

SILVERBACK



LIFTING EQUIPMENT CATALOGUE

2022 EDITION



TABLE OF CONTENTS

General Information	3	Lifting Hooks	17
Effects of Sling Angles	4	G80 Self Locking Hook (Eye Type, LE)	17
Care & Maintenance	5	G80 Sling Hook (Eye Type, SE)	17
Flat Webbing Slings	6	Lifting Accessories	18
1 Tonne Flat Webbing Slings	7	Grade S Shackle (Bow Type, Screw Pin)	18
2 Tonne Flat Webbing Slings	7	Grade 80 Master Link (Type SD)	18
3 Tonne Flat Webbing Slings	7	Lifting Accessories & Additional Products	19
4 Tonne Flat Webbing Slings	7	G80 Chain Connector (Type CL) Hammerlock	19
5 Tonne Flat Webbing Slings	7	Wire Rope	20
6 Tonne Flat Webbing Slings	7	6 x 24 Fibre Core Galvanized Wire Rope	20
8 Tonne Flat Webbing Slings	7	Wire Rope Terminology	21
10 Tonne Flat Webbing Slings	7	Pre-Assembled Wire Rope Slings	22
Round Polyester Slings	8	Custom Assembled Wire Rope Slings	22
1 Tonne Round Polyester Slings	9	Wire Rope Slings Safe Working Load Limit Chart	23
2 Tonne Round Polyester Slings	9		
3 Tonne Round Polyester Slings	9		
4 Tonne Round Polyester Slings	9		
5 Tonne Round Polyester Slings	9		
6 Tonne Round Polyester Slings	9		
8 Tonne Round Polyester Slings	9		
10 Tonne Round Polyester Slings	9		
G80 (T) Alloy Lifting Chain	10		
G80 (T) Alloy Lifting Chain (per metre)	10		
Chain Sling Selection	11		
Chain Sling Selection (Cont)	12		
Chain Sling Safety	13		
Chain Sling Safety (Cont)	14		
G80 (T) Chain Sling Safe Working Load Limit Chart	15		
Pre-Assembled G80 (T) Chain Slings	16		
Custom Assembled G80 Chain Slings	16		

Which type of sling should I use?

From the information in this section users can see the wide variety of possibilities available for sling applications. The following factors should be considered in making a selection.

1. Load Mass

This is the most obvious consideration when choosing a sling to lift a given load. The user must ensure a sling is chosen that has the appropriate WLL (Working Load Limit) in the intended configuration to lift the load. Refer to the appropriate sling WLL charts in this brochure or in the relevant Australian standard.

2. Headroom

Where minimum headroom is available, a user should consider:

- Using shorter slings.
- If wire rope slings are used, there is a minimum length allowance in AS 1666 for slings using mechanically swaged eyes.
- Double part grommets may be used.
- Chain slings can be kept to very short lengths.
- Using a lifting beam.
- Increasing the included angle of multiple slings.

3. Frequency of Use - Life of Sling

This will depend on the number of times a sling is used and the manner in which the sling is used.

- Chain slings provide longer life.
- Synthetic slings have special value in some chemically hazardous applications and for protection of the load to be lifted.

4. Type of Load

Chain and conventional wire rope slings are the most appropriate for abrasive surfaces.

Where a positive choking grip is required, round polyester slings or flat webbing slings are the best choice.

5. Cost Versus Efficiency

A wire rope sling is an economical sling per tonne of WLL but after several uses in a choking application wire rope slings develop kinks, which make them more difficult to handle.

For quick, easy and safe handling, Grade 80 (T) chain slings, round polyester slings and flat webbing slings can save many dollars in time and reduce injury.

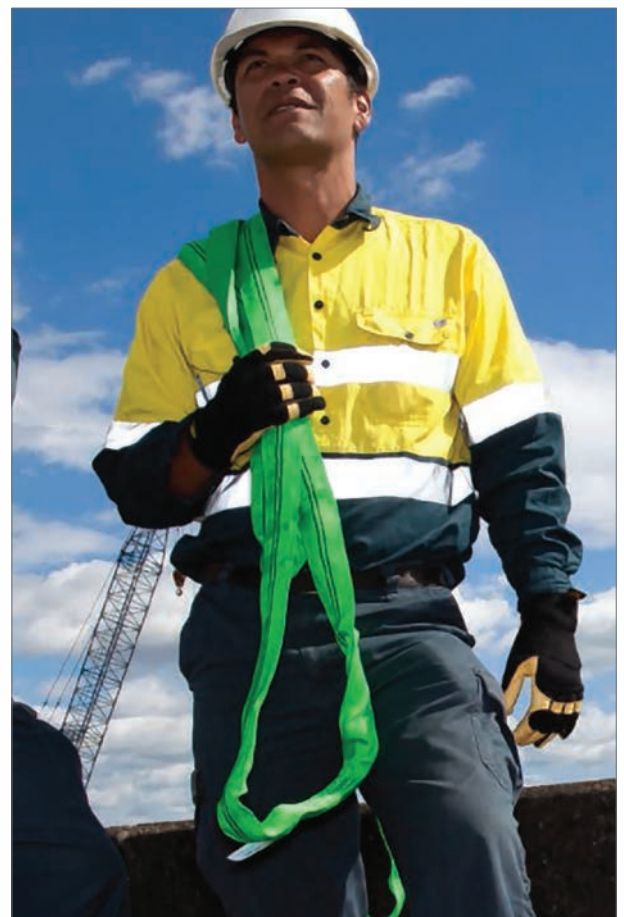
6. Length of Sling

Cost per metre is very relevant in long slings and wire rope is generally the most economical option in these circumstances.

7. Method of Slings

Where slings are shackled to lifting points in a multi-leg application, wire rope and chain slings are the most suitable. Where choking of the load is required synthetic Round and Webbing slings are generally the most efficient, though in special applications where abrasive surfaces are prevalent or in hauling logs Grade 80 (T) chain slings are much more suitable.

If shortening of sling legs is required in multi-leg applications, Grade 80 (T) chain slings with grab or shortening hooks are the best option.



8. Environment

In a corrosive situation ferrule secured flemish eyes should be considered for wire rope slings.

Aluminium ferrules are not appropriate in some mining areas or alumina refineries.

Where acids and alkalis are prevalent webbing slings are beneficial. Grade 80 (T) slings and webbing slings will be affected by temperatures above 200° C. Wire rope slings used near heat should have a steel core in the wire rope.

9. Available Storage for Slings

All slings are best stored vertically so their length and condition can be readily inspected. There is also less chance of water or corrosion damage and mechanical damage. The WLL of each sling can also be readily ascertained.



Caution

- Slings should always be used in line with good rigging practice and as per the manufacturers recommendations.
- Incorrect sling use could result in a dangerous situation that could cause property damage, serious injury or death.
- Increasing the angle of multiple leg sling assemblies de-rates the sling. Therefore higher capacity slings will be required.
- Never use a sling with an angle in excess of 120°.

Effects of Sling Angles

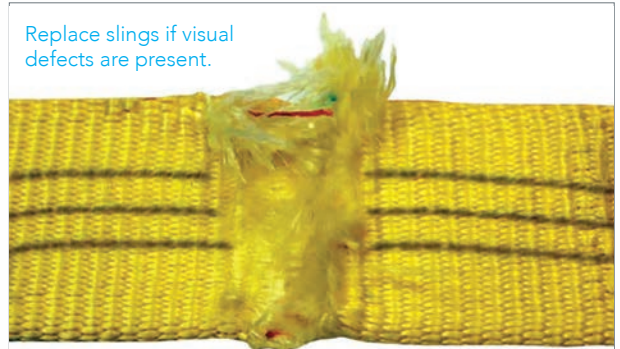
- Sling capacity changes as angle changes.



Discard Criteria

Slings shall be immediately discarded if they are found to have any of the following faults:

1. The label of the sling is missing or is illegible, and the sling cannot be positively identified.
2. Whenever a sling has lost 10% or more of its minimum breaking strength. If there is any doubt as to the strength of the sling a method of establishing its loss of strength is given by Clause 9.4.2 of AS 1353.2.
3. Any of the load bearing fibres are damaged. Any damage to a cover indicates potential damage to the load bearing webbing. Such damage may be in the form of surface chafe or cuts in the cover. Any cuts in the cover should raise serious doubts as to the integrity of the load bearing webbing. Fibres of a protective cover that are fused or glazed indicates that the sling has been excessively heated (e.g. by friction in a choke hitch, by externally applied heat).
4. Chemicals have caused any damage (e.g. local weakening, softness of the cover, flaking of surface fibres). In such cases, damage to the load bearing webbing should be assumed.
5. Any coupling components or fittings are distorted, cracked, fractured or excessively worn or corroded.
6. If any other dangerous condition is confirmed.



Care In Use

Repairs

The standard does not permit repairs to load-bearing webbing of a sling, but manufacturers may replace labels and repair removable covers. Any repaired slings shall be proof load tested before being returned to service.

FLAT WEBBING SLINGS

Flat polyester webbing slings are the ideal lifting, towing and pulling solution. Unlike chains or ropes which can be heavy and inflexible, webbing straps are the perfect solution for lifting, handling and recovery on the go.

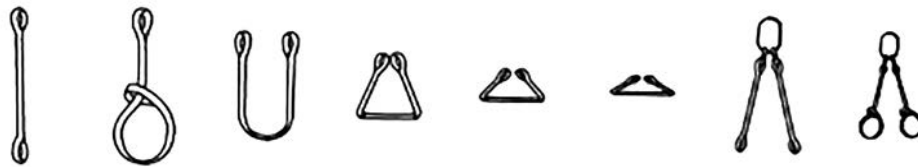
All our flat lifting slings are tested on a 8:1 breaking strain factor for safety and have date of manufacture, serial number, safety certification and safe working load limits on the attached label.

Inspection Before Use

The following signs of damage should be looked for during inspections.

1. External wear – caused by dragging over rough surfaces causes an opening out of surface fibres (with a furry appearance). The outer faces of the webbing may become so worn that yarns in the weave are severed. The label may become damaged.
2. Local abrasion – Local abrasion will be caused by movement over sharp edges while the sling is under tension, which will result in a loss of strength.
3. Cuts and contusions – may be indicated by local rupturing or loosening of the yarns.
4. Internal wear – will be caused by repeated flexing, particularly when particles of grit or dirt have penetrated the fibres. The presence of grit or dirt may indicate internal wear.
5. Damage to protective coating or sleeve – Any damage to a protective coating or sleeve can allow damage to the sling.
6. Damage from high temperatures – High temperatures can result from a hot environment, radiation or friction. High enough temperatures will cause fusing or shrinkage of synthetic webbing. Fusion is able to occur at temperatures approximately equal to the melting point of the polymer from which the fibres have been made.
7. Sunlight degradation – Prolonged exposure to ultraviolet radiation (including sunlight) of any textile fibres will weaken the fibres. Degradation may be indicated by a hairy appearance of fibres.
8. Chemical attack – Chemical attack is usually indicated by the local weakening or softening of the webbing material. In some cases it may cause some stiffening of the sling. In extreme cases surface fibres are reduced to powder.
9. Label damage
10. Deterioration of stitching
11. Damage of any eyes
12. Damage at the connection to any terminal attachment
13. Damage to any end fittings

FLAT SLINGS
COMPLY TO AS1353.1



COLOUR CODE	L - LOAD FACTOR								
	W.L.L (TONNES)	VERTICAL W.L.L (TONNES)	CHOKE S.W.L (TONNES)	BASKET S.W.L (TONNES)	60° S.W.L (TONNES)	90° S.W.L (TONNES)	120° S.W.L (TONNES)	60° S.W.L (TONNES)	60° CHOKE S.W.L (TONNES)
Violet	1.0	1.0	0.8	2.0	1.73	1.41	1.0	1.73	1.38
Green	2.0	2.0	1.3	4.0	3.46	2.82	2.0	3.46	2.76
Yellow	3.0	3.0	2.4	6.0	5.19	4.23	3.0	5.19	4.14
Grey	4.0	4.0	3.2	8.0	6.92	5.63	4.0	6.92	5.52
Red	5.0	5.0	4.0	10.0	8.65	7.05	5.0	8.65	6.90
Brown	6.0	6.0	4.8	12.0	10.38	8.46	6.0	10.38	8.28
Blue	8.0	8.0	6.4	16.0	13.84	11.28	8.0	13.84	11.40
Orange	10.0	10.0	8.0	20.0	17.30	14.10	10.0	17.30	13.80



1 Tonne Flat Webbing Slings

- Colour code: Violet.
- Safe working load limit 1000kg.

P/N:	41000	41001	41002	41003	41004	41006	41008	41010	41012	41014	41016
L (M)	1	1.5	2	2.5	3	4	5	6	7	8	9



2 Tonne Flat Webbing Slings

- Colour code: Green.
- Safe working load limit 2000kg.

P/N:	41050	41051	41052	41053	41054	41055	41056	41058	41060	41062	41064	41066	41068
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	7	8	9	10



3 Tonne Flat Webbing Slings

- Colour code: Yellow.
- Safe working load limit 3000kg.

P/N:	41100	41101	41102	41103	41104	41105	41106	41108	41110	41114	41118
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10



4 Tonne Flat Webbing Slings

- Colour code: Grey.
- Safe working load limit 4000kg.

P/N:	41150	41151	41152	41153	41154	41155	41156	41158	41160	41162	41164	41168
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	7	8	10



5 Tonne Flat Webbing Slings

- Colour code: Red.
- Safe working load limit 5000kg.

P/N:	41200	41201	41202	41203	41204	41205	41206	41208	41210	41214	41218
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10



6 Tonne Flat Webbing Slings

- Colour code: Brown.
- Safe working load limit 6000kg.

P/N:	41250	41251	41252	41253	41254	41255	41256	41258	41260	41264	41268
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10



8 Tonne Flat Webbing Slings

- Colour code: Blue.
- Safe working load limit 8000kg.

P/N:	41350	41351	41352	41353	41354	41355	41356	41358	41360	41364	41368
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10



10 Tonne Flat Webbing Slings

- Colour code: Orange.
- Safe working load limit 10000kg.

P/N:	41450	41451	41452	41453	41454	41455	41456	41458	41460	41464	41468
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10

ROUND POLYESTER SLINGS

A round polyester sling has a few key advantages over other lifting or towing solutions, such as chains or ropes. Heavy duty polyester is suitable for bearing high working loads, while being much lighter and much more flexible than the alternatives. This makes it ideal for portable applications. Each of our round polyester slings are approved with a 7:1 breaking strain factor and are individually shrink wrapped. Information such as manufacturing date, serial number, safe working load limits and safety certification within the packaging.

Round polyester slings are suitable for lifting, pulling and towing tasks. All products are colour coded to Australian Standards making them easy and safe to quickly identify. The measured length for round polyester slings is the length stretched out (EWL), not the circumference, so for example a 1 metre sling would be 2 metre circumference.

Silverback supply round polyester slings ranging in lengths from 1 metre to 10 metres and from 1 tonne to 10 tonne capacity.

These slings are fabricated using 100% high tenacity polyester yarn and wound in a continuous hank to form an endless sling. A durable and specially woven, 100% polyester non-load bearing tubular sleeve to give maximum wear protection to the yarn hank. Conforms to Australian standard AS4497.1

Inspection Before Use

Every time a sling is to be used, the user must be satisfied that the sling does not show any signs of damage that could affect its safe use.

Slings shall be withdrawn from service immediately if they sustain any of the following faults:

1. The cover has been damaged.
2. The stitching has been damaged.
3. The label of the sling is missing or is illegible, and the sling cannot be positively identified.
4. Any of the load bearing fibres are damaged. Any damage to a cover indicates potential damage to the load bearing core. Any cuts in the cover should raise serious doubts as to the integrity of the load bearing core. Fibres of a protective cover that are fused or glazed indicates that the sling has been excessively heated (e.g. by friction in a choke hitch, by externally applied heat).
5. Chemicals have caused any damage (e.g. local weakening, softness of the cover, flaking of surface fibres). In such cases, damage to the load bearing core should be assumed.
6. Any coupling components or fittings are distorted, cracked, fractured or excessively worn or corroded.
7. If any other dangerous condition is confirmed.

ROUND POLYESTER
SLINGS
COMPLY TO AS4497.1



COLOUR CODE	L - LOAD FACTOR		L - 1.0		L - 0.8		L - 2.0		L - 1.7		L - 1.4		L - 1.0		L - 1.7		L - 1.38	
	W.L.L (TONNES)	VERTICAL W.L.L (TONNES)	CHOKE S.W.L (TONNES)	BASKET S.W.L (TONNES)	60° S.W.L (TONNES)	90° S.W.L (TONNES)	120° S.W.L (TONNES)	60° S.W.L (TONNES)	60° CHOKE S.W.L (TONNES)	60° S.W.L (TONNES)	90° S.W.L (TONNES)	120° S.W.L (TONNES)	60° S.W.L (TONNES)	60° CHOKE S.W.L (TONNES)				
Violet	1.0	1.0	0.8	2.0	1.73	1.41	1.0	1.73	1.38									
Green	2.0	2.0	1.3	4.0	3.46	2.82	2.0	3.46	2.76									
Yellow	3.0	3.0	2.4	6.0	5.19	4.23	3.0	5.19	4.14									
Grey	4.0	4.0	3.2	8.0	6.92	5.63	4.0	6.92	5.52									
Red	5.0	5.0	4.0	10.0	8.65	7.05	5.0	8.65	6.90									
Brown	6.0	6.0	4.8	12.0	10.38	8.46	6.0	10.38	8.28									
Blue	8.0	8.0	6.4	16.0	13.84	11.28	8.0	13.84	11.40									
Orange	10.0	10.0	8.0	20.0	17.30	14.10	10.0	17.30	13.80									



1 Tonne Round Polyester Slings

- Colour code: Violet.
- Safe working load limit 1000kg.

P/N:	42000	42001	42002	42003	42004	42006	42008	42010	42014
L (M)	1	1.5	2	2.5	3	4	5	6	8



2 Tonne Round Polyester Slings

- Colour code: Green.
- Safe working load limit 2000kg.

P/N:	42050	42051	42052	42053	42054	42055	42056	42058	42060	42064	42068
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10



3 Tonne Round Polyester Slings

- Colour code: Yellow.
- Safe working load limit 3000kg.

P/N:	42100	42101	42102	42103	42104	42105	42106	42108	42110	42112	42114	42118
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	7	8	10



4 Tonne Round Polyester Slings

- Colour code: Grey.
- Safe working load limit 4000kg.

P/N:	42150	42151	42152	42153	42154	42155	42156	42158	42160	42164	42168
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10



5 Tonne Round Polyester Slings

- Colour code: Red.
- Safe working load limit 5000kg.

P/N:	42200	42201	42202	42203	42204	42205	42206	42208	42210	42214	42218
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10



6 Tonne Round Polyester Slings

- Colour code: Brown.
- Safe working load limit 6000kg.

P/N:	42250	42251	42252	42253	42254	42255	42256	42258	42260	42264	42268
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10



8 Tonne Round Polyester Slings

- Colour code: Blue.
- Safe working load limit 8000kg.

P/N:	42350	42351	42352	42353	42354	42355	42356	42358	42360	42364	42368
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10



10 Tonne Round Polyester Slings

- Colour code: Orange.
- Safe working load limit 10000kg.

P/N:	42450	42451	42452	42453	42454	42455	42456	42458	42460	42464	42468
L (M)	1	1.5	2	2.5	3	3.5	4	5	6	8	10

G80 (T) ALLOY LIFTING CHAIN

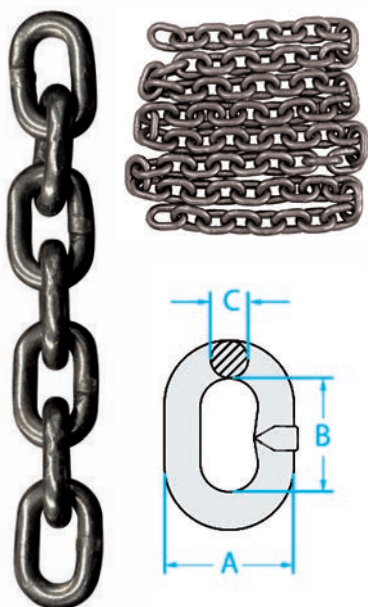
Grade 80 (T) chain is designed for industrial lifting applications. Made from alloy steel, hardened and tempered. It has a high resistance to impact and meets critical requirements of AS2321 for "short link chain for lifting purposes".

It's also excellent for uses such as recovery, safety, and towing chains and is becoming more common in the flatbed trucking industry to secure heavy duty industrial loads. As these particular types of chain assemblies are generally equipped with a lower rating clevis grab hook, these types of restraint tie-down chain assemblies are not approved for overhead lifting.

Bulk quantities are available by the drum, by the half drum, or in lengths by the metre.

Using Grade 80 (T) Lifting Chain

- For industrial lifting.
- Self coloured (black).
- Made to Australian Standards.
- High tensile.
- Price per metre.
- Can also be used for lashing although these assemblies are generally equipped with lower rating hooks, so are not fit for lifting.



G80 (T) Alloy Lifting Chain (per metre)

Grade 80 (T) chain is designed for chain slings for industrial lifting applications. It is made from hardened and tempered alloy steel. It has a high resistance to impact and meets critical requirements of AS2321 "short link chain for lifting purposes".

- Marked with chain grade and traceability mark.
- Made from G80 alloy steel with safety factor of 4 to 1.
- Test certificates available upon request.
- Conforms to AS2321.

P/N:	CHAIN SIZE (mm)	WLL (T)	DIMENSIONS		
			A (mm)	B (mm)	C (mm)
43101	6	1.12	21	18	6
43121	8	2	28	24	8
43140	10	3.15	35	30	10
43160	13	5.3	46	39	13
43139	Other sizes available upon request.				

Additional Products

Other items within heavy duty lifting chain are available on request. P/N: 43139



G80 yellow powder coated alloy chain. Available in 8mm, 10mm & 13mm.

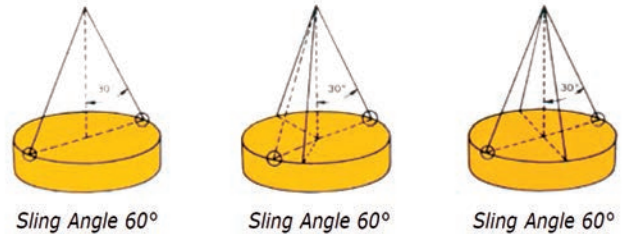


G30 (L) Chain. Available from 6mm to 22mm.



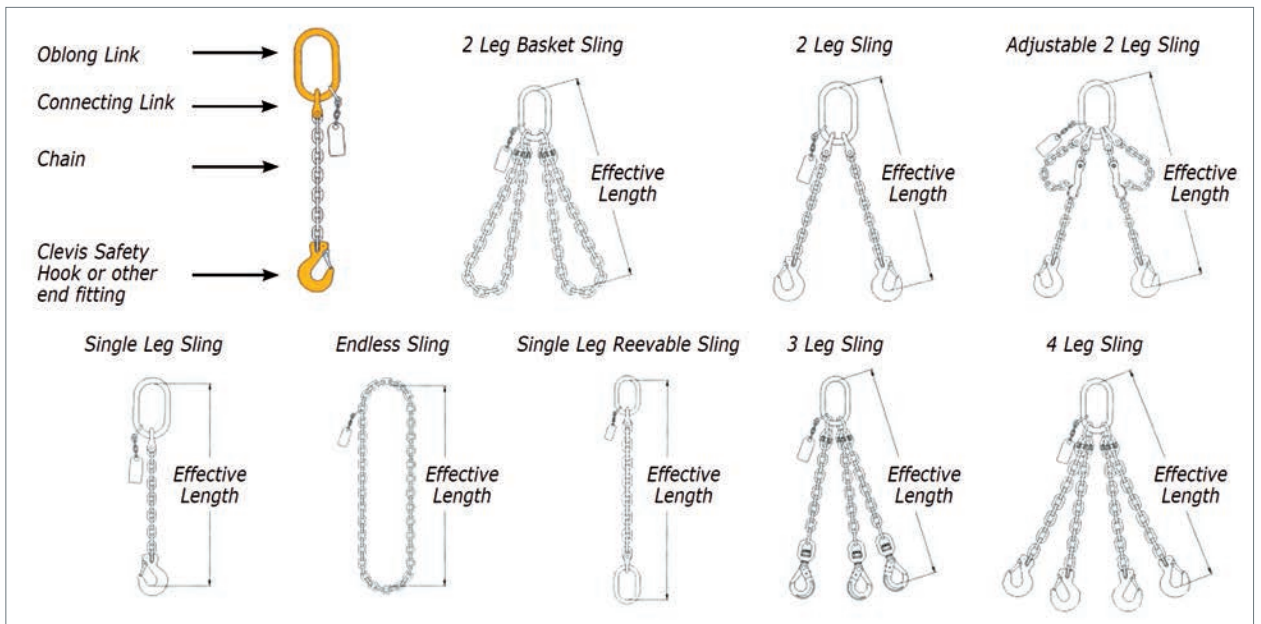
Geometry

The geometry of the sling is the number of chain legs of multi-leg slings and the angles between the legs and vertical. When calculating angles the apex of the angles should not include the length of the oblong link or master link.



Types of Chain Slings

With the exception of endless slings as described below the configurations are based on sling legs. The most commonly used chain assemblies are illustrated here but also illustrated are special assemblies that may be devised for lifting specific or unusually shaped loads.



Sling Selection

The following factors should be considered before making a selection:

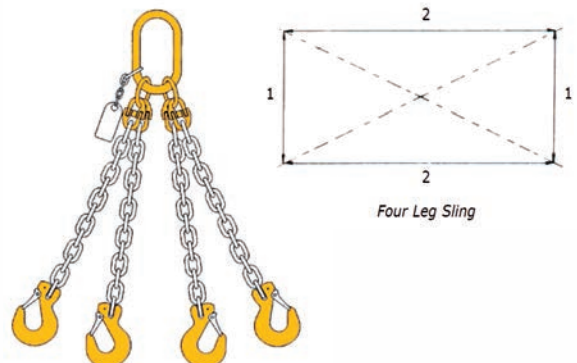
1. Load – mass
2. Headroom
3. Type of load – steel, shipping containers, timber, fabricated sections or vessels
4. Length of sling
5. Method of slinging
6. Environmental elements such as corrosion or heat

Calculation of Working Load Limit

The sling chart details the working load limit for each size. (See page 15).

Multi-Leg Slings

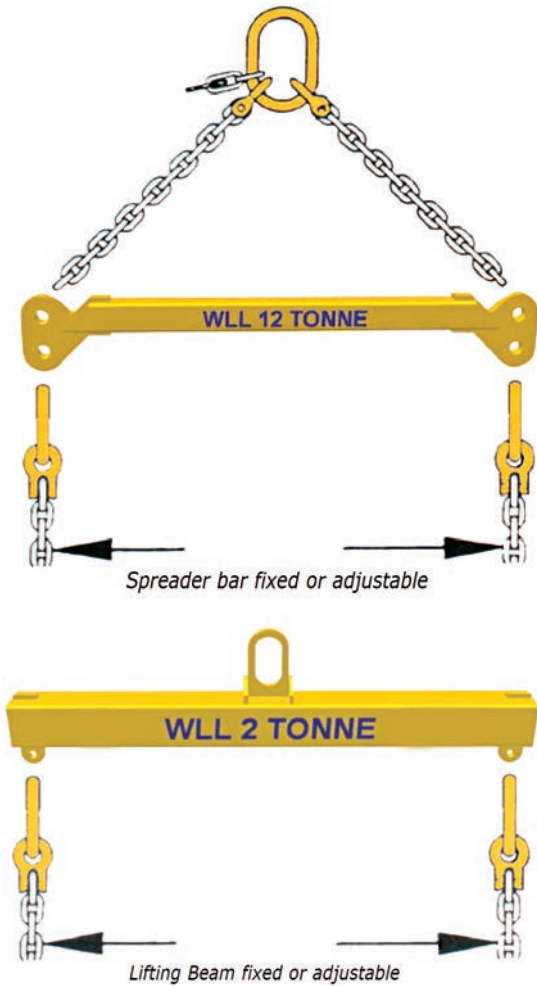
The WLL of slings comprising two or more legs shall not be more than the calculated WLL of the sling while it is supporting the load with two of its legs having a symmetrical configuration with an angle between the two legs of 60°. The angle shall never be greater than 120°.



Headroom & Special Slinging Methods

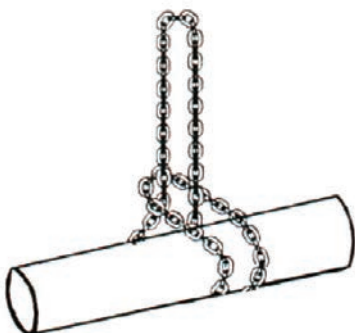
Use of lifting beams or spreader beams assists in overcoming headroom problems and these can be purpose built to comply with all relevant standards and regulations.

Any special method of use should be approved and tested in the manner in which it is to be used.



Endless Slings

An endless sling shall never have a working load limit greater than 1.5 times the WLL of a single leg sling.



Reeved Slings

In the examples shown the WLL shall not be greater than 0.75 times the WLL of the chain to which it is attached.



Adjustable Slings Using Shortening Clutches

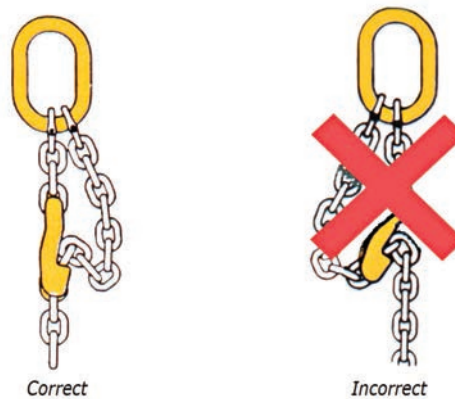
Shortening clutches in multi-leg slings will adjust the leg length but care must be taken to ensure that no one leg is overloaded as a result. Bear in mind that if the legs are not equally disposed about vertical, the leg making the smallest angle to the vertical will carry a larger share of the load.

Shortening clutches are the preferred devices for adjusting leg length as they maintain the correct 'in line loading' of the chain so that the rating is not affected.

Some grab hooks that lock onto a link of the chain for this purpose require a 25% deration. Cradle grab hooks, which fully support the chain link, do not require a deration.

Shortening clutches **MUST** be used correctly with the load bearing chain always leading out from the bottom of the clutch. (See illustrations below for correct and incorrect usage.)

Use of shortening hooks in adjustable slings



Protection

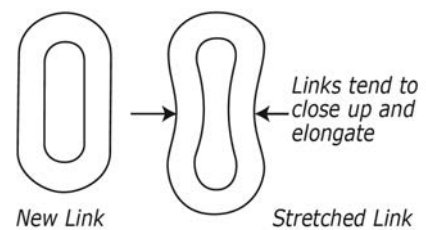
Special loads also may require protection and Silverback can provide various means to protect loads from marking or damage during lifting.

Inspection Before Use

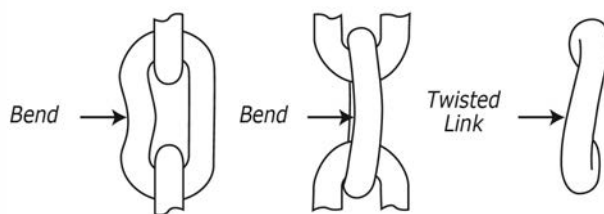
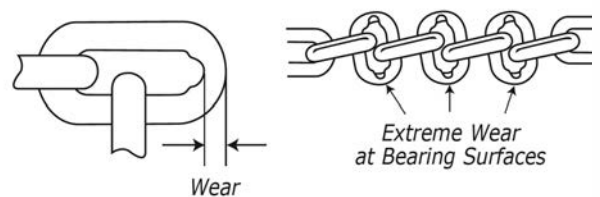
The pre-use inspection for chain slings should take note of the following:

1. Clean sling before inspection.
2. Ensure the sling is correctly tagged and certified.
3. Every chain link should be individually inspected for any signs of wear, twisting, stretching, nicks, gouging, heat damage, chemical attack or excessive corrosion.
4. Any worn links should be measured to determine the degree of wear, which should not exceed 10% in any plane.
5. Upper and lower terminal links, hooks, etc. should be inspected for any signs of distortion, e.g. widening of any hook throat opening.
6. Connecting links or chain connectors should be inspected for any signs of wear at their load-bearing points and for any excessive play of the load pin.

7. Wear may be tolerated until the thickness of any worn section has been reduced by 10% of the nominal section in any plane.
8. Chain links or fittings having any defects should be clearly marked to indicate rejection, and the sling should be withdrawn from service until properly repaired.
9. Slings with damaged fittings may be repaired by replacing the fittings but the entire chain assembly must be proof load tested before being returned to service. Any damaged chain must be destroyed.



Look for Chain Stretch



Examine all Chain Links





Care In Use

1. The operator should establish the weight of the load to be lifted as accurately as possible.
2. Ensure that the crane or other lifting equipment and the lifting points are adequate to lift the load.
3. Prepare the site where the load is to be landed in advance. Ensure that the sling is not trapped by the load in such a way that removal of the sling cannot be made by hand.
4. Check compatibility of the chain sling to the crane hook and the lifting points on the load.
5. Ensure the chain is free from twists and is protected from any sharp corners on the load.
6. Ensure the load is evenly distributed on all sling legs. This can be facilitated through the use of shortening hooks.
7. When using a choke hitch, the bite should be allowed to assume its own position.
8. Commence the lift slowly, taking up the slack gradually.
9. Care must be taken to ensure that the load remains stable throughout the lift.
10. A trial lift should be made prior to the full lift operation. If the load is not balanced it should be lowered and the slings re-positioned.
11. Sling hooks of a multi-leg sling should be positioned so that they face outward from the load.

Storage & Handling

- Chain slings should be kept on a properly designed rack in a clean, dry place.
- Lightly oil slings before any prolonged storage.

Heat

As the temperature which a sling attains in-service increases, its strength decreases. Care must be taken to account for the maximum temperature that can be reached by the sling in service.

Temperature Conditions

-10°C up to 200° C No reduction in WLL

200°C up to 300°C Reduce WLL by 10%

300°C up to 400°C Reduce WLL by 25%

Do not use above 400°C

The use of a sling within these temperature ranges does not imply any permanent reduction in strength when the sling is returned to normal temperatures. If slings are accidentally exposed to temperatures indicated in excess of the maximum permissible temperatures indicated above, they should be withdrawn from service.

Acidic Conditions

Silverback Grade 80 (T) slings shall not be used in acidic solutions or in any other corrosive environment.

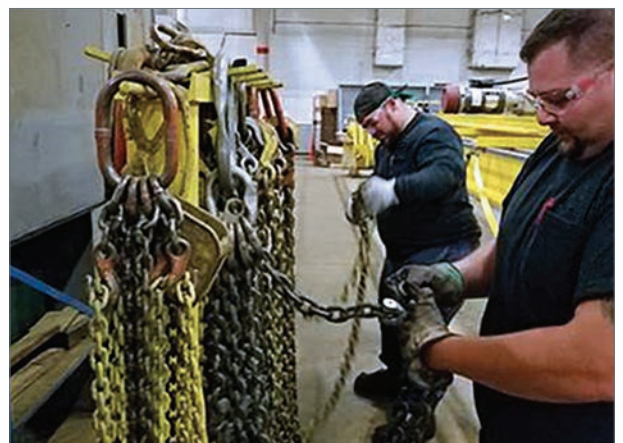
Galvanised

Silverback Grade 80 (T) chains and fittings should not be hot-dip galvanised or electroplated. Galvanised slings must always have the Working Load Limits reduced by 20%.



G80 (T) CHAIN SLING SAFE WORKING LOAD LIMIT CHART

CHAIN SIZE (mm)	DIRECT LOAD (Tonnes)	ADJUSTABLE SLING (Tonnes)	CHOKE HITCH (Tonnes)	DIRECT LOAD (Tonnes)			REEVED SLING (Tonnes)			BASKET HITCH (Tonnes)			REEVED SLING (Tonnes)
				60° 90° 120°			60° 90° 120°			60° 90° 120°			
				60°	90°	120°	60°	90°	120°	60°	90°	120°	
6	1.1	1.1	0.8	1.9	1.6	1.1	1.5	1.2	0.8	1.5	1.2	0.8	1.7
7	1.5	1.5	1.1	2.6	2.1	1.5	2.0	1.6	1.1	2.0	1.6	1.1	2.3
8	2.0	2.0	1.5	3.5	2.8	2.0	2.6	2.1	1.5	2.6	2.1	1.5	3.0
10	3.2	3.2	2.4	5.5	4.5	3.2	4.1	3.4	2.4	4.1	3.4	2.4	4.8
13	5.3	5.3	4.0	9.2	7.5	5.3	6.9	5.6	4.0	6.9	5.6	4.0	8.0
16	8.0	8.0	6.0	13.8	11.3	8.0	10.4	8.5	6.0	10.4	8.5	6.0	12.0
20	12.5	12.5	9.4	21.6	17.6	12.5	16.3	13.3	9.4	16.3	13.3	9.4	18.8
22	15.0	15.0	11.3	26.0	21.2	15.0	19.5	15.9	11.3	19.5	15.9	11.3	22.5
26	21.2	21.2	15.9	36.7	29.9	21.2	27.6	22.5	15.9	27.6	22.5	15.9	31.8
32	31.5	31.5	23.6	54.5	44.4	31.5	41.0	33.4	23.6	41.0	33.4	23.6	47.3



Specifications

- Chain slings are manufactured in accordance with the Australian standard AS 3775 and AS 3776 using quality lifting grade components.
- All slings are supplied with a WLL tag fitted.
- Chain slings can be made to many configuration. Variations include the number of legs, the length of the legs from 1 to 6 metres and the fittings attached to the master links and chain legs.



Choosing chain slings

- How many legs do you require for the chain sling?
- What size of chain do you require or if not sure what is the maximum load to be lifted?
- How long are the chain legs you require?
- Do you require shorteners (grab hooks) on top of the sling?
- What end fitting (hooks) do you require on the end of the sling?

To extend the life of chain slings, it is recommended to:

- Never heat treat alloy chain or fittings.
- Chain and fittings can be lightly oiled before storage.
- Storage areas should be clean and dry.



Custom Assembled G80 Chain Slings

Packed in a heavy duty plastic bucket for easy storage & handling.

- Fitted with WLL stainless steel safety tag.
- WLL test certificates available.

P/N:	NUMBER OF LEGS	CHAIN SIZE (mm)	LENGTH (m)	WLL (T)	END FITTINGS
40000	1	6 - 32	1 - 6	Various	Various
40001	2	6 - 32	1 - 6	Various	Various
40002	3	6 - 32	1 - 6	Various	Various
40003	4	6 - 32	1 - 6	Various	Various

Overhead Lifting Hooks

- Not all hooks are appropriate for overhead lifting. When choosing an overhead lifting hook, it's important to consider the application you will be using it for.
- If you are lifting a plate, you may need one type of hook, while lifting a vehicle engine may require another.
- Only alloy hooks should be used in overhead lifting applications.
- Meets Australian standard AS 3776, lifting components for grade 80 chain slings.



G80 Self Locking Hook (Eye Type, LE)

LE Type G80 Eye Self-Locking Hook allows the hook to remain open until the load is engaged. The hook will not open until the trigger at the back is pressed. The eye style allows easy connection to Chain Connectors, Shackles and Wire Rope Slings.

- Marked with Chain size, product ID, grade with manufacture quality mark.
- Manufactured from G80 alloy steel with a safety factor of 4 to 1.
- Test Certificates available upon request.
- Conforms to AS3776.
- Spare Trigger Kits are available.

P/N:	CHAIN SIZE (mm)	WLL (T)	DIMENSIONS					
			A (mm)	B (mm)	D (mm)	R (mm)	H (mm)	M (mm)
43050	6	1.1	22	34	10.5	110.5	20	15
43060	7-8	2	25	46	12	136	24	20
43070	10	3.2	32	58	13	169	28	26
43080	13	5.3	40	69	16.5	208	40.5	32.5
43090	16	8	50	86	20	254.5	50.5	41

43999 Other sizes available upon request.



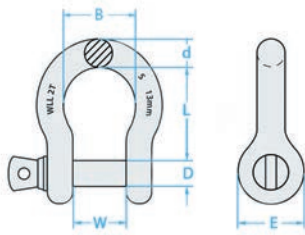
G80 Sling Hook (Eye Type, SE)

SE Type G80 Eye Sling Hooks are a general purpose hook suitable for most slinging applications. They come with a heavy-duty latch for added safety. Eye allows easy connection to coup links and can be attached to lifting apparatus.

- Marked with Chain size, product ID, grade with manufacture quality mark.
- Manufactured from G80 alloy steel with a safety factor of 4 to 1.
- Test Certificates available upon request.
- Conforms to AS3776.

P/N:	CHAIN SIZE (mm)	WLL (T)	DIMENSIONS					
			A (mm)	B (mm)	E (mm)	H (mm)	M (mm)	L (mm)
10618-6	6	1.1	20	74	22	20.5	18	122
10618-8	7-8	2	25.5	83	26	23.5	18	138.5
10618-10	10	3.2	32.5	107	34	30	20	176.5
10618-13	13	5.3	39.5	134.3	41	37.5	29.5	218
10618-16	16	8	50	157.5	44	42.5	34	260

43999 Other sizes available upon request.



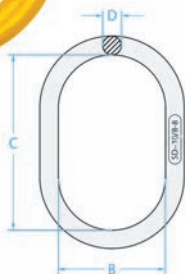
Grade S Shackle (Bow Type, Screw Pin)

Screw pin bow shackles are most commonly used for lifting applications, providing connections to the chain, wire rope and other rated fittings within the marine, agricultural, mining and engineering industries.

- Manufactured from Grade “S” material in bow configuration with screw pin.
- Marked with working load limit in tonnes, quality grade, batch numbered, nominal size in (mm) and supplier identification.
- Proof tested to 2 x working load limit, with a minimum break force of 6 x work load limit.
- Conforms to AS2741.
- Test Certificates are available upon request.
- Suitable for lifting applications.

P/N:	CHAIN		DIMENSIONS					
	SIZE (mm)	WLL (T)	B (mm)	D (mm)	d (mm)	E (mm)	L (mm)	W (mm)
43203	10	1	26	11	10	25	37	17
43204	11	1.5	29	13	11	27	43	18
43205	13	2	33	16	13	33	48	21
43206	16	3.2	43	19	16	40	61	27
43207	19	4.7	51	22	19	48	72	32
43208	22	6.5	58	25	22	54	84	37
43209	25	8.5	68	29	25	60	95	43
43210	29	9.5	74	32	29	67	108	46
43211	32	12	83	35	32	76	119	52
43212	35	13.5	92	38	35	84	133	57
43213	38	17	98	44	38	92	146	60

43999 Other sizes available upon request.



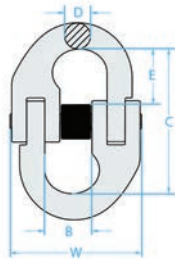
Grade 80 Master Link (Type SD)

SD Type G80 Head-Rings are designed to cater for single leg and double leg Chain Slings or Wire Rope Sling applications. Manufactured from G80 alloy steel, safety factor 4 to 1 for chain sling, 5 to 1 for wire rope sling.

- Marked with single and double chain sizes, product ID, grade with manufacture quality mark.
- Test Certificates available upon request.
- Conforms to AS3776.

P/N:	CHAIN		DIMENSIONS		
	SIZE (mm)	WLL (T)	B (mm)	C (mm)	D (mm)
43800-6	6	1.6	60	100	12
43800-8	8	1.9	70	120	14
43800-10	10	3.5	80	140	18
43800-13	13	5.5	95	160	22
43800-16	16	9.4	110	190	28

43999 Other sizes available upon request.



G80 Chain Connector (Type CL) Hammerlock

CL Type Connecting Links are commonly used to connect head rings, chain, hooks and other lifting components for chain slings and a wide variety of other uses.

- Marked with chain size, grade and manufacture quality mark.
- Made from G80 alloy steel with a safety factor of 4 to 1.
- Test Certificates available upon request.
- Conforms to AS3776.

P/N:	CHAIN SIZE (mm)	WLL (T)	DIMENSIONS				
			B (mm)	C (mm)	D (mm)	E (mm)	W (mm)
43000	6	1.12	15	42	7	18	43
43010	7-8	2	18	60.5	8.5	23.5	55
43020	10	3.15	25	68	11.5	27	69
43030	13	5.3	29	87	15	32	83
43040	16	8	34.5	108.4	19.8	41	102

43999 Other sizes available upon request.

Additional Products

Other heavy duty lifting items are available upon request. P/N: 43999



G80 MD Type Multi Head Rings are designed as a large ring with two intermediate links to cater for two three and four leg chain or wire rope sling applications.



G80 Screw Pin Dee Shackles are most commonly used for lifting applications, providing connections to chain, wire rope and other rated fittings within the marine, agricultural, mining and engineering industries.



G80 Webbing Connector used to connect webbing slings.



G80 Eye Type Container Hooks are a special purpose hook suitable for lifting containers by connection to the twist lock pocket. Left, right and straight configurations available.



G80 Eye Type Drum Hooks are used in pairs and are designed to lift or transport steel drums with drum lid in place.



G80 Clevis Type Elephants Foot is commonly used as a lashing point to secure trucks, cars, container chassis and other vehicles on ships and barges in the marine industry.



G80 WP Type Weld on Lifting Points can be welded on any carbon steel surface, or can be used as a fixed anchor point for spreader beam attachments. Can also be used as an anchor point for load restraint applications.



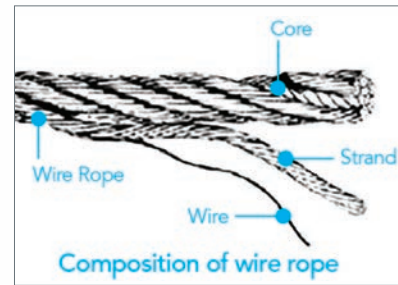
G80 CC Type Shortening Clutch has the advantage of shortening a chain sling without loss of SWL limit of the sling. Not to be used as a bottom fitting of a sling for back-hooking and reeving applications.



G80 SC Type Clevis Sling Hooks are a general purpose hook suitable for most slinging applications. They come with cast latch for added safety. Clevis allows easy connection to G80 lifting chain.

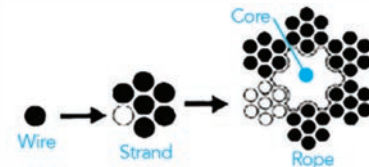
General Description

Steel wire ropes are made up of a number of strands which are composed of a number of wires laid or wound around a central core in a symmetrical manner, with uniform pitch and direction. The result is a strong, flexible and versatile product, with a variety of applications from boat winch cables to structural suspension bridges and cranes. Steel wire ropes can be supplied in various sizes, constructions, grades and finishes depending upon the application.

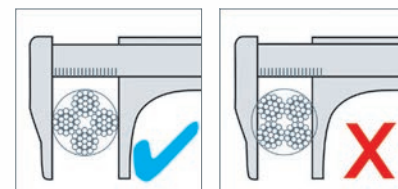


Wire Rope Construction

In the diagram examples on the right, each individual wire is arranged around a central wire to form a 7-wire strand. Six of these strands are formed around a central core to make a wire rope. The rope is specified as 6x7 (6/1) - i.e. six strands each of seven wires.

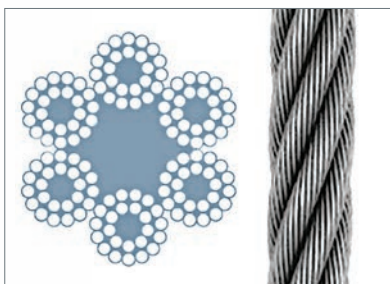
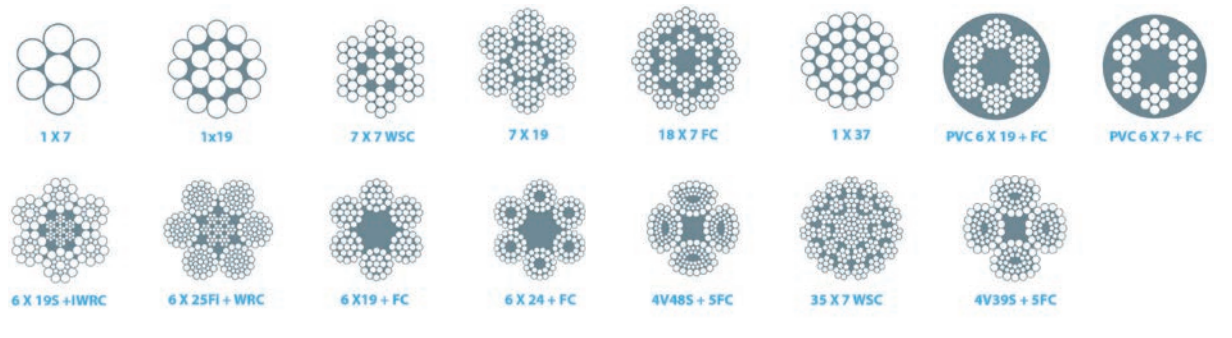


The size and number of wires in each strand, as well as the size and number of strands in the rope greatly affect the characteristics of the rope. In general, a large number of small-size wires and strands produce a flexible rope with good resistance to bending fatigue. The rope construction is also important for tensile loading (static, live or stock), abrasive wear, crushing, corrosion and rotation.



Ropes are referred to by a diameter size. Here is the correct way to measure wire rope.

Typical Flexible Steel Wire Rope Construction



6 x 24 Fibre Core Galvanized Wire Rope

The 6 x 24 fibre core galvanized wire rope has very flexible characteristics and is suitable for slings, static lines, hoists or winches.

- Sizes available from 6mm to 24mm with standard grade of G1570.
- Supplied in reel lengths of 500m or 1000m.
- Manufactured to Australian Standard 1666.1.

Specifications

DIAMETRE (MM)	6	8	10	12	13	14	16	18	20	22	24
Minimum Breaking Strength (G1570kN)	15.8	28.2	44.0	63.3	74.3	86.2	113	143	176	213	253
MASS (kg/100m)	11.4	20.4	31.8	45.8	53.8	62.4	81.5	103	127	154	183

Round Strand Rope

A stranded rope in which the strands are made of wires disposed in such a manner that the cross section of the strand is approximately circular in shape.

Triangular Strand Rope

A stranded rope in which the strands are made of wires disposed in such a manner that the cross section of the strand is approximately triangular in shape.

Multi Strand Rope (sometimes called “non rotating”)

A stranded rope in which two or more layers of strand are spun helically around the main core. The layers of strands are so disposed that, when under tension, the rope will have the minimum obtainable torque or rotational tendency.

Layer

A group of strands in a rope or a group of wires in a strand spun concentrically around the core.

Main Core of Rope

The core of the rope around which the strands are spun.

Fibre Core - A main core which is itself a fibre rope.

I.W.R.C. - A main core which is itself an independent wire rope.

Tensile Grade of Wire

The value of tensile strength used to designate the minimum of the tensile strength range.

Galvanized Wire

Wire which has been zinc coated by one of the permissible processes. The quality of the galvanized coating is defined by its weight, evenness and adherence. Different classes are designated conventionally by a letter (e.g. Class A or Z).

Ordinary (Regular) Lay Rope

Ropes in which the direction of lay of the outer layer of wires in the strands, is opposite to the direction of lay of the strands in the rope.

Langs Lay Rope

Ropes in which the direction of the outer layer of wires in the strands is the same as the direction of lay of the strands in the rope.

Lay Length

That distance in a strand of rope, measured parallel to the longitudinal axis, in which the wire in the strand or the strand in the rope makes one complete turn (or helix) about the axis of the strand or rope.

Minimum Breaking Load

The breaking load below which a sample of the rope will not fracture when tested to destruction in the prescribed manner. The value is calculated from the product of the square of the nominal diameter of the rope, the tensile grade of the wire and a coefficient appropriate to the construction of the rope.

Actual Breaking Load

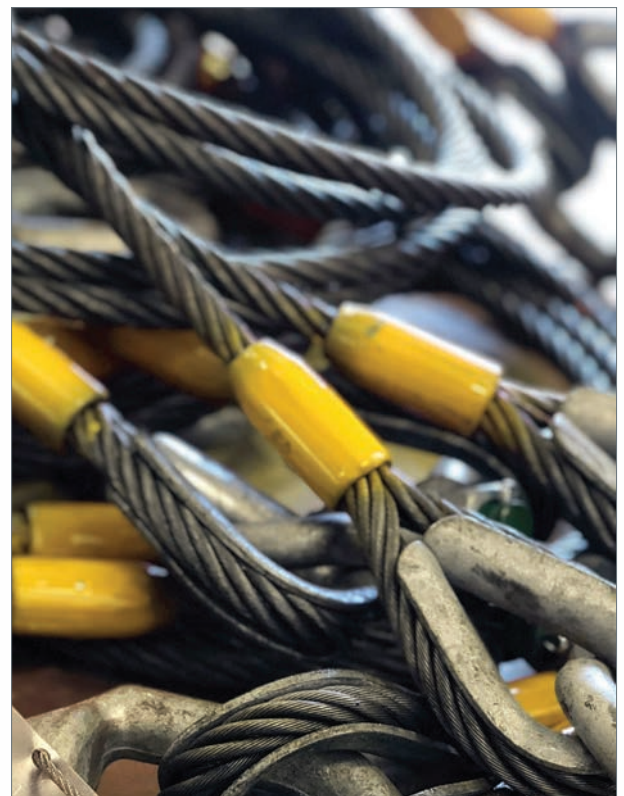
The maximum load obtained in testing a sample of the rope to destruction in the prescribed manner.

Calculated Breaking Load

The value calculated from the product of the sum of the cross-sectional metallic area of the individual wires in the rope and the tensile grade of the wire. This metallic area can be associated directly with the square of the nominal diameter.

Factor of Safety

For the purpose of this publication, this is the ratio between the minimum breaking load and the tensile load in the rope.

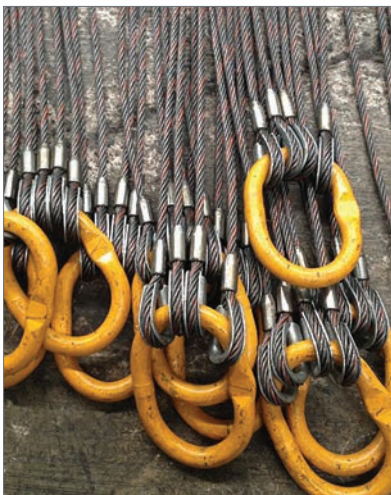
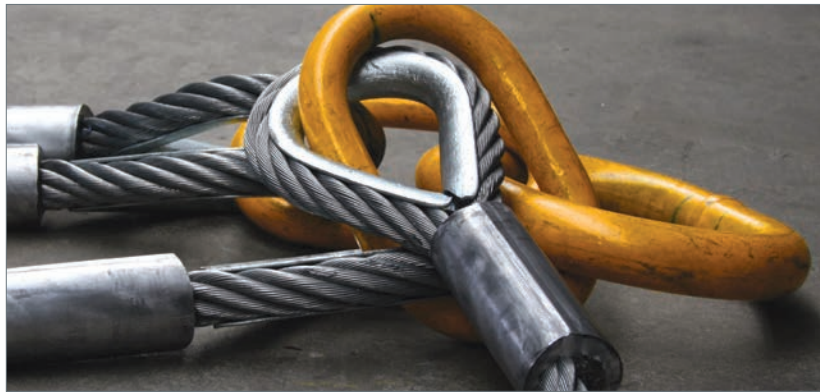


Specifications

- Wire rope slings are manufactured in accordance with the Australian standard AS 3775 and AS 3776 using quality lifting grade components.
- All slings are supplied with a WLL tag fitted.
- Wire rope slings can be made to many configuration. Variations include the number of legs, the length of the legs from 1 to 6 metres and the fittings attached to the master links and chain legs.

Choosing wire rope slings

- How many legs do you require for the wire rope sling?
- What size of wire rope do you require or if not sure what is the maximum load to be lifted?
- How long are the wire rope legs you require?
- What end fitting (hooks) do you require on the end of the sling?



Custom Assembled Wire Rope Slings

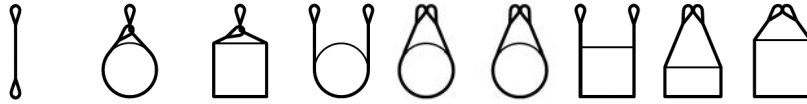
Supplied in a plastic bucket with handle for easy storage and handling.

- Wire rope quoted will be 6x24FC G1570 grade construction.
- Fitted with WLL stainless steel safety tag.
- Standard thimbles are extra upon request.
- WLL test certificates available.

P/N:	NUMBER OF LEGS	WIRE SIZE (mm)	LENGTH (m)	WLL (T)	END FITTINGS
40004	1	6 - 24	1 - 6	Various	Various
40005	2	6 - 24	1 - 6	Various	Various
40006	3	6 - 24	1 - 6	Various	Various
40007	4	6 - 24	1 - 6	Various	Various

WIRE ROPE SLINGS SAFE WORKING LOAD LIMIT CHART

WIRE ROPE SLINGS



DIAMETER (mm)	REEVE LOAD (Tonnes)			ROUND BASKET LOAD (Tonnes)			OBLONG BASKET LOAD (Tonnes)			2, 3 OR 4 LEG SLING (Tonnes)		
	Straight	Round	Oblong	0°	60°	90°	0°	60°	90°	0-60°	90°	120°
8	0.55	0.41	0.27	1.09	0.94	0.77	0.55	0.48	0.39	0.94	0.77	0.55
9	0.69	0.52	0.34	1.38	1.19	0.97	0.69	0.60	0.49	1.19	0.97	0.69
10	0.85	0.64	0.43	1.70	1.47	1.20	0.85	0.74	0.61	1.47	1.20	0.85
11	1.03	0.77	0.52	2.10	1.78	1.45	1.03	0.90	0.73	1.78	1.45	1.03
12	1.23	0.92	0.61	2.50	2.10	1.73	1.23	1.07	0.87	2.10	1.73	1.23
13	1.44	1.08	0.72	2.90	2.50	2.00	1.44	1.25	1.02	2.50	2.00	1.44
14	1.67	1.25	0.83	3.30	2.90	2.40	1.67	1.45	1.19	2.90	2.40	1.67
16	2.20	1.64	1.09	4.40	3.80	3.10	2.20	1.90	1.55	3.80	3.10	2.20
18	2.80	2.10	1.38	5.50	4.80	3.90	2.80	2.40	1.87	4.80	3.90	2.80
20	3.40	2.60	1.70	6.80	5.90	4.80	3.40	3.00	2.40	5.90	4.80	3.40
22	4.10	3.10	2.10	8.30	7.10	5.80	4.10	3.60	2.90	7.10	5.80	4.10
24	4.90	3.70	2.50	9.80	8.50	6.90	4.90	4.30	3.50	8.50	6.90	4.90
26	5.80	4.30	2.90	11.5	10.0	8.10	5.80	5.00	4.10	10.0	8.10	5.80
28	6.70	5.00	3.30	13.4	11.6	9.40	6.70	5.80	4.70	11.6	9.40	6.70
32	8.70	6.50	4.40	17.4	15.1	12.3	8.70	7.60	6.20	15.1	12.3	8.70

Wire Rope Slings

- The Working Load Limit values include a reduction factor of 0.95 this applies only to Slings with machine spliced eyes.
- Based on a safety factor of 5 to 1, the table applies to Slings used for general purpose lifting applications.
- The Sling shall be derated when the Sling is subject to unusual dynamic loading.
- The load factors and values are based on single part Sling leg.
- The Working Load Limit values may be increased by 50% for double-part Sling legs.
- Ensure that Wire Rope Slings are adequately protected from contact with sharp edges.
- Where the Ferrules sit on the Wire Rope Sling they shouldn't be bent around edges or sharp corners during loading.
- For Slings with other types of termination, the relevant factor for terminations shall be used.

2,3 & 4 leg Wire Rope Slings

- Where an endless sling or soft eye of a sling interfaces with a fitting the supporting surface of the fitting shall have a diameter not less than the rope diameter. Where the diameter of such a fitting is less than two rope diameters the sling shall be derated by 50%.
- This method of rating general-purpose multi-leg slings follows the principle that loads could be supported by only two legs, the other legs only balancing the load. It makes allowance for adverse conditions, such as unequal leg lengths, an uneven load shape, a rigid load and an off-centred centre of gravity.
- The WLL for a multi-leg Sling having an included angle of 60 degrees between the legs is the maximum WLL for the Sling, even when the included angle between the legs is less than 60 degrees. Under no circumstances should the included angle between the legs of a multi-leg Sling be allowed to exceed 120 degrees. The WLL of lifting components and end fittings of a multi-leg Sling should be considered when determining the maximum WLL of the Sling.

LIFTING EQUIPMENT

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Sunshine West VIC 3020 Australia
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E: brisbane@silverback.com.au

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E: auckland@silverback.co.nz

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