

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-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)

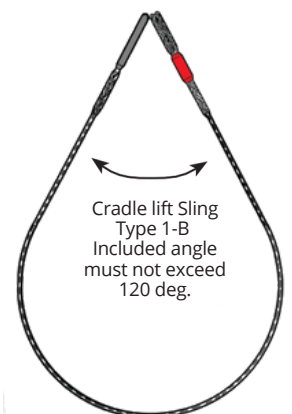
Working Load Limits of Flat Woven Slings - Type 1

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 Straight pull in single fall kN
	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	
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)

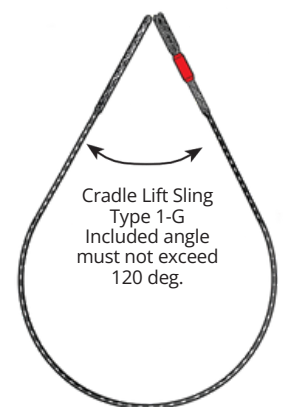
Working Load Limits of Flat Woven Slings - Type 1

Type 1 - Cradle Lift Applications - Typical Configurations

Design Number	Graphic representation of sling	Description and usage
1-E	 <p>Type 1 Special (1-E, 1-G) hand made</p>	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)

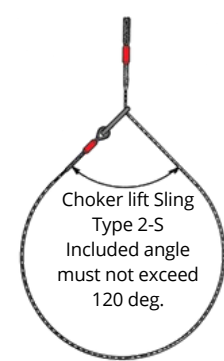
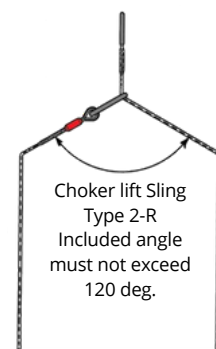
Working Load Limits of Flat Woven Slings - Type 2

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 that 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

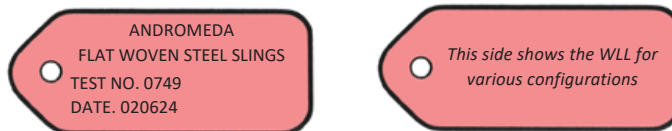
Please note that points 3 and 4 relate to Superflex Slings and Strops as well.

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 8.7×0.7071 (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.

