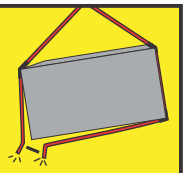
super slings inc.

20 YEARS of

Secure Solutions

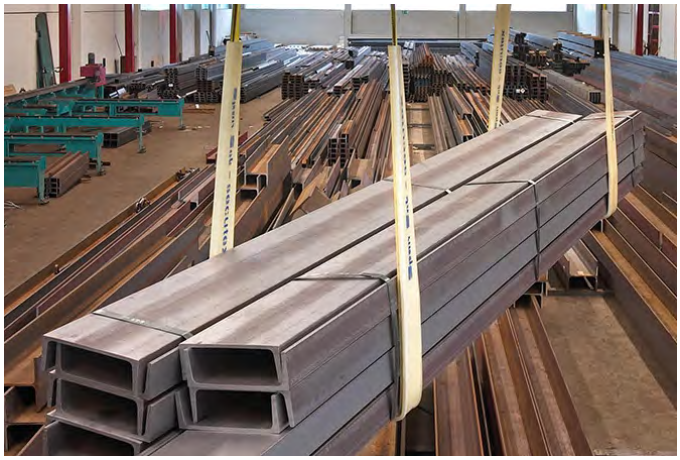
SLING PROTECTION

WARNING! Damaged or misused sling protection can result in damage or sling failure. Inspect before each use. Inspect for cuts, tears or damage that may prevent protection of the sling. Ensure protection is the correct size and type to protect the sling. Protect sleeve and sling from slipping or sliding across load edge. **Death or Injury can occur from improper use, maintenance and/or inspection. Wear pads may not prevent cutting or other sling damage. To avoid severe personal injury or death, keep all personnel clear of loads about to be lifted and suspended loads.**



The Importance of Sling Protection

Sling protection products are designed to aid in the protection of lifting slings during a lifting application. One of the most common cause of failure of slings, both during use and during inspection is cutting and damage from abrasive or jagged surfaces. Sling protection can help reduce this problem by acting as a buffer between the sling and the load. When used with steel slings, they can help protect both the sling and the load from damage. There are two main applications with regards to sling protection, abrasion protection and cut protection. Wear pads such as Cordura or ballistic nylon are often used in the eye of the sling or any part of the sling that may come in contact with the load. Cut protection and corner protection such the as the LiftGuard sling protectors and Spanset Secutex sleeves should be used whenever the sling is going around a narrow radius or “sharp” edges or corners.



Definition: “Sharp” Edge

In addition to external factors, such as temperature or mechanical stress, "sharp edges" still represent one of the main causes of damage to the lifting gear itself and are therefore a frequent cause of accidents. The most damages on sharp or rough edges occur by moving the load transversely to the lifting gear. If the edge is "sharp", it can, in the worst case, cut through the lifting gear. If the load moves to the side, a cutting motion occurs at the edge. Being comparable with the blade of a knife, the edge can cut through unprotected lifting gear.

A sharp edge already exists if the edge radius "r" is smaller than the thickness of the material "d" of the lifting gear. If the edge radius is under 2 mm, experts already consider this a "razor-sharp edge". The definition of "sharp edges" was originally devised for wire rope attachments, but was not adapted to the development of round slings. This problem was examined by **SpanSet**® in cooperation with the trade association and DEKRA in an extensive series of tests.

THE DIFFERENT VERSIONS OF A SHARP EDGE:

Sharp edge: Edge radius

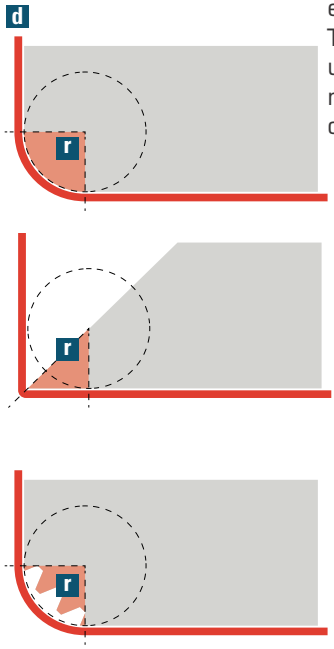
If the edge radius “r” is smaller than the thickness of the flat sling/round sling “d”, the edge is considered "sharp". Lateral movements or surface pressure can already be enough to sever the lifting gear

Sharp edge: Edge Angle

In addition to loads with rectangular edges, there are goods with deviating shapes. These include loads with protruding edges and with sharp or jagged outer contours, such as cogwheels, turbine blades etc. These edges cannot be determined by the general rule.

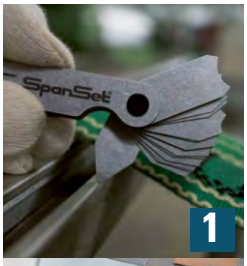
Sharp edge: Edge shape

The shape and surface finish of the edges have a significant impact on the durability of the lifting gear. Very rough surfaces, such as those of a prefabricated concrete component, can very quickly damage textile lifting gear or a wire rope.



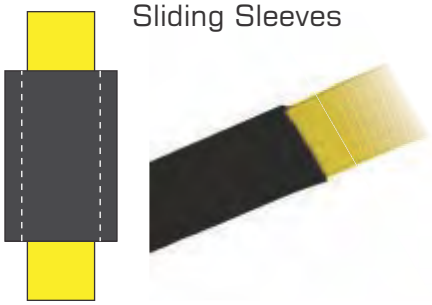
Tools for measuring radii

In order to assess the sharp edge, "tools" are required. The following tools can be used to determine radii: radius gauge **1** , vernier caliper **2** , folding ruler.



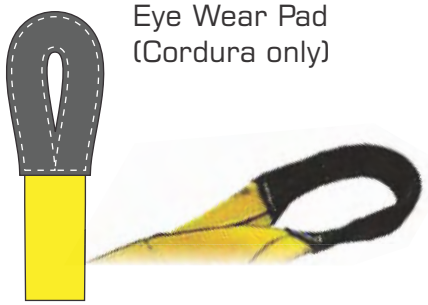
Wear Pad Types

Sliding Sleeves



Sliding Sleeves with Velcro®

Eye Wear Pad (Cordura only)



Wear Pad Materials

Cordura®

Cordura® is a high strength, cut resistant nylon fabric that is great for adding abrasion resistance to synthetic slings, tie down straps and other types of webbing.

Ballistic Nylon

Ballistic Nylon is a thin, 2-ply wear resistant fabric made of bulked nylon fiber, appropriate for wider sleeves, bundling applications and abrasive surfaces.

Material Type	Web Sling Width	Overall Width approx	Item No.
	inch	inch	
CORDURA WEAR PAD SLEEVE			
CORDURA	1	1.5	03-WPC1/SLV
CORDURA	2	3	03-WPC2/SLV
CORDURA	3	4	03-WPC3/SLV
CORDURA	4	4.5	03-WPC4/SLV
CORDURA	6	7	03-WPC6/SLV
CORDURA	8	9.5	03-WPC8/SLV
CORDURA	10	11.5	03-WPC10/SLV
CORDURA	12	13	03-WPC12/SLV
CORDURA WEAR PAD SLEEVE W/ VELCRO®			
CORDURA	1	2	03-WPC1/SLV-V
CORDURA	2	3	03-WPC2/SLV-V
CORDURA	3	4.25	03-WPC3/SLV-V
CORDURA	4	6	03-WPC4/SLV-V
CORDURA	6	8	03-WPC6/SLV-V
CORDURA	8	10	03-WPC8/SLV-V
CORDURA	10	12	03-WPC10/SLV-V
CORDURA	12	13.5	03-WPC12/SLV-V

Material Type	Web Sling Width	Overall Width approx	Item No.
	inch	inch	
BALLISTIC NYLON WEAR PAD SLEEVE			
BALLISTIC NYLON	1	1.5	03-WPBN1/SLV
BALLISTIC NYLON	2	3	03-WPBN2/SLV
BALLISTIC NYLON	3	4	03-WPBN3/SLV
BALLISTIC NYLON	4	4.5	03-WPBN4/SLV
BALLISTIC NYLON	6	7	03-WPBN6/SLV
BALLISTIC NYLON	8	9.5	03-WPBN8/SLV
BALLISTIC NYLON	10	11.5	03-WPBN10/SLV
BALLISTIC NYLON	12	13	03-WPBN12/SLV
BALLISTIC NYLON WEAR PAD SLEEVE W/ VELCRO®			
BALLISTIC NYLON	1	2	03-WPBN1/SLV-V
BALLISTIC NYLON	2	3	03-WPBN2/SLV-V
BALLISTIC NYLON	3	4.25	03-WPBN3/SLV-V
BALLISTIC NYLON	4	6	03-WPBN4/SLV-V
BALLISTIC NYLON	6	8	03-WPBN6/SLV-V
BALLISTIC NYLON	8	10	03-WPBN8/SLV-V
BALLISTIC NYLON	10	12	03-WPBN10/SLV-V
BALLISTIC NYLON	12	13.5	03-WPBN12/SLV-V

*Wear Pad sleeves are sold by the foot. Please specify length required at the time of order.

Secutex Protective Sleeves for Lifting

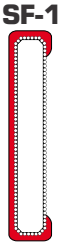
Flexible protection sleeve, protective sleeves. The protective sleeve catches the edge of the load while the lifting strap moves freely through the protective sleeve. The load and lifting strap are protected.

Benefits

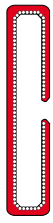
- Extremely cut-resistant
  secutex protective sleeves adapt flexibly to loads "sharp edges". The extreme structural resistance of the secutex material safely prevents any cutting of the load lifting accessory.
- Extremely wear- and abrasion-resistant
  secutex coatings reliably protect the load lifting accessories in contact with rough surfaces against early wear. secutex protective sleeves and fixed coatings are therefore the more economical solution.
- Careful handling of the load
  The secutex protective coating adheres to the load softly and flexibly, increasing the radius of critical edges. The lifting forces are distributed across a larger area and the load remains undamaged.
- Exceptional handling through low dead weight
  secutex-coated lifting straps and protective sleeves offer optional handling. Due to the low deadweight and flexibility, the load lifting accessory can be attached easily and quickly to the load.
- Meets the highest standards of work safety
  Thanks to the optimal handling, it achieves exceptionally high levels of safety. Even difficult lifting situations can be solved. There's a reason why lifting using textile load lifting accessories is called "soft lifting".

Type	Inside Width	Overall Width	Overall height	Weight apprx per mt	Item No.
	mm	mm	mm	kg	
SF-1 SINGLE SIDED COATING					
Single	30	55	30	0.6	SF1-30
Single	60	85	23	1	SF1-60
Single	90	115	25	1.5	SF1-90
Single	120	145	25	2	SF1-120
Single	150	175	25	2.3	SF1-150
Single	180	210	30	2.9	SF1-180
Single	240	270	35	3.7	SF1-240
Single	300	340	35	4.6	SF1-300
SC CLIP SINGLE SIDED COATING					
Clip	30	47	22	0.9	SC-30
Clip	60	85	23	1.4	SC-60
Clip	90	115	25	2.2	SC-90
Clip	120	145	25	2.9	SC-120
Clip	150	175	25	3.4	SC-150
Clip	180	210	30	4.2	SC-180
Clip	240	270	35	5.5	SC-240
Clip	300	340	35	6.8	SC-300

SF-1



SC



SpanSet secutex®

Turning loads using the protective sleeve

Turning the coil by 90°

Step 1:
Determine minimum length of protective sleeve

2 x H [wrapping height]
\+ 2 x B [coil width]
\+ 2 x projection 25 cm

Length of protective sleeve

Turning the coil by 180°

Step 2:
Determine minimum length of lifting strap.

3 x H [wrapping height]
\+ 2 x B [coil width]
\+ 2 x projection 25 cm

Length of protective sleeve

Turning loads using the protective sleeve

secutex protective sleeves are vital when turning over coils. The lifting strap is attached to a crane hook and attached to the load with the secutex protective sleeve. During lifting, the strap moves freely through the protective sleeve while the latter remains motionless against the load. This means that turning the load 90° is possible without any problem whatsoever. If the load is paced to the other side according to the same principle, it can be also be turned by 180°. The lifting strap can slide through the protective sleeve during the turning process. The protective sleeve and load, however, remain in constant contact.

Step 2:
Determine minimum length of lifting strap.

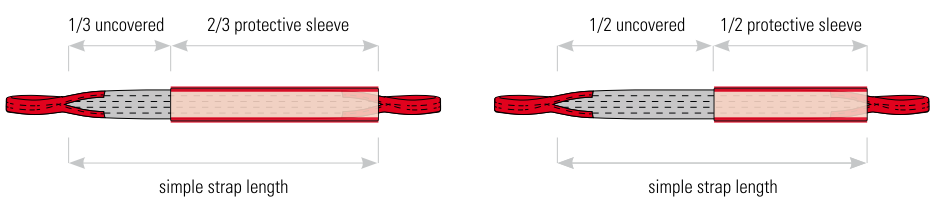
The simple strap length between the slings is based on the „length of the protective sleeve“:

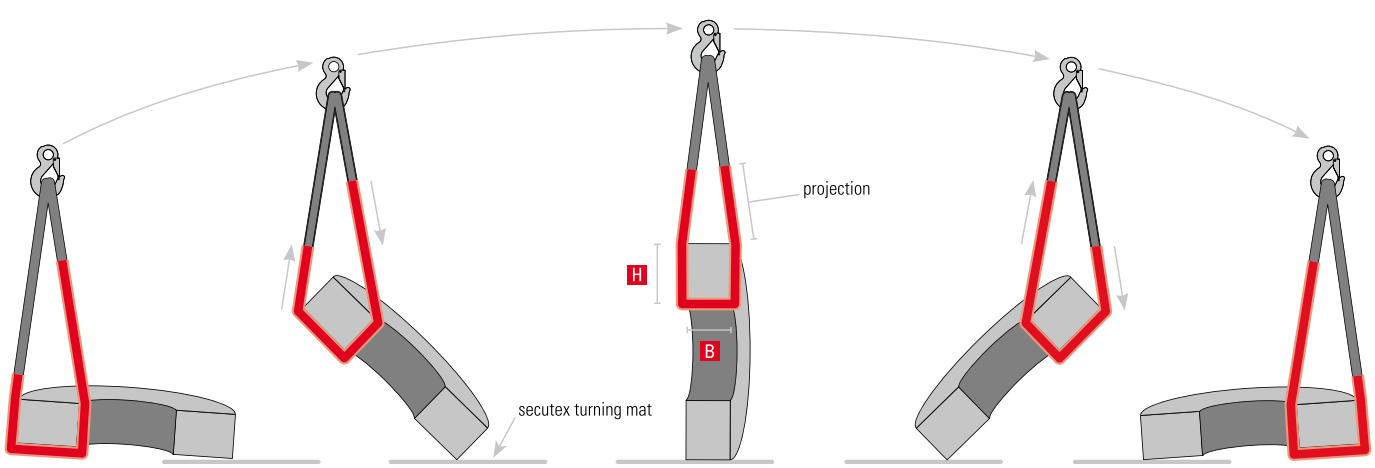
Our tips for safe turning:

- The lifting strap is exactly at „12 o‘clock“ over the centre of the coil.
- Only individual, unpackaged and cleanly-wrapped coils may be turned.
- A non-slip surface, such as the secutex turning mat (cf.p. 102] must be used.
- The coil must be prevented from rolling in or sliding perpendicularly to the lifting strap.
- A coil may not be permitted to „pull out“ at an angle.

Step 2:
Determine minimum length of lifting strap.

The simple strap length between the slings is based on the „length of the protective sleeve“:



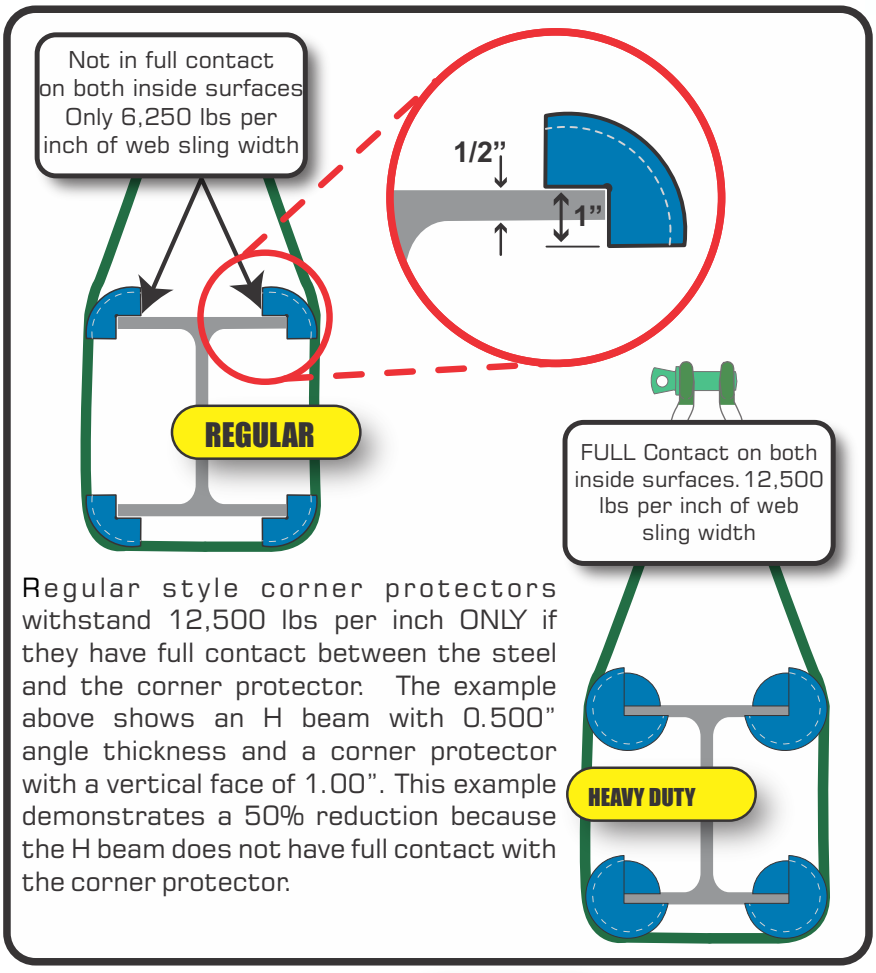


Liftguard Magnetic Sling Protectors

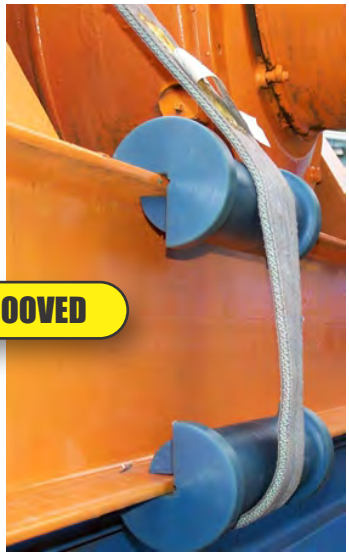
All slings, especially synthetic slings, can be damaged when lifting a load if they are not properly protected. Edge protection with sling use is critical in preventing a sling failure, and is a requirement in current sling safety standards. Cut and damaged slings are the leading cause of most rigging related accidents.

"Slings in contact with edges, corners, or protrusions should be protected with a material of sufficient strength, thickness, and construction to prevent damage to the sling" (ANSI/ASME B30.9-1.10.4)

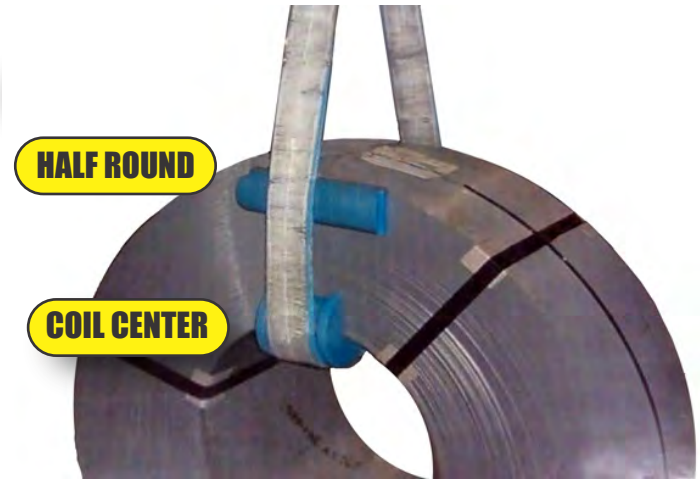
Liftguard Sling protectors attach with strong magnets to the steel corner and keep the sling from contacting the load. Made of solid nylon, these Magnetic Sling Protectors are only 1/7th the weight of steel, no tools are needed since magnets allow for quick and easy attachment and removal.



Regular style corner protectors withstand 12,500 lbs per inch ONLY if they have full contact between the steel and the corner protector. The example above shows an H beam with 0.500" angle thickness and a corner protector with a vertical face of 1.00". This example demonstrates a 50% reduction because the H beam does not have full contact with the corner protector.

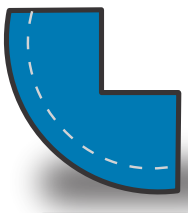


12,500 lbs per inch of web sling width only with FULL contact on inside surfaces



LiftGuard™

MAGNETIC SLING PROTECTORS

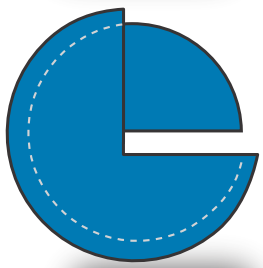


REGULAR

REGULAR	
LENGTH	ITEM CODE
6”	6-3-90
9”	9-3-90
12”	12-3-90
18”	18-3-90

HEAVY DUTY

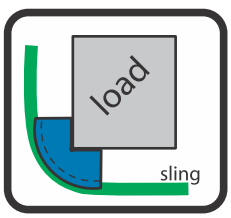
HEAVY DUTY	
LENGTH	ITEM CODE
6”	6-3-270
9”	9-3-270
12”	12-3-270
18”	18-3-270

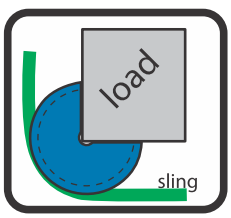


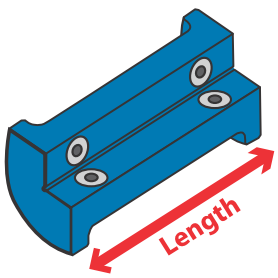
GROOVED

GROOVED	
LENGTH	ITEM CODE
9”	9-3-360G
12”	12-3-360G
18”	18-3-360G

Other sizes can be manufactured on request

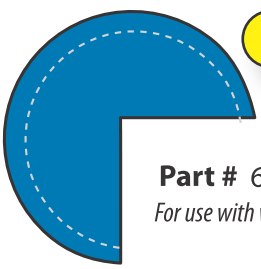






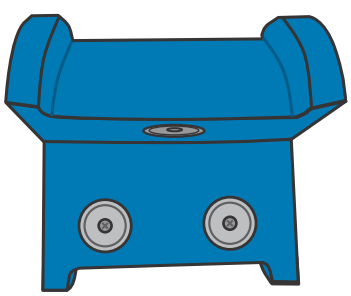
Custom Designs

Coil Top

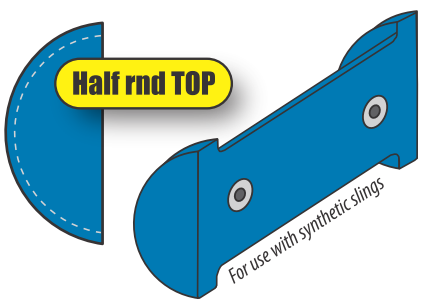


Part # 6-3-270 C Top

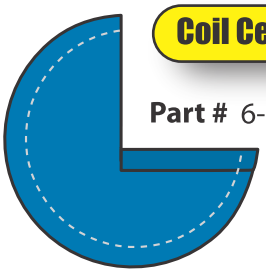
For use with wire rope and chain slings



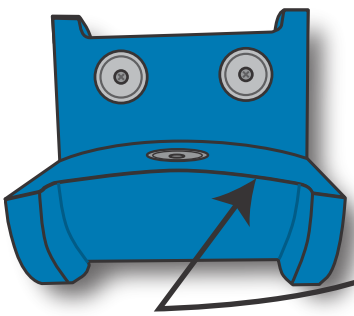
Half rnd TOP



Coil Center



Part # 6-3-270 C Ctr



Designed for spools with a 20” inside diameter other sizes made on request

LIFTING SLINGS

Industrial lifting slings are used every day for various lifting and load handling applications and come in several different types, sizes and configurations. Generally, all of the slings manufactured and provided by Super Slings Inc. meet or exceed the requirements, standards and regulations of Alberta OH&S and ASME B30.9. We follow the recommendations and best practices set out by the WSTDA, AWRF, WRTB, NACM and other industry organizations. We are committed to providing our valued customers with the highest quality and most reliable products on the market today.

SLING SELECTION

To make the correct sling selection for a particular application, the user should be properly trained and have sufficient experience in proper rigging applications and techniques. A trained, qualified and knowledgeable user must be aware of several factors during the rigging and lifting process. The following items are some (but not all) of the factors that should be considered during this process;

- ENVIRONMENTAL FACTORS
- LOAD FACTORS
- EQUIPMENT AND LIFT TYPES
- RIGGING
- PERSONNEL
- SLING PROTECTION

Prior to selection, ensure all purchasers, supervisors and users read and understand the information contained in this catalog and all responsibilities as detailed in all corresponding regulations and standards. Select the sling with the best attributes for the lifting application.

LIFTING SLING TYPES

Web & Round Slings

Web & Round slings are the most flexible, versatile and economical slings commonly used today. Super Slings Manufactures standard web slings up to 12" wide as well custom web slings and assemblies including multi-leg bridles, wide lift slings and several others. Our standard round slings have capacities up to 90,000 lbs vertical lift as well as special order Super Slingers with vertical capacities up to 1,000,000 lbs

Synthetic Chain Slings

Green Pin Tycan®, made from Dyneema® fibre, is up to eight times lighter than steel – yet just as strong. Join leading heavy-lifting companies in experiencing the superiority of our award-winning Green Pin Tycan® Chain. A choice of four sizes of lifting chain with matching fittings allows you to manufacture a complete chain assembly with a Working Load Limit of up to 14.2 ton. The chain fittings, specially developed for use with Green Pin Tycan®, include a connecting link, a shortening hook and a sling hook.

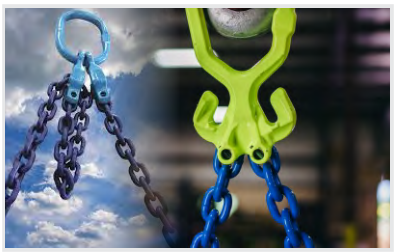
Wire Rope Slings

Wire rope slings are the most frequently used type of sling today. Used in the construction, energy, manufacturing, crane and several other industries where heavy loads and rugged conditions exist, they offer a strong, dependable and economical option for most lifting applications. Their popularity is enhanced by the numerous sling configurations available to support a broad range of applications.

Alloy Chain Slings

Alloy steel chains are often used because of their strength, durability, abrasion resistance and ability to conform to the shape of the loads on which they are used. In addition, these alloy chain slings are able to lift hot materials.

Alloy steel chain slings are made from various grades of alloy, but the most common grades in use are grades 80 and 100. Grade 120 alloy steel chain slings and Grade 50/63 stainless steel chain slings are also available upon request.



SLING SELECTION FACTORS

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.
2. Headroom.
3. Frequency of use - life of sling.
4. Type of load - steel, machinery, lumber, shipping containers, crates, steel fabricated sections, fragile or items subjected to marring.
5. Cost versus efficiency.
6. Length of sling.
7. Method of slinging.
8. Environment - corrosion, heat etc.
9. Available storage for slings.

SOME GENERAL OBSERVATIONS ON THE ABOVE INCLUDE:

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 local standards and regulations.

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, length adjustability and a wide range of available components
- Wire Rope slings provide the highest capacity to cost ration, however; they are typically not repairable.
- 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 slings or Webbing slings are the best choice.
- Where marring of items is a problem, Webbing slings, Round slings are most satisfactory.

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, GrabIQ Chain Slings, Round slings and Webbing slings can save money in time and reduce injury.

6. Length of Sling

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

7. Method of Slinging

- 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 wire rope slings or synthetic Round and Webbing slings are generally the most efficient, though in special applications where abrasive surfaces are prevalent or in hauling logs chain slings are much more suitable.
- If shortening of sling legs is required in multi leg applications, alloy chain slings or synthetic 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.
- Aluminum ferrules are not appropriate in some mining areas or alumina refineries.
- Where acids and alkalis are prevalent webbing slings are beneficial. Alloy chain 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.

Slings should always be used in line with good rigging practices as per the manufacturers recommendations. Incorrect slings use could result in a dangerous situation that could cause property damage, serious injury or death. Increasing the load angle of multiple leg sling assemblies derates the sling, therefore higher capacity slings will be required. Never use a slings with an angle less than 30° from horizontal.

DISPOSAL OF DAMAGED SLINGS & RIGGING

When it comes to the disposal of rigging hardware, wire rope, or slings, the best practice is to render the items in question as unsalvageable, or in such a condition as to make further use impossible. Because there are no standards or clear instructions developed by industry authorities like OH&S WSTDA, or AWRF for the disposal of damaged or failed lifting materials, we have outlined what we suggest to be best practices. Keep the following aspects in mind, when disposing of lifting and rigging gear:

- Only scrap slings if you have been trained, and are authorized to do so, by your employer
- Use caution when operating saws or torches and use proper PPE when handling cut pieces of wire rope, chain, or hardware
- Wire rope, chains, and synthetic slings need to be cut into 3' to 4' lengths before being disposed of, so that they cannot be salvaged or re-purposed. Also, cut or destroy any eyes on the ends of slings.
- It is recommended that all tags and labels be removed from any sling or hardware before being scrapped
- When possible, remove and separate pins and/or latches on any lifting hardware
- Synthetic slings can typically be disposed of as general waste or trash and can, in most areas, be introduced into the waste stream

At Super Slings we offer a sling inspection and repair program. If you're unsure whether the gear you're using is still in proper working condition, or whether it needs to be removed from service, we have highly trained and qualified personnel that can come on-site and perform a field inspection that complies with OSHA and ASME standards.

Super Slings also offers pick-up and delivery services where we can come to your facility, take your lifting gear, and bring it back to our facility. They are then inspected, repaired (if required/possible) and tested.

CHAIN SLINGS

Inspect | Tag | Repair

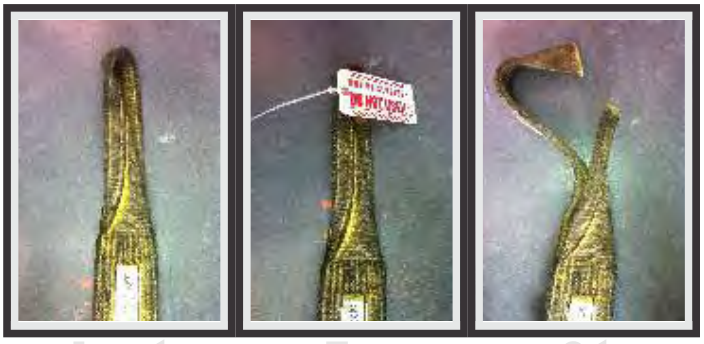
WIRE ROPE SLINGS

Inspect | Tag | Cut

ROUND SLINGS

Inspect | Tag | Cut

WEB SLINGS



Inspect | Tag | Cut

WARNING!

RIGGING THAT HAS FAILED INSPECTION SHALL NOT BE USED FOR ANY COMMERCIAL OR PERSONAL MEANS. USE OF DAMAGED RIGGING MAY CAUSE PROPERTY DAMAGE, INJURY TO PERSONNEL OR DEATH