Rigging Equipment Inspection Checklist

This Rigging Equipment Inspection Checklist includes inspection requirements for all sling types (i.e., wire rope, alloy steel chain, metal mesh, natural and synthetic fiber rope, and synthetic wire) and hardware fastening components (e.g., shackles, bolts, swivels, hooks, etc.).

*Instructions:* **Each day** before being used, you must ensure that the sling and all fastenings and attachments are inspected for damage or defects by a competent person. Additional inspections must be performed during sling use where service conditions warrant, such as high heat temperatures. You must immediately remove damaged or defective slings from service.

Document rigging equipment inspections at least annually. Keep records on file for one year.

**Your name:**      \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date/time:      \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Location**:      \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit/department:**      \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Wire Rope Sling/Rigging Inspection

**If applicable, please complete the table below. If *not* applicable, check this box** **[ ] .**

Slings shall have a manufacturer’s label showing the rated capacity. Do *not* exceed rated capacity.

|  |  |  |
| --- | --- | --- |
| **Remove from service if *any* of the following apply:** | **Yes** | **No** |
| 10 randomly distributed **broken wires** in 1 rope lay, or 5 broken wires in 1 strand in 1 rope lay (refer to Figure 1 below) | [ ]  | [ ]  |
| **Wear or scraping** of 1/3rd the original diameter of outside individual wires | [ ]  | [ ]  |
| **Distortion** such as kinking, crushing, bird caging, displace wires | [ ]  | [ ]  |
| Evidence of **heat damage** from any cause | [ ]  | [ ]  |
| **End attachments** that are cracked, deformed, or worn | [ ]  | [ ]  |
| **Hooks** have been opened >15% of normal throat opening or twisted >10 degrees | [ ]  | [ ]  |

**Additional Information:**

*Figure 1: Wire rope components.*

*Created by Phillip Toone, OSHA DTSEM/SLTC*

1. Use sling protection and avoid load slippage.

2. Don’t choke on fittings, avoid pinch points.

3. Don’t place sling eye on large hook.

[WAC 296-24-29425](https://apps.leg.wa.gov/wac/default.aspx?cite=296-24-29425&pdf=true)

# Alloy Steel Chain Slings

**If applicable, please complete the table below. If *not* applicable, check this box [ ] .**

Do not exceed rated capacity. Slings shall have a manufacturer’s label with size, grade, rated capacity, and reach.

|  |  |  |
| --- | --- | --- |
| **Remove from service and discard if *any* of the following apply:** | **Yes** | **No** |
| Sling has been **heated** above 1000 °F. | [ ]  | [ ]  |
| **Cracked or deformed** master links, couplings, or other components | [ ]  | [ ]  |
| **Hooks** have been opened >15% of normal throat opening or twisted >10 degrees. | [ ]  | [ ]  |

**Additional information:**

1. Makeshift links or fasteners made from bolts or rods must not be used.

2. Mechanical coupling or low carbon steel repair links must not be used to repair broken lengths of chains.

3. Prior to use, all welded or mechanical components of new slings must be roof tested by the Manufacturer to twice the rated load. Proof test certificates can be requested of the manufacturer, if needed.

4. Latches on hooks must “seat properly, rotate freely, and show no permanent distortion.”

[WAC 296-24-29423](https://apps.leg.wa.gov/wac/default.aspx?cite=296-24-29423&pdf=true)



Figure 2: Multi-leg sling (osha.gov 1910.184)

# Synthetic Web Slings

**If applicable, please complete the table below. If *not* applicable, check this box [ ] .**

Slings shall have a manufacturer’s label showing the rated capacity. Do not exceed rated capacity.

Do not use nylon web or aluminum fittings near acid. Do not use polyester web around caustics.

Stitching is the only acceptable method to attach end fittings and form eyes.

|  |  |  |
| --- | --- | --- |
| **Remove from service if *any* of the following apply:** | **Yes** | **No** |
| Acid or caustic burns | [ ]  | [ ]  |
| Melting or charring of any part of the sling surface | [ ]  | [ ]  |
| Snags, punctures, tears, or cuts | [ ]  | [ ]  |
| Broken or worn stiches | [ ]  | [ ]  |
| Distortion of fittings | [ ]  | [ ]  |

**Additional Information:**

1. Use sling protection between edges and sling.

2. Do not shorten or lengthen using knots.

[WAC 296-24-29431](https://apps.leg.wa.gov/wac/default.aspx?cite=296-24-29431&pdf=true)



Figure 3: Synthetic slings

Source: mazzellacompanies.com

# Metal Mesh Slings

**If applicable, please complete the table below. If *not* applicable, check this box [ ] .**

|  |  |  |
| --- | --- | --- |
| **Remove from service if *any* of the following apply:** | **Yes** | **No** |
| A **broken weld** or broke brazed joint along the sling edge | [ ]  | [ ]  |
| Lack of **flexibility** due to distortion of the fabric | [ ]  | [ ]  |
| **Distortion** of the female handle so that the width of the eye is decreased more than 10% | [ ]  | [ ]  |
| **Distortion** of either handle so that the width of the eye is decreased more than 10% | [ ]  | [ ]  |
| A 15% reduction of the original cross-sectional area of metal at any point around the handle eye | [ ]  | [ ]  |
| **Distortion** of either handle out of its plane | [ ]  | [ ]  |

[WAC 296-24-29427](https://apps.leg.wa.gov/wac/default.aspx?cite=296-24-29427&pdf=true)

*Figure 4: Wire mesh slings*

*Source: mazzellacompanies.com*

# Natural and Synthetic Fiber Rope Slings

**If applicable, please complete the table below. If *not* applicable, check this box** [ ] **.**

**Repairs**: You must only use fiber rope slings made from new rope. Use of repaired or recondition fiber rope slings is prohibited.

|  |  |  |
| --- | --- | --- |
| **Remove from service if *any* of the following apply:** | **Yes** | **No** |
| **Abnormal** wear | [ ]  | [ ]  |
| **Powdered fiber** between strands | [ ]  | [ ]  |
| **Broken** or cut fibers | [ ]  | [ ]  |
| **Variations** in the size or roundness of strands | [ ]  | [ ]  |
| **Discoloration** or rotting | [ ]  | [ ]  |
| **Distortion** of hardware in the sling | [ ]  | [ ]  |

[WAC 296-24-29429](https://apps.leg.wa.gov/wac/default.aspx?cite=296-24-29429&pdf=true)

*Figure 5:* [*Synthetic fiber rope sling*](https://m.media-amazon.com/images/I/61uytfCAn6L._AC_SL1500_.jpg)

*Source: amazon.com*

# Rigging Accessories - Shackles, swivels, and hoist rings

**If applicable, please complete the table below. If *not* applicable, check this box** [ ] **.**

|  |  |  |
| --- | --- | --- |
| **Remove from service if any of the following apply:** | **Yes** | **No** |
| Indications of **heat damage**, including weld spatter or arc strikes | [ ]  | [ ]  |
| Excessive **pitting** or **corrosion** | [ ]  | [ ]  |
| Excessive **nicks** or **gouges** | [ ]  | [ ]  |
| **10% reduction** of the original (or catalog) dimension at any point | [ ]  | [ ]  |
| Excessive thread **damage** or **wear** | [ ]  | [ ]  |
| On **shackles,** also inspect for incomplete **pin engagement** | [ ]  | [ ]  |
| On **swivels and hoist rings,** check for lack of ability to freely rotate or pivot | [ ]  | [ ]  |

[WAC 296-155-55600](https://apps.leg.wa.gov/wac/default.aspx?cite=296-155-55600)





*Figure 7: Various shackles*

*Source: mazzellacompanies.com*

*Figure 6: Hardware fasteners; swivels, hooks*

*Source: mazzellacompanies.com*