TENEX™

POLYESTER SINGLE BRAID

Inspection and Retirement Pocket Guide

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Inspection and Retirement Quick Reference Tool

Any rope that has been in use for any period of time will show wear and tear. Some characteristics of a used rope will not reduce strength while others will. The following are typical conditions that should be inspected regularly.

If upon inspection you find any of these conditions, you must consider the following before deciding to repair or retire it:

- *the length of the rope,*
- *the time it has been in service,*
- *the type of work it does,*
- *where the damage is, and*
- *the extent of the damage.*

In general, we recommend:

- *Repairing the rope if the observed damage is in localized areas and the application permits.*
- *Retire the rope if the damage is over extended areas.*

Pulled Strand

REPAIR

WHAT

- Strand pulled away from the rest of the rope
- Is not cut or otherwise damaged

CAUSE

- Snagging on equipment or surfaces

CORRECTIVE ACTION

Work back into the rope

Cut Strand

REPAIR OR RETIRE

WHAT

> Two or more cut strands in proximity (within 2 ft.)

CAUSE

> Abrasion

> Sharp edges and surfaces

> Cyclic tension wear

CORRECTIVE ACTION

If possible, remove the affected section and resplice with a standard end-for-end splice. If re-splicing is not possible, retire the rope.

Melted or Glazed Fiber

REPAIR OR RETIRE

WHAT

- Fused fibers
- Visibly charred and melted fibers, yarns, or strands
- Extreme stiffness, unchanged by flexing

CAUSE

- Excessive heat buildup through friction
- External heat sources (> 480°F/248°C)

CORRECTIVE ACTION

If possible, remove the affected section and resplice with a standard end-for-end splice. If re-splicing is not possible, retire the rope.

Compression

REPAIR

WHAT

- Visible sheen
- Stiffness reduces by flexing the rope
- Not to be confused with melting
- Often seen on winch drums

CAUSE

- Fiber molding itself to the contact surface under a radial load

CORRECTIVE ACTION

Flex the rope to remove compression.

External Abrasion

External abrasion is the number one way synthetic ropes lose strength and degrade over time, typically caused by contact with external surfaces. For example, a rope pulled through a malfunctioning stringing block can be subjected to abrasion and heat buildup.

When trained, it is easy to see when outer strands are abraded by a rough surface. Often, fibers can be left behind on the surface that caused the abrasion, and the rope's surface readily shows abraded yarns.

Planning for and implementing regular inspections and maintenance of your rope will significantly reduce the risk of a line drop due to rope failure. In addition, documenting historical rope inspections and rope usage help round out a sustainable plan for safe usage and right-on-time retirement. If you are unsure of the condition of your rope, please contact your Samson representative.

Disclaimer: This information is based solely on testing used Tenex stringing lines performed by Samson and is provided as a guideline. Tested ropes did not exhibit significant internal abrasion, and the results are compared only to external abrasion.

Abrasion

REPAIR OR RETIRE

WHAT

- Broken filaments or yarns

CAUSE

- Abrasion
- Sharp edges and surfaces
- Cyclic tension wear

CORRECTIVE ACTION

Consult abrasion images and rate external abrasion level of rope. Evaluate rope based on its most damaged section.

- **Minimal strength loss (continue use)**
- **Strength loss (consult a qualified person)**
- **Severe strength loss (retire rope)**

EXTERNAL ABRASION LEVEL 1 **CONTINUE USE**

1 New rope rapidly appears fuzzy upon initial use.

EXTERNAL ABRASION LEVEL 2 **CONTINUE USE**

2 Progressing abrasion should be noted. Consider an environment or system adjustment if the rope wears quicker than expected.

EXTERNAL ABRASION LEVEL 3 **CONSULT QUALIFIED PERSON***

3 The rope has started to lose strength. Begin planning for retirement and replacement.

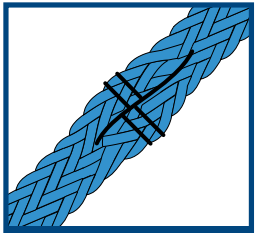
**A qualified person is someone who has demonstrated the ability to identify or resolve problems related to the use of Tenex. This typically includes a Samson or third party employee who has been properly trained.*

4

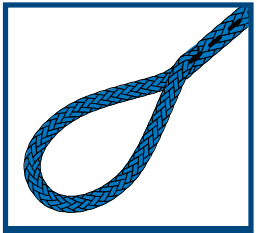
The rope has lost, or may soon lose, up to 50% of its original strength.

Additional Resources

Tenex Product Specifications



Tenex End-for-End Splice Instructions



Tenex Eye Splice Instructions

This information is provided as a guideline. If you are unsure about the condition of your Tenex line, please contact your sales or technical support representative.

Email: CustServ@SamsonRope.com

SamsonRope.com

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