

The **GANGLINE™** System Professionally Engineered Pipe Restraint System

INSPECTION CHART

12-STRAND ROPE INSPECTION AND RETIREMENT

Inspection and Retirement Checklist*

Any rope that has been in use for any period of time will show normal wear and tear. Some characteristics of a used rope will not reduce strength while others will. Below we have defined normal conditions that should be inspected on a regular basis.

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, it is recommended to repair the rope if the observed damage is in localized areas, or retire the rope if the damage is over extended areas.

*REFERENCES Cordage Institute International, *International Guideline C12001-04, Fiber-Rope Inspection and Retirement Criteria: Guidelines to Enhance Durability and the Safer Use of Rope*, 2004.

COMPRESSION *Not a permanent characteristic*

- WHAT** > Visible sheen
> Stiffness that is reduced by flexing the rope
> Not to be confused with melting
> Often seen on winch drums

CAUSE > Fiber setting

CORRECTIVE ACTION

Flex the rope to remove compression as needed



PULLED STRAND *Not a permanent characteristic*

- 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 loose strand back in to length of the rope



TWIST *Not a permanent characteristic*

- WHAT** > The line of pics spiral around the circumference of the rope

CAUSE > Unaligned during rigging — connection induced

CORRECTIVE ACTION

Remove lower rigging connection and straighten rope construction, reconnect, and continue



INSPECTION PROCEDURES

Internal abrasion can be determined by pulling one strand away from the others and looking for powdered or broken fiber filaments (Fig. 1 and Fig. 2).

To determine the extent of outer fiber damage from abrasion, a single yarn in all abraded areas should be examined. The diameter of the abraded yarn should then be compared to a portion of the same yarn or an adjacent yarn of the same type that has been protected by the same and crossover area and is free from abrasion damage (Fig. 3).



Inspect for pulled strands. Figure 2 Inspect for internal abrasion on.



Compare surface yarns with internal yarns.

REDUCED VOLUME *Repair or retire*



- WHAT** > 25% reduction
- CAUSE** > Abrasion
> Sharp edges and surfaces
> Cyclic tension wear

MELTED OR GLAZED FIBER *Repair or retire*



- WHAT** > Fused fibers
> Visibly charred and melted fibers, yarns, and/or strands
> Extreme stiffness
> Unchanged by flexing
- CAUSE** > Exposure to excessive heat

DISCOLORATION *Repair or retire*



- WHAT** > Fused fibers
> Brittle fibers
> Stiffness
- CAUSE** > Chemical contamination

INCONSISTENT DIAMETER *Repair or retire*



- WHAT** > Flat areas
> Lumps and bumps
- CAUSE** > Shock loading
> Broken internal strands

GANGLINE™

THE GANGLINE™ SYSTEM

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