



WARNING

TO THE USERS OF SYNTHETIC PRODUCTS

The **WARNING** icon, used in our product information is done to alert sling users to potentially hazardous conditions and situations.

WARNING It is your explicit responsibility to consider all risk factors prior to using any rigging device or product. Read and understand the information contained in this bulletin, in our catalog, on our web site www.lift-it.com and follow OSHA and ASME guidelines. Use by untrained persons is hazardous.

The American Society of Mechanical Engineers, in the Sling Safety Standard, ASME B30.9-2003, clearly establishes the requirement for training. Sections 9-5.1 and 9-6.1-Training states, "Synthetic webbing and round sling users shall be trained in the selection, inspection, cautions to personnel, effects of the environment and rigging practices, covered by this chapter."

WARNING All Products supplied and manufactured by Lift-It® Manufacturing are sold with express understanding that the purchaser and user are thoroughly familiar with the safe and proper use and application of the product. The qualified person and sling user has the responsibility for use and application, and should have sufficient training and knowledge of all applicable standards to responsibly use our products.


WARNING Failure to follow proper use, care and inspection criteria could result in severe personal injury or death. Synthetic products will fail if damaged, abused, misused, overused, or improperly maintained.

WHEN ORDERING OR USING, ALWAYS CONSIDER:

- Type of hitch
- Chemical Environment
- Sling-to-Load angle
- Adequate Wear Protection


Sling Hitches

Slings carry their loads in one of three primary hitches. The work load limit of the sling is affected by the hitch that is used. Most slings can be used in all three hitches, but some slings are designed for use in only one hitch. Slings have the largest work load limit when used in a basket hitch. The work load limit of a vertical hitch is 50% of the basket hitch. The same sling would be assigned a different work load limit for the choker hitch. The choker work load limit is a maximum of 80% of the vertical work load limit per ASME recommendation.




CHOKER HITCH

Sling passes through one eye around the load. The other eye is free to be placed on the hook.



VERTICAL HITCH

One eye is on the hook, while the other eye is attached directly to the load. Use a tagline to prevent load rotation.



BASKET HITCH

The sling cradles the load while both eyes are attached overhead.

Chemical Considerations

It is important to select a sling that has the proper chemical characteristics, making the sling compatible with its environment.

PERFORMANCE CHARACTERISTICS OF SYNTHETIC FIBERS

NYLON

Nylon is popular and general purpose synthetic fiber which is unaffected by common grease and oil. Nylon products have good resistance to aldehydes, hydrocarbons, ethers and some alkalis, while degradation ranging from none to moderate occurs with exposure to certain alkalis. Nylon slings are not suitable for use with acids and bleaching agents. Exposure can result in degradation from none to total. Dilute acids, such as, hydrochloric and sulfuric in 10% concentrations at room temperature cause a significant loss in strength in 10 hours.

Solvents for nylon include:

- Concentrated formic acid
- Phenolic compounds at room temperature
- Calcium chloride in methanol at room temperature
- Hot solutions of zinc chloride in methanol
- Benzyl alcohol at the boil

Hot solutions of calcium chloride in:

- Glacial acetic acid
- Ethylene Chlorohydrin
- Ethylene Glycol

Nylon is also not significantly affected by compounds of the following classes: alcohols, dry cleaning solvents, halogenated hydrocarbons, ketones, soaps and synthetic detergents or water (including sea water).

Nylon products lose 15% of their work load when wet. The acceptable temperature exposure range is -40°F (-40°C) to a maximum of 194°F (90°C). Stretch at work load limit is approximately 6-8%.

All webbing will become shorter, over time. Nylon webbing placed on a table, with no use, will shrink up to 5% in length after six months, as a result of the weave configuration. Dense webbing shrinks less than a loose weave. Nylon will shrink more than polyester webbing. Other factors that affect shrinkage are humidity, temperature and usage.

POLYESTER

Polyester is not significantly affected by most compounds of the following classes: alcohols, dry cleaning solvents, halogenated hydrocarbons, ketones, soaps and synthetic detergents or water (including sea water). Polyester also has good to excellent resistance to aqueous solutions of most weak acids at the boil and to most acids at room temperature, but is disintegrated by concentrated sulfuric acid (95%) at room temperature. Polyester products also have good resistance to most aqueous solutions or strong alkalis at room temperature, but are degraded by the same solution at the boil. Oxidizing agents and bleaching treatments ordinarily used by the textile industry also do not degrade polyester fiber. Stretch at work load limit is approximately 3-4% and polyester does not lose strength as a result of moisture absorption. The acceptable temperature exposure range is -40°F (-40°C) to a maximum of 194°F (90°C).



WARNING Our Products may contain chemicals known to cause cancer, birth defects and/or other reproductive harm.

Sling-To-Load Angle

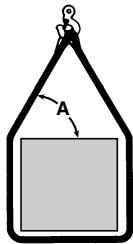
Slings with adequate work load limits to handle the "scale" weight of the load have catastrophically failed because of an inadequate consideration of the sling angle and the increased tension.

Any load rigged in a hitch that is not vertical, develops increased tension on the sling. When selecting a sling, always consider the sling to load angle (horizontal angle) and the tension that will be applied to the sling.

Whenever a choker Hitch results in an angle of choke that is less than 120 degrees, the work load limit must be adjusted.

Simply multiply the choke hitch work load limit by the appropriate loss factor to determine the sling's actual work load limit.

SLING-TO-LOAD ANGLE

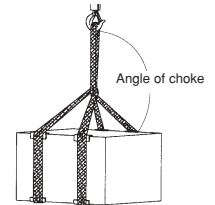


The horizontal angle formed between the sling leg and the "top" of the load.



ILLUSTRATED ABOVE- INCREASED LOAD STRESS IS MAGNIFIED BY ANY CHANGE FROM VERTICAL TOWARD HORIZONTAL LIFTING. THE SAME STRESS IS IMPOSED UPON SLING LEGS ATTACHED TO THE LOAD AT VARIOUS ANGLES.

Angle of Choke (Degrees)	Loss Factor
120 - 180	1.000
90 - 119	.820
60 - 89	.710
30 - 59	.600
0 - 29	.480



ANGLE "A" DEGREES	LOSS FACTOR	ANGLE "A" DEGREES	LOSS FACTOR
90	1.000	55	.8192
85	.9962	50	.7660
80	.9848	45	.7071
75	.9659	40	.6428
70	.9397	35	.5736
65	.9063	30	.5000
60	.8660	25	.4226

A BASKET WORK LOAD LIMIT OF 10,000 LBS. CHANGES AS THE SLING-TO-LOAD ANGLE CHANGES:
 AT 90° - WORK LOAD LIMIT = 10,000 LBS.
 AT 60° - WORK LOAD LIMIT = 8,660 LBS.
 AT 45° - WORK LOAD LIMIT = 7,071 LBS.
 AT 30° - WORK LOAD LIMIT = 5,000 LBS.

SLING-TO-LOAD ANGLE (DEGREES)	90°	60°	45°	30°
WORK LOAD LIMIT X LOSS FACTOR	10,000 LBS. X 1.000	10,000 LBS. X .866	10,000 LBS. X .7071	10,000 LBS. X .500
ACTUAL SLING WORK LOAD LIMIT	10,000 LBS.	8660 LBS.	7071 LBS.	5000 LBS.

SLING ANGLES OF LESS THAN 45 DEGREES SHOULD NOT BE USED, UNLESS APPROVED BY A QUALIFIED PERSON.

Wear Protection

Synthetic slings can be damaged, abraded or cut as tension and compression between the sling, the connection points and the load develops. Edges and abrasive surfaces in contact with the sling must be "padded" with materials of sufficient strength and/or thickness to prevent damage and catastrophic sling failure.

The edge of the load need not be "razor" sharp to damage the sling. A combination of non-positive sling to load contact (sling slipping across the load) and inadequate wear protection materials may result in wear protection damage and sling failure. The result is uncontrolled load descent.

WARNING Wear protection may not prevent cutting or other forms of sling damage. Personnel should never be under or on the load, while the lift is in progress.

"Cut proof" wear protection does not exist. Materials must be evaluated and selected based upon the application and type of exposure. Some materials are suitable for abrasion resistance, but offer virtually no protection against the effects of cutting. Twin-Path® Extra, High Performance Fiber Slings can develop a 25,000 pound per inch of width, work load limit. A web sling can develop a 12,800 pound per inch of width, work load limit. Certain materials used in the construction of wear protection and protectors have been evaluated for cut resistance. Magnetic corner protectors, Cornermax® and Meshguard® wear protectors have been evaluated and are rated for cut resistance, exceeding the 12,800 pounds per inch loading requirement.

WARNING Materials of sufficient strength and resistance to damage must be employed to prevent injury, death and/or property damage.

SLEEVES

Sleeves cover both sides of the sling and can be shifted to a specific location. The sleeve can also be re-positioned for quick and easy inspection of the sling.

Available in six different materials: Cordura®, Heavy Duty Nylon, Leather, Neoprene, Felt and Aramid. Available in sewn edge, tubular and quick-sleeve constructions.

WEAR PADS

Wear pads are sewn to the sling for protection in critical wear areas. These pads can be sewn at any location, in single or multiple layers and can be attached to one or both sides of the sling. Leather wear pads in excess of 5 feet are not recommended.

EDGE WRAP

A strip of Cordura® or leather is sewn around the edge of the sling. This form of protection is necessary in applications where excessive edge wear and damage occur. Consider using Polyester Monster Edge® webbing.

BODY WRAP

This form of protection is similar to the sleeve, but is sewn to the sling body and protects not only the body, but the edges of the sling.

CORNERMAX®

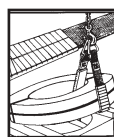
Cornermax® wear protection is truly remarkable because its design forms a tunnel between the load edge and the wear pad. This "barrier" greatly reduces the possibility of cutting.

WARNING No form of wear protection is cut proof.

CORNERMAX® PART NUMBER	SLING WIDTH (INCHES)	CORNERMAX® WIDTH (INCHES)	PROTECTION RATING (LBS)
CM-6	1 - 2 IN.	6	25,000
CM-8	UP TO 5 IN.	8	60,000
CM-10	UP TO 6 IN.	10	100,000
CM-12	UP TO 8 IN.	12	100,000
CM-14	UP TO 12 IN.	14	100,000

FLEX-O-CLIP

Made of transparent material, Flex-O-Clip is sturdy and provides flexibility to conform to irregular shaped loads. The entire sling body can easily be inspected by peeling the Flex-O-Clip from the sling; when finished re-install the protector. Available for: 2, 3, 4, 6, 8 10 and 12 in. web widths. Maximum length is 16 ft.



WARNING Maximum loading is 2500 lbs. per inch of web width.

- *Do not use an oversized Flex-O-Clip on a sling having inadequate width for the pad. Match size to size.
- *Remember to allow ample clearance for Flex-O-Clip to work properly.
- *Make sure that the length of the wear pad does not interfere with the sling closing to the full gripping position on the load.

MAGNETIC CORNER PROTECTOR

Magnetic corner protectors are fabricated from a durable synthetic material that protects synthetic and wire rope slings from damage. They work on any 90 degree "cornered" load and keep the sling from contacting the load.



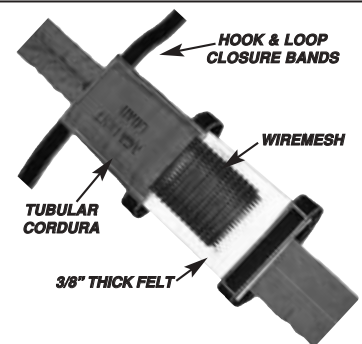
Magnetic corner protectors are "protection rated" at 12,500 PSI. Available in 9, 12 and 18 inch lengths. Application temperatures range from -20°F (-29°C) to 220°F (104°C). Heavy duty protectors, featuring larger diameters are also available.

WARNING The magnets are designed to keep the protector from falling from metallic loads and are not intended to prevent the protector or sling from sliding. Slings and protectors should be vertical or perpendicular to the load. The farther from vertical that the slings and protectors are, the more likely the protectors and slings will slide to become vertical and result in load instability and uncontrolled load descent. When using magnetic corner protectors always inspect for damage, prior to use. Keep magnets clean and free of debris.

MESH GUARD

Lift-It® Mesh guard features a unique combination of wear protection materials. A layer of felt buffers the sling, while carbon steel wire mesh covers the load edge.

Hook and loop closure bands make attachment and removal quick and easy.



SHACKLE PIN PROTECTOR PADS

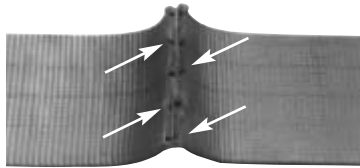


If you must rig on the pin, protect your sling with a shackle pin protector pad.

- * Full length protection, including the ear seams.
- * Three connection points secure pad to shackle
- * Installation and removal in seconds.

Design Features

RED CORE WARNING YARNS



Lift-It® webbing has inner load bearing yarns that carry over 70% of the load. Woven into this same layer are red core warning yarns, which may become visible as the protective outer cover is worn away. The exposure of these yarns provides the sling user/inspector with a signal to remove the sling from service.

In some applications, sling become extremely dirty, making it difficult to see the red core warning yarns.

WARNING DO NOT USE SLINGS THAT ARE STRUCTURALLY DAMAGED, IF THE RED CORE WARNING YARNS ARE NOT VISIBLE.

WEAR OR DAMAGE TO THE COVER YARNS OF SLING WEBBING RESULTS IN IMMEDIATE STRENGTH LOSS.

SLING TAG / WARNING TAG



A heavy duty, branded, leather tag is attached to all slings. The necessary information required by the various regulatory agencies is hot branded into genuine leather, resulting in the most durable tag available. Hitch diagrams, date of manufacture and a unique sling identification number are also included. Custom tags can also be attached for a nominal charge. In addition to the sling tag, a warning tag is also attached. It contains important safety information in icon format to transcend language, literacy and comprehension barriers. The warning tag also contains information for removal from service, from an OSHA and ASME perspective. Proper use, care, inspection and loss control measures are enhanced by the Lift-It® tag and warning system.

Sling Inspection

INSPECTION SYSTEM

A specific procedure for the inspection of synthetic slings is the best safeguard against sling damage and abuse. We recommend that you employ a three stage level of inspection. Slings removed from service that are not capable of repair should be destroyed and rendered completely unfit for any future use.

INITIAL

The Web Sling and Tiedown Association defines the initial level of inspection as, "Before any new or repaired sling is placed in service, it shall be inspected by a designated person to ensure that the correct sling is being used, as well as to determine that the sling meets the applicable requirements."

The American Society of Mechanical Engineers also states in the initial inspection that, "prior to use, all new, altered, modified or repaired slings shall be inspected by a designated person to verify compliance to all applicable standards".

The initial level of inspection is done upon receipt to ensure that no damage has occurred during transit. The products must also be verified to be correct, as ordered and that they comply with the manufacturer's specifications. Without printed product specifications this comparison cannot be accomplished. If written records for individual slings are to be maintained, the specific sling information should be initiated at this level of inspection.

FREQUENT

The frequent level of inspection should be done by the person handling the sling, before every use. The entire sling should be thoroughly examined and removed from service if damage is detected. OSHA stipulates that, "each day before being used, the sling and all fastenings and attachments shall be inspected for damage and defects by a competent person designated by the employer."

The sling user and designated/qualified person must also determine that the sling is proper for the intended use, hitch, load and environment. Any condition that may result in a hazard shall cause the sling to be removed from service. Written inspection records are not required for frequent inspections.

PERIODIC

The periodic level of inspection should be done by designated personnel at regular intervals. The interval is based upon: the frequency of use, severity of the service conditions and information derived through the inspection process. Recommendations to prevent damage must be evaluated to improve the service life of the replacement slings. Periodic inspection intervals shall not exceed one year intervals.

ASME states that guidelines for the inspection time intervals are as follows:

Normal Service--Yearly

Severe Service---Monthly or Quarterly

Special Service--As recommended by a qualified person

Written records of the most recent periodic inspection shall be maintained. Reference to a unique, sling identification number is not required. Records and documentation should be kept in the safety office or at the specific sling storage area.

REMOVAL FROM SERVICE CRITERIA

OSHA 1910.184 - REMOVAL FROM SERVICE CRITERIA

Synthetic web slings shall be immediately removed from service if any of the following conditions are present:

- (I) Acid or caustic burns
- (II) Melting or charring on any part of the sling surface
- (III) Snags, punctures, tears, or cuts
- (IV) Broken or worn stitches
- (V) Distortion of fittings

ASME B30.9 - REMOVAL FROM SERVICE CRITERIA

- a) Missing or illegible sling identification
Section 9-5.7.1 requires that each sling be marked to show the following:
 - 1) name or trademark of the manufacturer
 - 2) manufacturer's code or stock number
 - 3) rated loads for the type(s) of hitch(es) used and the angle upon which it is based
 - 4) type of synthetic material
- b) Acid or caustic burns
- c) Melting or charring of any part of the sling
- d) Holes, tears, cuts or snags
- e) Broken or worn stitching in the load bearing splices
- f) Excessive abrasive wear
- g) Knots in any part of the sling
- h) Discoloration and brittle or stiff areas on any part of the sling, which may mean chemical or ultraviolet/sunlight damage.
- i) Fittings that are pitted, corroded, cracked, bent, twisted, gouged or broken
- j) For hooks, removal criteria as stated in ASME B30.10
- k) For other applicable hardware, removal criteria as stated in ASME B30.26
- l) Other conditions, including visible damage, that cause doubt as to the continued use of the sling.



WARNING

REMOVE FROM SERVICE IMMEDIATELY



ACID



SNAGS



PUNCTURES



MELTING OR CHARRING



EDGE CUT



RED CORE YARNS



ABRASIONS



EYE DAMAGE



EMBEDDED MATERIALS



BROKEN STITCHING



KNOTS



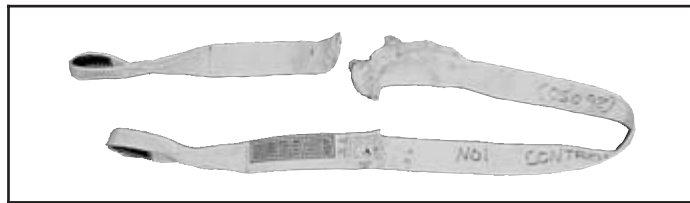
UV DEGRADATION

Effects of "Minor" Damage

Four, identical, single ply slings (3 inch wide) were fabricated from a single roll of webbing. All independent variables were controlled as the same thread, machine and sling fabricator were used for this exercise. With a vertical work load limit of 4800 lbs., we would expect a 24,000 lbs. break strength. The control sling broke at 26,050 lbs. The remaining three slings were cut on one edge to different depths. The "minor" damage resulted in very significant strength loss.

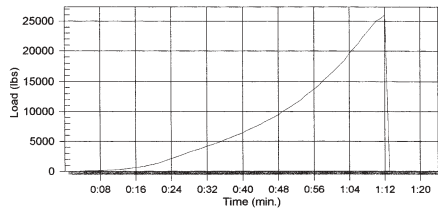
⚠ WARNING "Minor" damage is extremely serious and damaged slings must be removed from service, immediately to prevent injury and death.

CONTROL BREAK- 26,050 LBS.

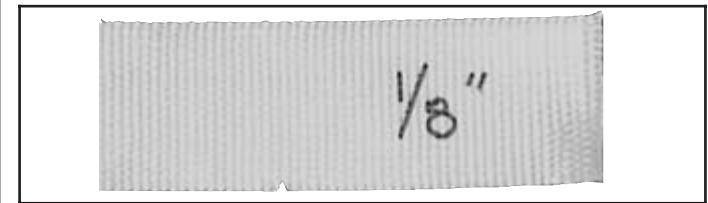


Certificate of Test

Customer: DESTRUCTION TESTINS Test Number: 7497
 Serial No.: 1 Test Date: 04/17/02
 Order No.: 131018 - 1 Description: VERTICAL BREAK TEST
 PO number: Test Method: Break
 Part No.: EE1-903 HT Peak Load: 26,050 lbs.
 Length: 8 ft. Test Duration: 1.4 Minutes

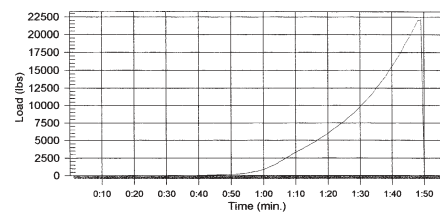


1/8 IN. CUT - 22,150 LBS.

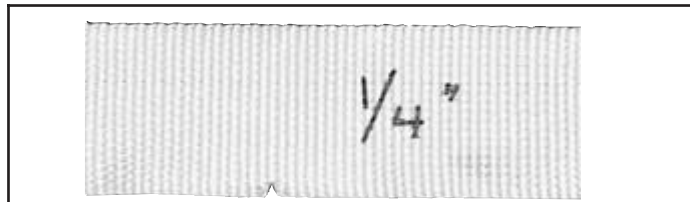


Certificate of Test

Customer: DESTRUCTION TESTINS Test Number: 7498
 Serial No.: 2 Test Date: 04/17/02
 Order No.: 131018 - 2 Description: VERTICAL BREAK TEST
 PO number: Test Method: Break
 Part No.: EE1-903 HT Peak Load: 22,150 lbs.
 Length: 8 ft. Test Duration: 1.9 Minutes

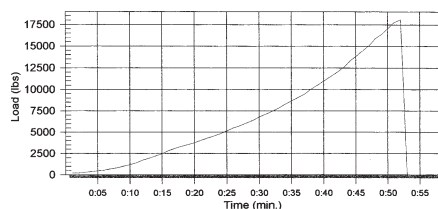


1/4 IN. CUT - 18,090 LBS.

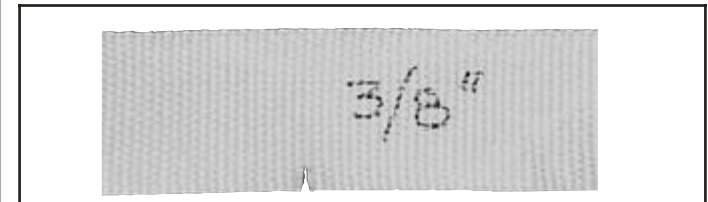


Certificate of Test

Customer: DESTRUCTION TESTINS Test Number: 7499
 Serial No.: 3 Test Date: 04/17/02
 Order No.: 131018 - 3 Description: VERTICAL BREAK TEST
 PO number: Test Method: Break
 Part No.: EE1-903 HT Peak Load: 18,090 lbs.
 Length: 8 ft. Test Duration: 0.9 Minutes

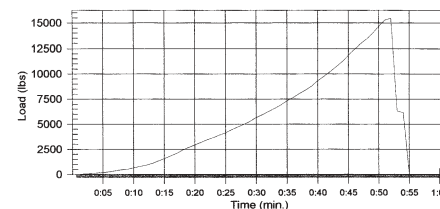


3/8 IN. CUT - 15,480 LBS.



Certificate of Test

Customer: DESTRUCTION TESTINS Test Number: 7500
 Serial No.: 4 Test Date: 04/17/02
 Order No.: 131018 - 4 Description: VERTICAL BREAK TEST
 PO number: Test Method: Break
 Part No.: EE1-903 HT Peak Load: 15,480 lbs.
 Length: 8 ft. Test Duration: 1.0 Minutes



ENVIRONMENTAL CONSIDERATIONS

ULTRAVIOLET (UV) LIGHT

Environments where synthetic webbing slings are continuously exposed to ultraviolet light can affect the strength of synthetic webbing slings in varying degrees ranging from slight to total degradation. Factors which affect the degree of strength loss are the length of continuous exposure time, sling construction, design and other environmental factors such as, weather conditions, elevation and geographic location. Initially, nylon web slings lose strength at a slower rate, when compared to polyester slings, but continued to lose strength as the exposure time is extended. The loss of strength for nylon slings can be 40 to 60% after exposure for periods ranging from 12 to 36 months. Polyester web slings lose strength at a greater rate, when compared to nylon slings. Loss in strength for polyester slings was approximately 30% after 12 months exposure. Polyester sling strength loss seemed to subside and level off after the initial 12 month period. Visual indicators of ultraviolet degradation are a bleaching out of sling color, increased stiffness of the sling material and the appearance of abrasion in areas not normally in contact with the load. Slings used in environments where they are subject to continuous exposure to ultraviolet light should be proof tested to two times the work load limit, semi-annually, or more frequently depending on the severity of exposure.

TEMPERATURE

Conventional synthetic products should never be used at temperatures in excess of 194°F (90°C). Cold temperature exposure to -40°F/(-40°C) does not affect the strength of the synthetic sling. Temperature exposure outside the acceptable range must be considered and evaluated by the user.

STORAGE

When not in use, store slings in a cool, dry, dark location, free of mechanical and environmental damage. The storage location should be ventilated and not exposed to heat sources, weld splatter, or grit and splinters from grinding.

FOREIGN MATERIAL

Metal chips, weld splatter or heavy grit can damage a sling both externally and internally.

CHEMICAL

Chemically active environments can affect the strength of synthetic products in varying degrees ranging from moderate to total degradation. Before slings are used, the chemical compatibility between the sling components and the environment must be considered. Consult the sling manufacturer before purchasing to ensure the synthetic products and their components are chemically compatible with the environment.

WATER

When nylon products are "wet", they experience a 15% reduction in strength. Polyester loses no strength when wet.

SALT WATER

Slings that have been exposed to saltwater should be thoroughly rinsed and allowed to dry, preferably out of direct sunlight.

Mechanical and Operational Considerations

Select the sling having the most suitable characteristics for the type of load, hitch and environment.

Determine that the weight of the load is within the work load limit of the sling.

Slings shall not be loaded in excess of the work load limits. Consideration should be given to the angle of lift, (sling-to-load angle) which affects the work load limit of the sling. Diameters of pins and load contact edges also may affect the work load limit of the sling.

WARNING Do not exceed work load limits.

You are cautioned that all published work load limits and break strengths apply to only new and unused slings, assemblies and hardware. Work load limits are based upon: material strength, design factor, type of hitch, angle of loading, the diameter and curvature that the sling contacts, and destruction testing done in laboratory controlled, testing conditions, which will never be duplicated during actual usage. Working Load limits are also based on a moderately dynamic lifting or pulling operation. Instantaneous changes (drops or sudden pick ups) in excess of 10% of the work load constitute hazardous shock loading and THE WORKING LOAD LIMITS AS STATED, DO NOT APPLY.

Do not accelerate or de-accelerate the load too fast. The "G" force on a 1000 lbs. load dropped 3 feet could surpass the ultimate strength of the sling. A load picked up too fast can develop a stretch/friction/surface heat that will surpass the melting temperature of the sling.

WARNING Working load limits for Multi-Leg Bridle Assemblies are based on the following conditions:

1. Even load weight distribution on all legs.
2. The bridle legs being same length. If the legs are not sharing the load equally, the assembly design factor is reduced.
3. All bridle legs used at the same horizontal angle.
If the conditions of the lift vary from those above, the work load limit must be recalculated.

The sling shall be securely attached to the load and rigged in a manner to provide for load control. The sling must be rigged to prevent slipping and sliding along the load edge. Slings "skipping" through hardware components in the sling system can become damaged. Balancing and controlling the load is critical and necessary to prevent sling damage and failure. Multiple factors must be taken into consideration to ensure that load control and stability are attained.

WARNING A load with a "high" center of gravity can rotate in certain sling hitches.

Sling legs should contain or support the load from the sides above the center of gravity when using a basket hitch.

Load edges in contact with the sling must be "padded" with materials of sufficient thickness or strength to prevent sling damage. The protection must be installed and evaluated for suitability by raising the load, slightly and then lowering the load for an inspection of the sling and the protection devices. Several "test" lifts may be necessary to determine the proper form of protection for a successful lift.

WARNING Wear protection may not prevent cutting or other forms of sling damage. To avoid severe personal injury or death, personnel should be kept away from the load and never be under or near the load, while it is being lifted or suspended. Never stand near or in line with a sling, under tension.

Synthetic slings shall not be shortened, lengthened, tied in knots, or joined by knotting.

Twisting and kinking the sling legs shall be avoided.

Slings used in a choker hitch must be of adequate length for the choke action to occur on the sling body. The choke action should not occur on the fitting or eye, at the base of the fitting or eye, on the load carrying splice or the sling tag.

Slings used in a choker hitch shall not be forced to tighten around the load by pounding with hammers or other objects. Choker hitches are the least efficient way to use a sling based on work load limit. Two slings should be used to balance the load. One sling used in a choker hitch may result in a situation where an unbalanced load could lead to an accident.

A sling rigged in a choke hitch (not double wrapped) does not make full contact with the load. Use multiple slings, and wrap the load, when practical to ensure full contact. Do not allow the slings to cross over each other.

Always refer to the sling tag to determine the sling work load limit. Keep the sling tags and labels away from the load, the hook and the choke action of the sling. The sling tag should be maintained and kept legible during the life cycle of the sling by the sling user.

Do not place the load carrying splice in a connection point to the load or in the lifting mechanism. Synthetic products stretch when the load is applied. Stretching can be reduced by using polyester slings, slings with larger work load limits or by selecting a low elongation, High Performance Fiber, Twin-Path® Sling.

WARNING Aluminum Hardware is severely degraded by alkali, caustic and acidic environments. Salt water also degrades aluminum. Aluminum hardware should never be exposed to chlorine environments or cleaned with chlorine based solutions. Steel hardware is not impervious to these elements. Chemical and environmental compatibility must be assessed and suitability determined by the user. Avoid contact of hardware with load edges.

WARNING The hook latch is designed to retain slings under slack conditions. The hook latch is not intended to support the load.

Caution: The use of G Links™ on larger stock diameters than recommended may lower the design factor.

WARNING Placing synthetic slings on the shackle pin should be avoided. Even a new shackle can have damaging, exposed threads. If the synthetic sling contacts this area, it can be cut and fail catastrophically. If you must rig on the pin, protect your sling with a shackle pin protector pad.

WARNING The use of improper fittings and/or materials may result in severe personal injury or death.

Synthetic slings shall not be constricted or bunched between the ears of a clevis or shackle, or in a hook.

All hooks, shackles and other fittings must be free of edges and surfaces that could damage the sling.

All loads applied to the lifting hook should be centered in the "bowl" of the hook to prevent point loading

The opening in the fitting should be one of the proper shape and size to ensure that the fitting will seat properly in the lifting hook or other points of attachment.

The fittings used in a sling system must be of the proper shape, size and diameter to prevent damage to the sling. The "sling-fitting" relationship must be proper to ensure that the sling will seat properly and, in doing so, derive the greatest work load limit.

Sling hardware or any object in the sling eye should not be wider than one-third the length of the eye.

Attached sling hardware may be returned to the manufacturer for possible reuse. It must be tested to twice the work load limit.

Slings shall not be dragged on the ground, floor or over abrasive surfaces.

Slings shall not be pulled from under loads when the load is resting on the sling.

Loads resting on the sling could damage the sling. If feasible, place blocks under the load prior to setting down the load to allow removal of the sling.

Synthetic slings should never be used to pull an object in a snagged or constrained condition. Synthetic slings are designed to stretch; the recoil caused by any sudden release of a lifting constraint could result in a dangerous projection of the load.

During the lift, with or without load, personnel shall be alert for possible snagging.

Do not drop objects on slings or slings equipped with metal fittings.

Do not run over slings with trucks or other equipment.

Personnel should stand clear of the load and shall not ride the load.

Personnel should never be under, or on a live or suspended load.

Portions of the human body shall not be placed between the sling and load or between the sling and lifting hook.

Synthetic slings shall not be used as bridles on suspended personnel platforms.

WARNING Steam cleaning at temperatures in excess of 194°F (90°C) can damage the sling. Power or pressure washing can force residue inside web and yarn fibers. The foreign material can cause internal yarn and fiber damage.

WARNING Wide Body Cargo and Attached Eye Cargo slings are for use in Basket Hitches Only. Hose Handling, Pipe Lifting Sling with quick disconnect and Remote Release Slings are for use in Choker Hitches Only.



WARNING TO THE USER OF SYNTHETIC SLINGS

WARNING Failure to follow proper use, care and inspection criteria could result in severe personal injury or death. Synthetic products will fail if damaged, abused, misused, overused, or improperly maintained.

WARNING It is your explicit responsibility to consider all risk factors prior to using any rigging device or product. Read and understand the information contained in this bulletin, in our catalog, on our web site www.lift-it.com and follow OSHA and ASME guidelines. Use by untrained persons is hazardous.

The American Society of Mechanical Engineers, in the Sling Safety Standard, ASME B30.9-2003, clearly establishes the requirement for training. Sections 9-5.1 and 9-6.1-Training states, "Synthetic webbing and round sling users shall be trained in the selection, inspection, cautions to personnel, effects of the environment and rigging practices, covered by this chapter."

WARNING All Products supplied and manufactured by Lift-It® Manufacturing are sold with express understanding that the purchaser and user are thoroughly familiar with the safe and proper use and application of the product. The qualified person and sling user has the responsibility for use and application, and should have sufficient training and knowledge of all applicable standards to responsibly use our products.

ACCIDENT PREVENTION THROUGH EDUCATION

If you are not trained in the use of synthetic lifting slings, you and your employer should consider the Lift-It® Sling Safety Program. The benefits of educating synthetic sling users, prior to death or injury, clearly outweigh any effort done in reaction to a liability incident. The Lift-It® Sling Safety Program is concise and coordinates the users, the inspection process and your facility. The program results in an ongoing and viable system that protects the sling user, property and the corporate bottom line.

The Sling Safety Program provides detailed instruction to all parties who are involved in rigging and hoisting loads. Participants should include specialized and incidental riggers, sling inspectors, safety and training, loss control, quality assurance, tool room and purchasing personnel.

Our goal is accident prevention through education. The cost for our services is truly incidental when compared to expense of a single "incident". If together we prevent just one accident, then we have accomplished our objective. Contact us for a mutually convenient training date and take the first step to improve overall efficiency and safety consciousness.

ON-SITE PROGRAMS

Thousands of sling users and inspectors have been educated, on location, through the Lift-It® Sling Safety Program.

The preferred program is a two day seminar. Day one features either an eight hour sling user /inspector class or two of the four classes. Day two features a sling inspector class and a facility program. Arrange the four hour class modules in any sequence desired to attain your specific scheduling and training objectives. Invite other interested parties to your program and "share" not only the cost, but the benefit.

PROGRAM CURRICULUM

SLING USER CLASS

The Sling User Class includes: sling input materials, sling designs and design features, on a generic level, with the emphasis placed upon proper application and usage. Mechanical considerations and topics such as: sling angles and tension, center of gravity, load factors and wear protection are also explored in an interactive format. Environmental considerations such as: water, temperature, chemical exposure and ultraviolet light are also examined. Sling inspection systems, techniques and removal from service criteria are also presented in the sling user class.

Recommended class size: 12-75 Class duration: 4 hours or 8 hours

DESIGNATED INSPECTOR CLASS

The Designated Inspector Class provides detailed training in sling inspection techniques per ASME B30.9 and OSHA 1910.184. General information and sling damage, with a heavy emphasis upon cause-effect and recommendation are presented. In addition, sling inspection systems, techniques and removal from service criteria are covered. The Sling User Class is recommended as a prerequisite, but not required.

Recommended class size: 25 Class duration: 4 hours

FACILITY PROGRAM

The Facility Program takes participants from the classroom into the "real" world, as actual inspections are conducted. Sling storage locations and consumption patterns are analyzed, from the perspective of inventory management. The need for wear protection is also reinforced to maximize sling service life and overall safety. The Designated Inspector Class is a mandatory prerequisite for the Facility Program.

Recommended class size: 12 Class duration: 4 hours or 8 hours

ADVANCED RIGGING

Advanced Rigging features advanced weight calculations, center of gravity determinations, composite centers of gravity, load moment considerations and calculations, as well as, compound angles. The Sling User class is a mandatory prerequisite.

Recommended class size: 25 Class duration: 4 hours



*"When Only the Best
is Good Enough"*



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