extending to the hook are almost vertical.

The graph illustrates how the WLL decreases when corner radii are less than  $1xd$ , and the sling directly touches the edge without any protective covering. This situation may be required, for example, when lifting steel strip coils from ships. It is important to observe that the highest reduction is 20% when operating on a 0.0mm radius.

# FLAT WOVEN SLINGS

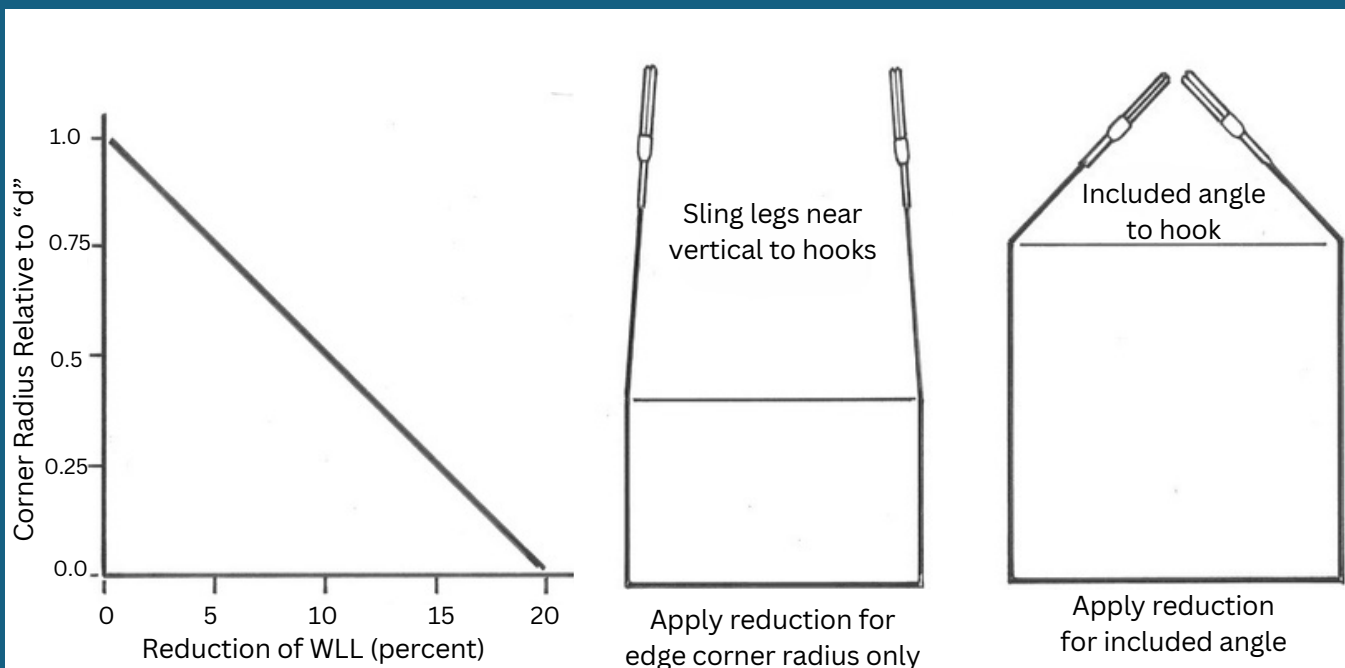
## The effect of small radius corner bends on Andromeda Flat Woven Steel Slings

When a sling experiences a reduction in Working Load Limit (WLL) due to the included angle and another reduction due to small radius bends, the two reductions are not combined. To address this, it is best to consider only the greater reduction, which corresponds to the lower WLL.

For instance, let's take a 100mm wide Flat Woven Sling with a 90-degree included angle wrapped around a steel beam with a 2.0mm corner radius for a cradle lift. In this scenario:

- The standard WLL for this sling in a cradle lift with vertical legs is 8.7 tonnes.
- The WLL for this sling with a 90-degree included angle is calculated as  $8.7 \times 0.7071$  (cosine 45) = 6.15 tonnes.
- The reduction due to the 0.5d radius (2.0mm) is 10%, resulting in a WLL of  $8.7 \times 0.9 = 7.8$  tonnes.

Hence, the applicable WLL in this case is the lower value, which is 6.15 tonnes.



# DISCARD CRITERIA

## Discard Criteria for Superflex Slings and Strops

The decision to discard any sling is the responsibility of the rigger or other persons using it. However, we have set out some guidelines below that may help with this decision making. We generally recommend that Superflex slings be discarded when they show signs of any of the following:

### Mechanical damage

- There are more than the equivalent of one of the small cords (the basic wire ropes comprising the plaited cable) broken at any one location on the sling.
- This is equivalent to 80 broken wires within one cable diameter along the axis
- There are more than 150 broken wires distributed over a length equal to 5 cable diameters.
- There is major scuffing or abrasion on the sides of the ferrules.
- There are signs of heavy impact loads. This will be indicated by crushing or flattening of the sling, although broken wires may not be visible.
- It is known to have been severely overloaded (more than three times its WLL) This may not be obvious on visual inspection.

### Other damage caused by environmental effects:

- Corrosion - Internal corrosion will appear as swelling of the wire cords. This can be caused by immersion in acid baths or similar. External corrosion will appear as discoloration of the zinc coating, usually a flaky white powdery appearance.
- Effects of high temperatures. At temperatures up to about 300 deg C, the steel wires will not lose tensile strength, but the lubricant (petroleum jelly) and the polypropylene cores in each of the small cords will progressively evaporate. This will cause the sling to feel stiff and dry. At higher temperatures, 400 to 500 deg C the steel will be approaching tempering temperatures, and progressive reductions of tensile strength will result. There will be an obvious flaking off of the zinc coating when this has happened. This will lead to rust formation and general degradation.
- Effects of low temperatures. At temperatures below -100 Deg C will reduce the WLL by 25%.

The overall view is that degradation requiring discard is nearly always obvious. This is one of the main advantages of steel slings, and one of the factors that make them so safe to use over long periods of time.

This guide cannot cover all aspects of sling usage, so the main consideration is common sense in usage.

### Discard Criteria for Andromeda Steel Flat Woven Slings:

We generally recommend that these slings be discarded when

- There are more than 2 small cords (the basic wire ropes comprising the woven belt) broken at any one location on the sling.
- There are more than 100 broken wire filaments distributed over a length of strap equal to its width – that is in a square area of the strap.
- Detrimental corrosion is present
- There are signs of heavy impact loads
- It is known to have been severely overloaded
- It has been heated above 400 deg C

# ***DRAW WIRE - PLAITED WIRE ROPE***



# DRAW WIRE (PWR)

Andromeda's Plaited Wire Rope (PWR) is crafted from high tensile wire strands, arranged in a specific four by three sinnet plait configuration. In this design, four sets of three strands each are intertwined using a specialized machine called an Orbital Square Plaiter. With six right laid and six left laid strands, this material maintains torsional equilibrium when under load, creating a non-rotating rope without torque bias throughout its service life.

The strands typically follow a 1 x 19 construction pattern (12 outer, 6 middle, 1 core), offering excellent flexibility and resistance to abrasion. These strands are composed of high tensile wires with a grade of 2070 MPa, providing a high strength-to-weight ratio and fatigue resistance suitable for various applications.



*Visual display to show the configuration of PWR*

## Plaited Wire Rope Applications:

- This product has a variety of uses. One common application is as a Pulling-In Rope during power line construction. It is essential for drawing the conductors into place, earning it the nickname "Draw Wire." Due to the need for long assemblies (sometimes up to 6000 meters connected), the anti-spin characteristic of this material is crucial.
- "Pulling-In Rope" is frequently utilized in underground electrical mains and distribution systems within large buildings or industrial sites. Although shorter lengths are employed, the non-slip feature allows for easy handling on and off storage reels, making it user-friendly during operations.

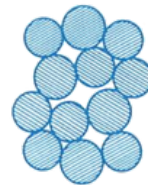
## Sizes Available:

Crafted on-site at Andromeda using special machines created by the founder Raymond McLaren.

(PWR) is available in 10mm, 13mm, and 16mm options.



# PHYSICAL SPECIFICATIONS - standard size range



ANDROMEDA PLAITED WIRE ROPE 2070 MPa

Nominal diameter (mm)	Number and diameter of strands	Mass per hundred meters (Kg)	Standard maximum length (m)	Listed strength	
				kN	Tonnes
<b>10</b>	12 x 2.3	31	3500	<b>61.6</b>	6.3
<b>13</b>	12 x 2.8	51	2600	<b>88.6</b>	9.0
<b>16</b>	12 x 3.5	78	1600	<b>136</b>	13.8

Please be advised that the list above represents a standard size range, and we typically maintain stock of these standard sizes. Other sizes can be produced upon request.

## Testing:

Every Andromeda Rope undergoes two routine tests:

- Prior to the plaiting process, each feedstock strand is destruction tested to ensure that the break force surpasses the specified minimum outlined in Specification No.
- After completion, a sample from each batch of rope is destruct tested to verify that the break force exceeds the stated strength in the provided specifications. The test certificate displays comprehensive information about the rope, such as its unique serial number and actual break force. Purchasers can obtain copies of this test certificate.

# ***RECOVERY STROPS***

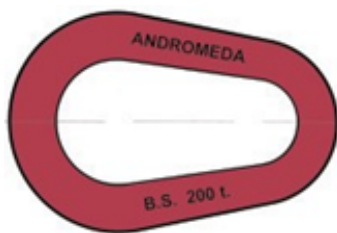
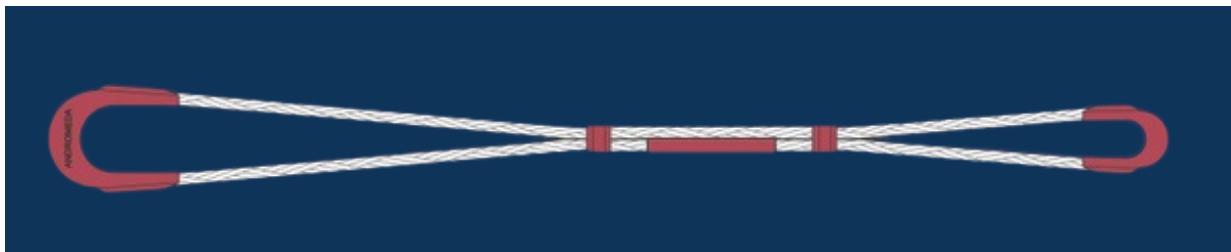
AND SPECIALTY  
SLINGS



# SPECIALITY SLINGS- Recovery Strops

## Recovery Strops

Andromeda Recovery strops are steel slings with high elastic modulus (low stretch) used for mine rescue and machine towing purposes. Our standard recovery strop comes in various sizes and includes "A" and "B" strop thimbles. The "B" thimble is specifically designed to attach to the ripper of a bulldozer, while the "A" thimble is suitable for the towing clevis of dump trucks. Both "A" and "B" thimbles can accommodate bow shackles for connection to other devices.



Cast alloy steel links can be added on request. These links are intended for connecting the Andromeda Recovery Strop into a pin connecting system. The pin in the clevis of the mining truck will usually pass through the smaller and of the cast link.

### Physical Specifications-

Breaking strengths, cable sizes, number of piles and masses for various sizes and lengths of complete assemblies.

Strop Size	Superflex Cable size	Number of piles	Mass of strop assembly Kg				kg/meter for other lengths	Pin dia and mass of alloy bow shackle
			6m	10m	15m	20m		
68	Six-5	2	38	58	75	96	4	38mm 6Kg
100	Eight-0	2	56	80	111	141	6	51mm 14Kg
150	Ten-0	2	108	146	195	243	10	57mm 19Kg
200	Eight-0	4	100	140	210	271	12	63mm 26Kg
300	Ten-0	4	205	282	378	474	20	70mm 38Kg

**Very Short Strops** can be made at lengths down to 1.0m in some sizes. These can be very useful as extension cables attached to high vehicles to facilitate the hooking up process.

# SPECIALITY SLINGS- Recovery Strops

## Recovering Bogged vehicles

<b>Strop Size</b>  (breaking strength in tonnes)	This table represents an approximate guide to the weight of vehicle (GVM in tonnes) that these strops will recover under various conditions. The figures have been calculated for wheeled vehicles 4 x 2 or 6 x 4 axle configurations. The estimates are based on a Factor of Safety of two- that is the load applied to the strop is half of its breaking strength.		
	<b>Level #1</b> incapacity (slippery surface)	<b>Level #3</b> incapacity (severely bogged)	<b>Level #2</b> incapacity (medium bogged)
<b>68</b>	<b>140</b>	<b>45</b>	<b>70</b>
<b>100</b>	<b>200</b>	<b>70</b>	<b>100</b>
<b>150</b>	<b>300</b>	<b>100</b>	<b>150</b>
<b>200</b>	<b>400</b>	<b>140</b>	<b>200</b>
<b>300</b>	<b>600</b>	<b>200</b>	<b>300</b>

**Level #1** - Slippery surface, vehicle unable to move under it own tractive capability because of wet, slippery surface conditions, but not sinking into the ground much. *(Calcs from applied force = 25% GVM)*

**Level #2** - medium Bogged - drive wheels have sunk into the ground about one third of the wheel diameter *(Calcs from applied force = 50% of GVM)*

**Level #3** - seriously bogged - drive wheels have lost all traction and the axle assembly is resting on the ground. *(Calcs from applied force = 66% of GVM)*

## Towing up inclined roadways or ramps

<b>Strop Size</b>  (breaking strength in tonnes)	This table displays the advised GVM for towing up ramps of different inclines with various strop sizes. The calculations are derived from a Safety Factor of two, where the load on the strop is half of its breaking strength. Additionally, a rolling resistance factor of 15% of the GVM is considered.				
	Gradient 1 in 10 Incline 6°	Gradient 1 in 6 Incline 9.5°	Gradient 1 in 5 Incline 11°	Gradient 1 in 4 Incline 14°	Gradient 1 in 3 Incline 18°
<b>68</b>	<b>273</b>	<b>173</b>	<b>144</b>	<b>118</b>	<b>92</b>
<b>100</b>	<b>407</b>	<b>258</b>	<b>215</b>	<b>178</b>	<b>138</b>
<b>150</b>	<b>610</b>	<b>386</b>	<b>322</b>	<b>264</b>	<b>206</b>
<b>200</b>	<b>813</b>	<b>515</b>	<b>429</b>	<b>351</b>	<b>275</b>
<b>300</b>	<b>1220</b>	<b>772</b>	<b>644</b>	<b>527</b>	<b>412</b>

# SPECIALITY SLINGS

## Chock Winch Ropes

These slings are made from durable Superflex Cable with a Steel Bifurcated Fitting and a steel binding ferrule, ideal for underground mining. They are used on Eimco chock moving machines in longwall mining operations, commonly seen in China.

*Available in our Eight-0 and Ten-0 Superflex Cable with lengths of 10.5m and 11.0m*



## Counterweight Slings



The sling is designed to elevate the counterweights for large cranes. Different sizes are created with Superflex Strops connected to a masterlink, while a unique slider link ensures the sling is securely wrapped around the bollards.

Available up to 26.6 tonne.

## Made to Order

**Superflex Cable sizes:** Two-5 - TwentyFour-0 (10ND - 96ND)

**Flat Woven Sling sizes:** 50mm - 250mm

**Stainless Steel Flat Woven Sling sizes:** 100mm

**Aluminium Ferrules sizes:** 2mm - 96mm

**Steel Ferrules sizes:** 10mm - 32mm

Other cable and fittings can be supplied upon request.

At Andromeda, we are proud of our capability to customize solutions to fulfill the specific needs of each customer. For unique or specialized lifting requirements, please reach out to our sales team directly.

Email: [sales@andromedaindustries.com.au](mailto:sales@andromedaindustries.com.au)

Phone: 02 6760 3773

# ***NEW & REPURPOSED RUBBER***

**AND BLASTING  
MATS**



# BLASTING MATS

Designed and constructed by Andromeda Industries, our 'Blastmats' are made from recycled mining conveyor belting combined with a specialty designed eyelet system.

During underground mining activities, Blastmats are placed on the ground to minimize the dispersion of rock fragments above the surface. These mats, made from durable rubber strips woven together, form a robust and resilient product designed to absorb the impact of multiple mining blasts.

The standard format, crafted for effortless lifting, comes equipped with 4 fiber rope handles with a PVC covering for convenient handling. Additionally, the larger Blastmats feature Andromeda's Superflex steel slings, which adhere to relevant Australian Standards.



Picture 1

**Sizes Available:**  
**2000mm x 1500mm**  
**3000mm x 3000mm**  
**6000mm x 3000mm**



Picture 2

Blastmats compact design allows mats to be rolled tightly for efficient transport and shipping. Flush rivet fixings minimise abrasion during transport.



Picture 3

The Blastmats (picture 3) were utilized as a blast curtain in an underground bypass project. Instead of being laid flat, they were hung up, a method that was also proven to be effective.

# NEW & REPURPOSED RUBBER

Andromeda Industries rubber belt division is a top supplier of recycled rubber belts and new rubber matting products in Australia. Our focus is on repurposing used mining conveyor belts to reduce the environmental impact of hard-to-dispose materials.

Our on-site manufacturing produces a range of products from unused conveyor belt rolls. These versatile products are distributed to various sectors as they serve multiple purposes and offer solutions for various tasks.

Our rubber division offers a variety of products suitable for the transport, construction, livestock, equine, and environmental sectors, with over 100 different applications.

## Transport & Construction

The transport and construction sectors demand sturdy and resilient products due to the heavy-duty nature of the work involved. Items like Heavy Load Safety Mats, Woven Fenner Rubber, and Splitbelt are commonly utilized in these environments.



Heavy Load Safety Mats are specifically created to line the trucks' loading ramps. They offer a non-slip surface for loading heavy machinery, safeguarding the truck's surface from damage and wear.

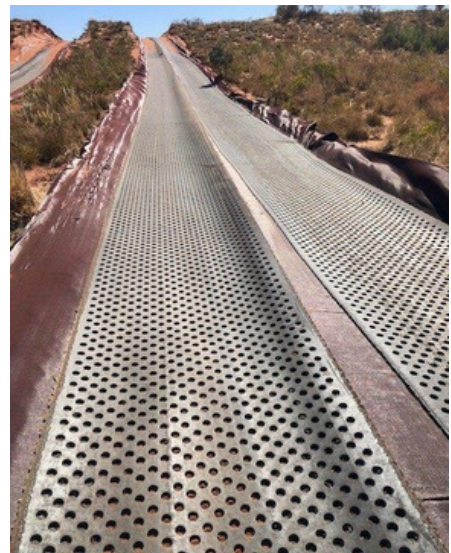
Sizes available:

2300mm x 600mm - Two handles each end

2300mm x 700mm - Three handles each end

## **Vehicle Access**

Envirobelt40 serves as an excellent solution for enabling vehicular or machinery access on wet, slippery, or loose gravel surfaces. It provides a solution for erosion control and is frequently utilized on construction sites that require vehicle access on various surface conditions.



# NEW & REPURPOSED RUBBER

## Ute Matting



Our new ute matting is exceptionally robust, sturdy, and designed to last, making it ideal for work vehicles and utes.

Whether you're transporting heavy equipment, tools, or materials, our matting provides a reliable surface that can withstand the toughest conditions. The non-slip texture ensures that your cargo remains secure during transit, reducing the risk of damage.

## Splitbelt as Shock Mats

Our rubber products have been used in railway construction, specifically as a shock mat as shown on the right. The durability of this product allows it to absorb the force on the railway, minimizing stress and wear on the tracks.



## Equine & Livestock

Our rubber matting products play a significant role in the equine and livestock sectors, with a wide range of applications. These mats are commonly found in arenas, cattle yards, stables, and various other settings.

## Staytight Cattle Cable

Manufactured on-site along with our other wire rope products is our Staytight Cattle Cable. This is a heavy duty fencing cable with a helical twist which allows for recoil when struck by livestock. Available in 6.5mm, 8.5mm & 10mm.



*Take a look at  
our full range*



# ANDROMEDA INDUSTRIES

*"Your first choice in lifting"*



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