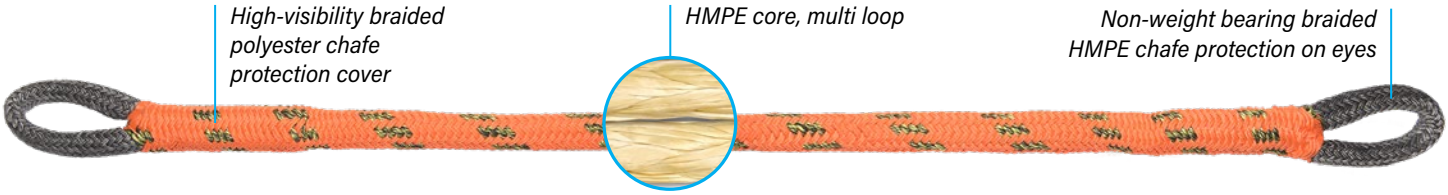
Taurus™ Lifting Sling USE & RETIREMENT

PRODUCT DETAILS

Taurus general-purpose lifting slings conform to ASME B30.9 and are tagged with working load limits (WLL) for vertical, basket, and choker configurations at a safety factor of 5. Taurus Lifting Slings utilize a strength-optimized HMPE core fabricated into a multi-loop sling, protected by non-weight bearing braided HMPE chafe eyes and a high-vis braided polyester chafe body. Available with vertical WLL ranging from 30,000 to 400,000 lb. (13,600 to 181,000 kg) and lengths from 10 ft. to 50 ft. (3 to 15 m) (size dependent).

Taurus sling tags include working load limits for vertical, basket, and choker configurations.

TAURUS SLING ANATOMY:



TECHNICAL SPECIFICATIONS:

PRODUCT CODE: 807
FIBER (CORE/COVER): HMPE / Polyester
COLOR: Orange/Charcoal with Green/Black ID
CONSTRUCTION: Fabricated Multi-loop Sling

FEATURES & BENEFITS

- High strength and abrasion resistant
- A fraction the weight of chain for safer handling and easy changeouts
- Flexible

GENERAL GUIDANCE

PROTECT YOURSELF AND OTHERS

- ALWAYS INSPECT rope for WEAR, DAMAGE, or ABUSE.
- NEVER USE rope that is WORN-OUT, DAMAGED, or ABUSED.
- Ropes are used for a variety of personal and commercial applications. To minimize the risks associated with product misuse, obtain the appropriate training for the specific application before using the rope.
- Use the right size and rope construction for the intended application.
- Never stand in line with or in the general path of rope under tension to avoid the risk of injury caused by recoil.
- Avoid rope contact with abrasive surfaces.
- Do not overload rope, shock load rope, or bend rope over sharp corners.
- Check temperature rating of rope product before using rope in hot environments.

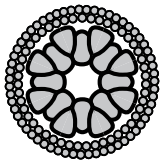
If in doubt about the condition of the rope, retire it.

INSPECTION

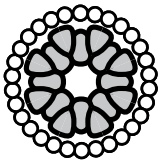
One frequently asked question is, "When should I retire my rope?" The most obvious answer is, "Before it breaks." But, without a thorough understanding of how to inspect it and knowing the load history, you are left making an educated guess. Unfortunately, there are no definitive rules or industry guidelines to establish when a rope should be retired because there are so many variables that affect rope strength. Factors such as load history, bending radius, abrasion, chemical exposure, or some combination of those factors, make retirement decisions difficult.

Inspecting your rope should be a continuous process of observation before, during, and after each use.

In synthetic fiber ropes, the amount of strength loss due to abrasion and/or flexing is directly related to the amount of broken fiber in the rope's cross section. After each use, look and feel along every inch of the rope length inspecting for cut strands, compression, pulled strands, melted, or glazed fiber, discoloration, degradation, inconsistent diameter and abrasion. Glossy or glazed areas, inconsistencies in texture, and stiffness are indicators that the rope has been subjected to elevated temperatures, has embedded grit, or has been subjected to shock loading and possible loss of strength.



STANDARD DOUBLE BRAID
Load shared between cover and core.



CORE-DEPENDENT DOUBLE BRAID
Load carried by the core only.

CUT STRANDS:

Taurus slings have 100% of their load-bearing capacity handled by the core alone. The chafe jacket can sustain damage without compromising the strength of the load-bearing core. Samson's Core Dependent Double Braid Inspection procedures apply to Taurus slings.

In core-dependent double braided ropes, 100% of the rope's strength is carried by the core. The cover functions as protection for the strength member. While cover damage does not affect the ropes' strength, a damaged cover can allow the strength-bearing core to be subjected to damage from abrasion or other mechanisms leading to reduction in strength. **Covers should be repaired when damage is evident.**

MELTED FIBER/ GLOSSY/ GLAZED AREAS

Glossy or glazed areas are signs of heat damage. The strength loss may be more than the amount of melted fiber indicates, as fibers adjacent to the melted areas are probably damaged from excessive heat even though they appear normal. The melted fiber will have likely damaged an equal amount of adjacent unmelted fiber.

DISCOLORATION

With use, all ropes get dirty. Be on the lookout for areas of discoloration that could be caused by chemical contamination. Determine the cause of the discoloration and replace the rope if it is brittle or stiff.

INCONSISTENT DIAMETER OR TEXTURE

Inspect for flat areas, bumps, or lumps. This can indicate core or internal damage from overloading or shock loads and is usually sufficient reason to replace the rope. Inconsistent texture or stiff areas can indicate excessive dirt or grit embedded in the rope or shock load damage and is usually reason to replace the rope.

TEMPERATURE

TAURUS FIBERS:
HMPE Core / Polyester Cover

FIBER TYPE	CRITICAL TEMP.*	MELTING TEMP.
HMPE	150° F (65° C)	300° F (150° C)
Polyester	350° F (176° C)	480° F (250° C)

**Critical temperature is the point at which fiber degradation is caused by temperature alone.*

High and low temperatures can influence rope performance in a variety of ways.

Ambient temperature conditions should be well understood and within the limits outlined in the table shown. Generally speaking, extremely cold temperatures commonly will not have a negative impact on rope performance.

However, moisture and subsequent freezing will impact a rope's handling and flexibility, but with no known negative long-term impact on rope life. High temperatures can reduce a rope's strength and fatigue resistance. If temperatures exceed the limits shown in table shown, special care should be taken to ensure the product is fit-for-purpose.

High temperatures can also be a more localized phenomenon as a result of the rope moving through equipment in the system, where heat is generated by friction. In order to minimize this heat generation, ropes with appropriate coefficient of friction (i.e. grip) should be chosen based on the needs of the system and/or application.

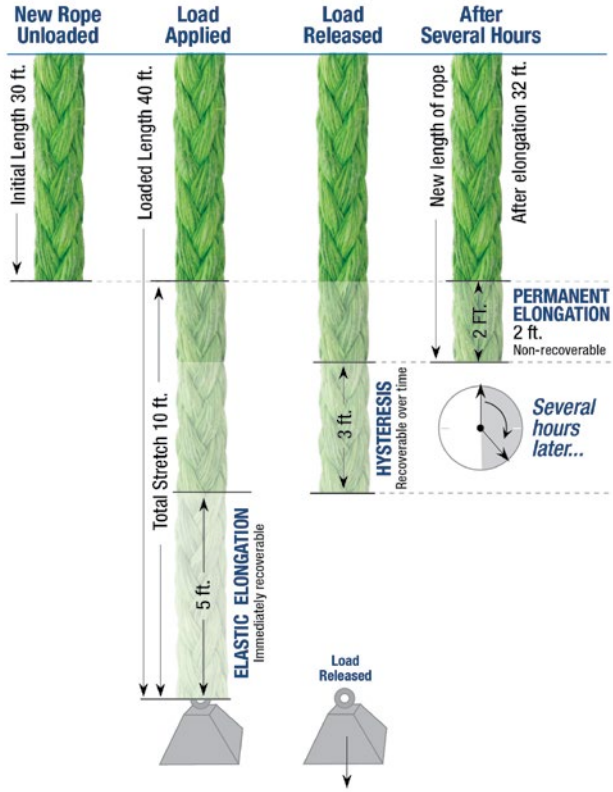
High temperatures can be generated when checking rope on hardware or running them over stuck or non-rolling sheaves or rollers.

Each rope's construction and fiber type will yield a different coefficient of friction (resistance to slipping) in a new or used state. It is important to understand the operational demands and take into account the size of the rope, construction, and fiber type to minimize localized heat buildup due to rope/hardware friction. Be aware of areas of heat buildup and take steps to minimize them.

LOAD BALANCING & POSITIONING

COMPONENTS OF STRETCH ON A LOADED ROPE

PUBLISHED ELASTIC ELONGATION DATA: All reported percentages are averages based on tests of new rope where tested ropes were stabilized by being cycled 50 times at each stated percentage of its average break strength.



STANDING UNDER LOAD

When performing rigging operations, persons should be warned against the serious danger of standing under or in line of a rope under tension.

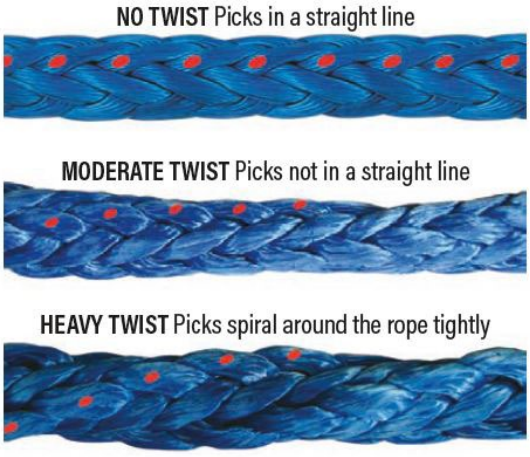
Should the rope part, it may recoil/release load with considerable force and speed. In all cases where any such risks are present, or when there is any question about the load involved or the condition of use, the design safety factor should be substantially increased and the rope should be properly inspected before every use.

TWIST

MINIMIZE TWIST IN THE LINED

Braided ropes are inherently torque neutral and, therefore, will not induce torque when tension is applied. However, it is important to prevent significant twist from being induced into the rope by outside factors such as handling, installation, or use in conjunction with a wire rope. Braided ropes that have been twisted can suffer from strength loss and accelerated degradation and therefore twist should be monitored and removed when identified.

The impact of twisting braided lines is highly dependent on amount of twist and the size of the rope. When in doubt, Samson has helpful references at ***SamsonRope.com*** or contact Samson directly.



CHEMICAL EXPOSURE

AVOID CHEMICAL EXPOSURE

Every rope is subject to damage by chemicals. Consult the manufacturer for specific chemical exposure, such as solvents, acids, and alkalis. Consult the manufacturer for recommendations when a rope will be used where chemical exposure (either fumes or actual contact) can occur.

STRENGTH RETENTION OF HMPE FIBER AFTER CHEMICAL IMMERSION

(HMPE strength retention after 6 months of immersion)

AGENT	HMPE	AGENT	HMPE
Sea Water	**100%**	5 M Sodium Hydroxide	**100%**
Hydraulic Fluid	**100%**	Ammonium Hydroxide (29%)	**100%**
Kerosene	**100%**	Hypophosphite Solution (5%)	**100%**
Gasoline	**100%**	Perchloroethylene	**100%**
Glacial Acetic Acid	**100%**	10% Detergent Solution	**100%**
1 M Hydrochloric Acid	**100%**	Bleach	**91%**

BEND DIAMETER

SIZING OF EYE SPLICE TO CONNECTION POINTS

Any sharp bend in a rope under load decreases its strength and may cause premature damage or failure. In sizing the hook, shackles, and pick points, the following guidelines are offered:

Where a rope is deflected more than 10 degrees around a surface, the effective diameter of that surface should not be less than three times the diameter of the rope.

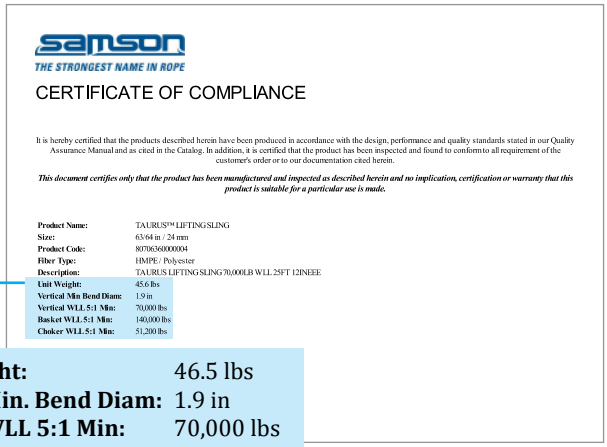
The ratio of the length of an eye splice to the diameter of the object over which the eye is to be placed (for example, a shackle) should be a minimum 3:1 relationship (larger is always preferred to improve durability). By using this ratio, the angle of the two legs of the eye at its throat will not be so severe as to cause a parting or tearing action at this point.

EYE SPREAD

Should not reach more than 60° to avoid splitting chafe

VERTICAL MIN. BEND DIAMETER

Each Taurus Lifting Sling is delivered with Samson's Certificate of Compliance, which includes weight, bend diameters, and working load limits for vertical, basket, and choker configurations.



samson
THE STRONGEST NAME IN ROPE

CERTIFICATE OF COMPLIANCE

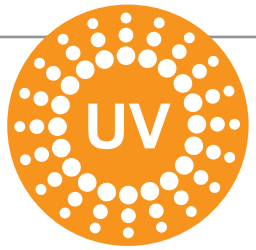
It is hereby certified that the products described herein have been produced in accordance with the design, performance and quality standards stated in our Quality Assurance Manual and as cited in the Catalog. In addition, it is certified that the product has been inspected and found to conform to all requirement of the customer's order or to our documentation cited herein.

This document certifies only that the product has been manufactured and inspected as described herein and no implication, certification or warranty that this product is suitable for a particular use is made.

Product Name:	TAURUS™ LIFTING SLING
Size:	63/64 in / 24 mm
Product Code:	807063600000004
Fiber Type:	HMPE / Polyester
Description:	TAURUS LIFTING SLING 70,000LB WLL 25FT 12INEEE
Unit Weight:	45.6 lbs
Vertical Min Bend Diam:	1.9 in
Vertical WLL 5:1 Min:	70,000 lbs
Basket WLL 5:1 Min:	140,000 lbs
Choker WLL 5:1 Min:	51,200 lbs

Unit Weight:	46.5 lbs
Vertical Min. Bend Diam:	1.9 in
Vertical WLL 5:1 Min:	70,000 lbs
Basket WLL 5:1 Min:	140,000 lbs
Choker WLL 5:1 Min:	51,200 lbs

UV EXPOSURE

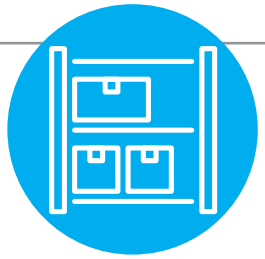


STRENGTH DEGRADATION FROM ULTRAVIOLET LIGHT

Prolonged exposure of synthetic ropes to ultraviolet (UV) radiation from sunlight and other sources may cause varying degrees of strength degradation. Samson designs products with coatings, fibers, and other attributes to combat such effects. However, the best way to avoid UV degradation is to limit exposure.

For slings frequently operating in outdoor environments, synthetic rope degradation due to ultraviolet (UV) light can be a point of concern. The Taurus design incorporates chafe material that protects the load bearing material.

ROPE STORAGE & CLEANING



STORAGE

All rope should be stored in a clean, dry area, out of direct sunlight, and away from extreme heat. It should be kept off the floor and on racks to provide ventilation underneath. Never store rope on a concrete or dirt floor, and under no circumstances should cordage and acid or alkalis be kept in the same vicinity. Some synthetic rope (in particular polypropylene and polyethylene) may be severely weakened by prolonged exposure to ultraviolet (UV) rays unless specifically stabilized and/or pigmented to increase UV resistance. UV degradation is indicated by discoloration and the presence of splinters and slivers on the surface of the rope. No shelf life has been established for synthetic fiber ropes and shelf life will vary based on storage conditions.

CLEANING

Full cleaning guide available at ***SamsonRope.com***
www.samsonrope.com/resources/general/rope-cleaning

ROPE HANDLING

- **Handle by lifting the whole rope**
- **Do not pull individual strands**
- **Avoid dragging on ground**
- **Avoid contact with rough surfaces and sharp edges**

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