# VISUAL ROPE INSPECTION Examples included herein are the most common types of wear and damage to rope and are for illustration purposes only.

### SINGLE BRAID INSPECTION

# Cut Strands: REPAIR OR RETIRE

WHAT > 12-STRANDS: Two or more cut strands in proximity

8-STRANDS/3-STRANDS:

One or more cut strands

**CAUSE** > Abrasion

> Sharp edges and surfaces

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



# **Pulled Strand:** REPAIR

> Strand pulled away from WHAT the rest of the rope

> Is not cut or otherwise damaged

CAUSE > Snagging on equipment or surfaces

**CORRECTIVE ACTION** 

Work back into the rope.

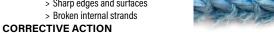


### **Abrasion: REPAIR OR RETIRE**

WHAT > Broken filaments and yarns

**CAUSE** > Abrasion

> Sharp edges and surfaces



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

Minimal strength loss (continue use)

Significant strength loss (consult Samson)

Severe strength loss (retire rope)

\*Refer to images on Inspection & Retirement Pocket Guide or Samson app.

#### **Melted or Glazed: 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, shock load, or a sustained high load

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

### **Discoloration: REPAIR OR RET**

**WHAT** > Fused fibers

> Brittle fibers

> Stiffness

**CAUSE** > Chemical contamination

> Common causes of discoloration (grease, paint, etc.) are less serious than true chemical contamination.

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

#### **Inconsistent Diameter: REPAIR**

WHAT > Flat areas

> Lumps and bumps

**CAUSE** > Broken internal strands

> Shock loading



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

# Compression: REPAIR

WHAT > Visible sheen

> Stiffness reduced 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.

#### DOUBLE BRAID INSPECTION

### Cut Strands: REPAIR OR RETIRE

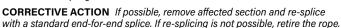
**DOUBLE BRAID:** Repair or retire **CORE-DEPENDENT:** May not affect strength

WHAT > Three or more cut strands

in proximity

CAUSE > Abrasion

> Sharp edges and surfaces



#### Pulled Strand: REPAIR

WHAT > Cover strand(s) 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.



#### **Abrasion:** REPAIR OR RETIRE

#### **DOUBLE BRAID:** Repair or retire **CORE-DEPENDENT:** May not affect strength

**WHAT** > Broken filaments and yarns CAUSE > Abrasion

> Sharp edges and surfaces

> Broken internal strands



#### **CORRECTIVE ACTION**

**DOUBLE BRAID:** If there is a 50% volume reduction of the cover yarns (or more), the rope should be retired.

CORE-DEPENDENT: If no damage to the core has occurred, the jacket can be repaired.

#### Melted or Glazed: 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, shock load, or a sustained high load

#### **CORRECTIVE ACTION**

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

### **Discoloration: REPAIR OR RETIRE**

WHAT > Fused fibers

> Brittle fibers > Stiffness

**CAUSE** > Chemical contamination



### CORRECTIVE ACTION

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

# Inconsistent Diameter: REPAIR

WHAT > Flat areas

> Lumps and bumps

CAUSE > Shock loading

> Broken internal strands



#### CORRECTIVE ACTION

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

