2400 W. 75th Street
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Wire Rope Sling Inspections Reference

PURPOSE

The inspection of wire rope slings is required and necessary for regular use of the product. The purpose of a sling inspection is to determine if a wire rope sling retains sufficient capability to perform the work to be done before the next inspection.

NOTE: Reference ASME B30.9 Slings (Current Revision) and OSHA 1910.184 for detailed information regarding sling inspection requirements.

HOW OFTEN TO INSPECT

Both ASME Standard B30.9 and OSHA require that wire rope slings receive two types of inspections:

1. **FREQUENT INSPECTION:** The person handling the sling must do this each day or shift. This inspection should check for major damage or deterioration that would weaken the sling and for obvious signs such as broken wires, kinks, crushing, broken attachments and severe corrosion. Written records are not required for frequent inspections.

2. **PERIODIC INSPECTION:** These are based on frequency of sling use, severity of service conditions, the nature of the lifts and prior experience based on service life of slings used in similar circumstances. A designated person who has a working knowledge of wire rope must conduct these inspections. Inspection shall be conducted on the entire length of the sling, including splices, end attachments, and fitting hardware.

   Periodic inspections of wire rope slings shall be performed at intervals no greater than 12 months. A good guide to follow includes:

   A. Yearly for normal service use.
   B. Monthly to quarterly for severe service use
   C. As recommended by a qualified person for special and infrequent service use.

   Documentation of the most recent Periodic inspection is required to be maintained. Inspection records of individual slings is not required.

INSPECTION PERSONNEL

A designated person shall inspect slings and all associated hardware. Any deficiency identified during the inspection shall be inspected and a determination made by a Qualified person as to whether it constitutes a hazard. Any sling removed from service during an inspection shall not be returned to service until approved by a Qualified person.

HOW TO INSPECT

The following procedures are offered as a guide for conducting inspections:

1. Place the sling in a position that enables the inspector to access and see every part of the sling. The need to lift the sling is required to ensure the full body of the sling is accessible.
2. Clean off all dirt and grease with a wire brush or rags to reveal wires and fittings. Mild detergents may be used to assist in the cleaning of the product.
3. Examine the entire length of the sling thoroughly, especially the parts showing the most wear.
4. Pay special attention to fittings and end attachments and areas of the sling next to these fittings.
5. Inspect the Rated Capacity tag for presence and legible information. Do not remove the existing tag.
6. Find the most worn or damaged section of the sling and carefully check it against removal criteria.

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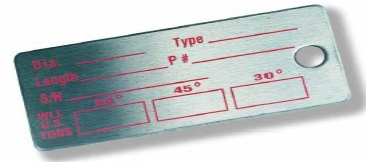
7. Label or identify all slings you've inspected.
8. Keep records of all inspections, including dates and conditions of slings.
9. Immediately destroy all slings you've rejected.
10. Store slings you want to reuse in a safe place away from damaging weather, heat and dirt.

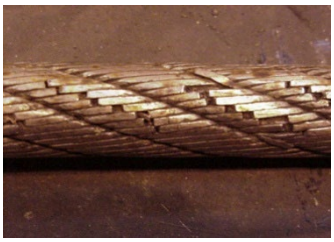
WHEN TO REPLACE YOUR WIRE ROPE SLING

According to ASME B30.9, you must remove a wire rope sling from service immediately if any of the following conditions are present:

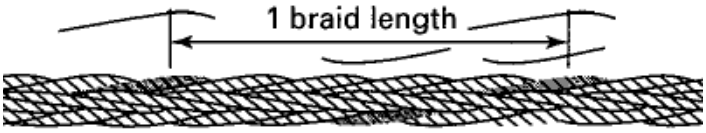
1. **RATED CAPACITY TAG** Missing or illegible sling identification tag.
    a. The Rated Capacity tag must show the following:
        i. The rated load for the types of hitches, and the angle upon which they are based.
        ii. The component diameter or size.
        iii. The name or trademark of the manufacturer.
        iv. Rated Capacity Tag Example



2. **BROKEN WIRES**
    a. For single part body slings and strand laid grommets:
        i. 5 broken wires in one strand in one rope lay or
        ii. 10 broken wires in all strands in one rope lay.
        iii. Rope must be bent and flexed during examination.



    b. For cable-laid, cable-laid grommets and multi-part slings, use the following guidelines.
        i. *Cable-laid grommet 20 per lay*
        ii. *Less than 8-part braid 20 per braid*
        iii. 8-part braid or more 40 per braid



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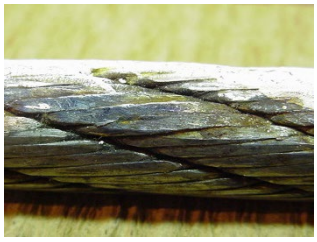
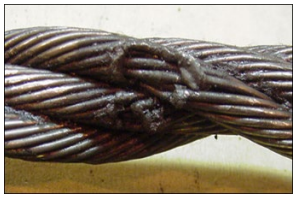
3. **METAL LOSS** Wear or scraping of one-third the original diameter of the outside individual wires.

a. Excessive metal loss 

4. **DISTORTION** Such as kinking, crushing or birdcaging. Look closely for wires or strands that may have been pushed out of their original positions in the rope.
5. **HEAT DAMAGE** Any metallic discoloration or loss of internal lubricant caused by heat exposure.

a. Heat damage from welding. 

6. **DAMAGED END ATTACHMENTS** Cracked, bent or broken fittings. Also, any evidence that eye splices have slipped, or tucked strands have moved.
7. **BENT HOOKS** No more than 15 percent over the normal throat openings (measured at the narrowest point) or twisting exceeding 10 degrees is permitted.
8. **METAL CORROSION** Severe corrosion of the rope or end attachments that has caused pitting or binding of wires. Light rusting doesn't normally affect a sling's strength.

Never ignore sling conditions or attempt to perform temporary repairs of damaged slings. It is critical to ensure that slings are regularly and properly inspected. If you are not sure whether or not a sling is damaged, DO NOT CONTINUE TO USE IT.

HOW TO DISPOSE OF A REJECTED WIRE ROPE SLING

Once the qualified person has determined a sling is no longer usable, he should tag it immediately, *"Do Not Use."* The sling should then be destroyed as soon as possible by cutting the eye and fittings from the rope. This will prevent accidental reuse of the sling.

WRTB Technical Bulletin: Guidelines on Strand Clearance in the Eyes of Wire Rope Slings

When an eye is formed in a sling, the rope is formed into a relatively sharp bend to form the eye. This bend increases the clearance between the strands on the outside of the eye and, in some cases, this clearance accumulates between two strands. This is not a reason for concern in a new sling, and the sling is acceptable for use.

The condition of all slings must be evaluated in accordance with ASME B30.9, or other applicable standards or regulations, in order to determine the suitability for continued use.

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Lubrication

Slings used under ordinary conditions should not require additional lubrication throughout their lifecycle. However, the surface of the wire rope sling may become covered with dirt, rock dust or other material during their operation and if a sling is stored outside or in an environment which would cause corrosion, lubrication should be applied during the service life to prevent rusting or corroding.

If lubrication of the wire rope is determined necessary, a light bodied lubricant similar to that applied during manufacture should be used. Your sling manufacturer can provide information on the type of lubricant to be used and best method of application.

Warning

The inspection of a wire rope sling is necessary for one very important reason: Wire rope is a "consumed" item. It is literally "used up" as it is used, and gradually loses strength during its useful life. The inspection of a wire rope sling is applicable to the sling at the time of inspection. The inspection of the sling does not warrant the sling to be in a new condition as the inspection is reflective of the existing condition. Wire rope slings shall only be used within the stated rated capacity of the sling. Concerns or questions regarding the condition of a wire rope sling should be directed at a Qualified Person or the Wire Rope Sling Manufacturer.