Single Braid Inspection

SINGLE BRAID

PROTRUDING STRAND

Often, a strand will get snagged or pulled out from the rest of the rope. As long as the strand isn't broken, this is a repairable issue.

THE CAUSE

Protruding strands are generally caused by pulling or snagging on equipment or surfaces.

THE REPAIR

Work the strand back into the rope as soon as you notice it by carefully tugging on adjacent strands until the excess is distributed evenly. A protruding strand in service could easily snag or break, causing further complications.

SINGLE BRAID

ABRASION

Not all abrasion is harmful. When small surface fibers break on a rope, they create a fuzzy texture known as “mild abrasion.” This is normal and can even protect the rope from further wear. Extreme abrasion, though, should be monitored and addressed.

THE CAUSE

Excessive abrasion can be caused by repeated contact with sharp edges or rough surfaces. While you should expect mild abrasion as you break in your rope, abrasion that doesn’t stabilize after the first few uses might mean you’re losing strength. Inspect for excessive damage by looking closely at the inner and outer fibers. Powdered fiber is a sign of internal wear.

THE REPAIR

There isn’t a repair for abrasion, but you should still inspect for it. If the strength loss is minimal, go ahead and continue use. If the strength loss is moderate, consult Yale or retire the rope. If it’s excessive, always retire.

FUTURE PREVENTION

Always use slings when lifting, and avoid abrasive situations whenever possible, including rough surfaces and sharp edges. Keep your chocks, bits, winches, drums and other surfaces in good condition and free of burrs and rust. Make sure sheaves are the right size and are free to rotate. Don’t drag the rope over rough ground. Be sure to use clamps and similar devices with extreme caution.

SINGLE BRAID

MELTING OR GLAZING

When fibers are melted or fused, it's generally the result of rope abuse, and this type of damage can compromise strength. Look for visibly charred fibers or strands and stiffness that is unchanged by flexing.

THE CAUSE

Melting or glazing is generally caused by excessive load weights, exposure to heat or rapid descents/shock loading.

THE REPAIR

If possible, remove the affected section and re-splice with an end-for-end splice. Otherwise – or if you suspect the rope has experienced shock loading – retire the rope.

FUTURE PREVENTION

Avoid shock loads. Always work within the energy absorption range of your rope, and be sure you're using the right rope for the job. Shock loading sometimes happens by accident – for example, if a loaded rope jumps over a wrap of the winding spool. Using the winch line (instead of pole jacks) to pull pole butts can also result in shock loading.

SINGLE BRAID

CUT STRAND

When visually inspecting your rope, always look closely for any cut strands. Any cut strands will cause some loss of strength, and two or more close together may mean the rope needs to be retired. This particular rope should be discarded due to its heavy abrasion.

THE CAUSE

Cut strands could be caused by abrasion, sharp edges and surfaces, or cyclic tension wear.

THE REPAIR

If possible, remove the affected section and re-splice with an end-for-end splice. If re-splicing is not possible, retire the rope. As a general rule, 12-strand ropes should be retired when more than three broken strands are visible.

FUTURE PREVENTION

Always use slings when lifting, and avoid abrasive situations whenever possible, including rough surfaces and sharp edges. Keep your chocks, bits, winches, drums and other surfaces in good condition and free of burrs and rust. Make sure sheaves are the right size and are free to rotate. Don't drag the rope over rough ground. Be sure to use clamps and similar devices with extreme caution.

SINGLE BRAID

DIAMETER CHANGE

After use, it is normal for a rope to lose some of its diameter due to fiber abrasion. The appropriate repair is dependent on the level of reduction.

THE CAUSE

A diameter change is usually due to the loss of fiber through abrasion over time.

THE REPAIR

If the diameter is reduced by less than 10 percent, it is still able to remain in service. If the diameter reduction is 11—20 percent, downgrade the rope. Should the diameter reduction from new to used exceed 20 percent, retire the rope.

FUTURE PREVENTION

It is prudent to replace rope on a calendar schedule based on your original selection criteria.

NEW

USED

SINGLE BRAID

INCORRECT END-TO-END SPLICE

An incorrect end-to-end splice creates a disruption in the rope, to the extent that the rope's strength would be markedly reduced.

THE CAUSE

In this case, the user spliced the rope in the field without the benefit of proper splicing instructions, causing an incorrect end-to-end splice and significant disruption in the rope.

THE REPAIR

Re-splice the rope correctly.

Contact

When in doubt, ask for help. We would be happy to help you understand the rope's life cycle in your application.

Contact:
Yale Cordage Sales
77 Industrial Park Road
Saco, ME 04072
(207) 282-3396
yalecordage.com