WIRE ROPE CONDITION RECORD

Quantitative condition tracking | Inspection and maintenance record

01 EQUIPMENT & WIRE ROPE IDENTIFICATION

Facility / location _____	**Equipment name / ID** _____	**Rope unique ID / tag** _____
Rope application / function _____	**Rope construction / class** _____	**Nominal diameter / units** _____
Installation date _____	**Inspection date** _____	**Inspector name / ID** _____

02 MEASUREMENTS & CONDITION ASSESSMENT

Mark one result per category. Record measured values and locations; compare with the rope manufacturer and applicable inspection criteria.

CONDITION / MEASUREMENT	FINDINGS / VALUE	PASS	MONITOR	FAIL
Diameter / reduction Measure across opposing strand crowns. Record nominal, baseline, minimum measured diameter and units.	_____	[ ]	[ ]	[ ]
Broken wires Record worst lay length, broken wires in one strand and any valley breaks.	_____	[ ]	[ ]	[ ]
Structural deformation Inspect for kinking, crushing, birdcaging, protruding core and strand displacement.	_____	[ ]	[ ]	[ ]
Corrosion / thermal condition Record rust, pitting, lubrication loss, heat discoloration or arc damage.	_____	[ ]	[ ]	[ ]
End fittings / terminations Check sockets, clips, sleeves, thimbles and dead ends for damage, wear or slippage.	_____	[ ]	[ ]	[ ]

03 MEASURED VALUES

Nominal diameter _____	**Baseline diameter** _____	**Lowest measured diameter** _____

Broken wires / one lay	Broken wires / one strand	Valley breaks / location
_____	_____	_____

Do not apply a universal percentage reduction or broken-wire count to every rope. Removal criteria depend on application, rope construction, equipment and applicable rules.

DEFICIENCY MAPPING & DISPOSITION

04 LOCATION-SPECIFIC FINDINGS

Identify each anomaly by distance from a fixed reference (e.g., 45 ft from hook), component, observed condition and severity.

05 CORRECTIVE ACTION / WORK ORDER

Defect reference / location	Work order / responsible person	Date reported
_____	_____	_____

06 FINAL EQUIPMENT STATUS

[ ] Satisfactory / continued service [ ] Monitor / re-inspect [ ] Removed from service

Inspector name / qualification	Inspector signature	Inspection date
_____	_____	_____
Supervisor / reviewer	**Supervisor signature**	**Review date**
_____	_____	_____

SAFETY HOLD POINT

Where a condition meets applicable removal-from-service criteria, remove the rope or equipment from service under the employer's procedures. Do not resume operation until an authorized determination and any required corrective action are complete.

FIELD REFERENCE GUIDE

Use alongside the manufacturer's instructions and the regulations and standards applicable to the equipment and rope. This page is a recording aid, not a universal rejection standard.

01 MEASURING ROPE DIAMETER

Use a suitable calibrated caliper or wire-rope micrometer. Measure across the widest opposing outer strand crowns, not the valleys. Take readings at representative locations and record the minimum and any unusual out-of-roundness.

Percent diameter reduction = (Nominal diameter - Measured diameter) / Nominal diameter x 100

02 IDENTIFYING ONE ROPE LAY

One rope lay is the axial distance over which an outer strand makes one complete revolution around the rope. Mark a strand, follow it through one complete turn, and measure that distance along the rope. Record the worst observed broken-wire counts in the relevant inspection length.

03 CONDITION CATEGORIES TO DOCUMENT

CONDITION / MEASUREMENT	FINDINGS / VALUE	PASS	MONITOR	FAIL
Broken wires Number, distribution, location and whether wires are at strand valleys or terminations.	_____	[ ]	[ ]	[ ]
Distortion Kinks, birdcaging, crushing, protruding wires or core, and strand displacement.	_____	[ ]	[ ]	[ ]
Wear and corrosion Abrasion, pitting, reduced diameter, lubrication condition and suspected internal damage.	_____	[ ]	[ ]	[ ]
Heat / electrical damage Heat tinting, arc strikes, melted lubricant or other thermal evidence.	_____	[ ]	[ ]	[ ]
Terminations Socket, clip, sleeve, thimble and dead-end condition; movement or slippage.	_____	[ ]	[ ]	[ ]

04 REMOVAL-FROM-SERVICE CRITERIA

The supplied reference form includes numerical limits for diameter loss and broken wires. These values are **not reproduced here as universal pass/fail thresholds** because the correct criteria depend on the rope and equipment application. For cranes subject to OSHA construction rules, consult **29 CFR 1926.1413** and other applicable provisions; consult relevant manufacturer guidance and ASME standards where applicable.