

## Rigging equipment inspection

Rigging of equipment and structural components in construction and manufacturing settings are performed thousands of times each day. With each lift, there is the possibility for a serious accident to occur. To reduce the chance of an accident occurring, a daily inspection of the rigging equipment is a must. All lifting devices are not created equal and require different items to inspect.

Below is a list of critical things to inspect on the various types of lifting devices. All lifting devices should be inspected prior to each use. Any device that is worn, damaged or stretched should be removed from service and tagged.

- Chain slings — good for lifting in high-temperature situations; fit the shape of the load; subject to damage from shock loading.
- Critical inspection points — cracks, elongated links, missing tags, cuts or links with abrasions and twisted link; when lifting, watch for binding of the chain.
- Fiber rope slings — good for lighter loads, does not mar or damage most finishes.
- Critical inspection points — deteriorate more rapidly than other lifting devices; stretch when wet and cut easily; must be inspected for broken fibers prior to each use; may not be applicable for high temperature lifts or where strong chemicals (acids) are used.
- Wire rope slings — very flexible, durable and provide great strength; can contour to the configuration of the item being lifted.
- Critical inspection points — watch for excessive wear, broken wires, excessive rust, pitting, flat spots, bird caging, kinks and the end fittings for cracks or deformation; heat stress can lead to weakening of the sling; some chemicals may cause metal wire to deteriorate.
- Synthetic web slings— used for many of the same lifting purposes; can lift heavy loads, are flexible, have rot-resistant characteristics, have minimal stretching, and can shape the contour of the item being lifted; different types of synthetic slings have different characteristics with regard to environmental conditions; Dacron slings resist some chemicals and polyester will stretch the minimum.
- Critical inspection points — subject to acid burns, holes, wear, cuts, knots, embedded items, tears and abrasion from rough surfaces; excessive heat will affect the strength of the sling; if exposed to high heat, may show signs of melting, discoloring or charring; sling may tend to be stiffer or harder in these areas; stitching should also be inspected to see if it is worn enough to expose the red warning threads; if any of these items are found, the sling should be removed from service.
- Wire or metal mesh slings — very durable, conform to the load and can be used in straight-, choker- or basket-type hitches.
- Critical inspection points — look for cracked or broken welds, distortion of the lifting eyes, bent webbing and corrosion.
- Rigging hardware (includes links, hooks, wire rope clips and shackles) — end fittings should be inspected for cracks, elongation, cuts and gouges, as well as excessive wear and deformation; never use lifting hardware if some of the pieces are missing; all lifting hardware is rated as a unit or pair; mixing hardware pieces can create a defective component; excessive wear is generally stated to be more than 5 percent of wear in the throat or eye of a shackle or more than 10 to 12 percent wear found in any other areas; latches, swivels, bearings, wire rope clips and wedge sockets should also be inspected; if any signs of deformation, bent or improper operations or signs of items being altered, it should be taken out of service.
- Hooks — crane hook is very important to the rigging equation; it should be inspected on a regular basis; each hook must have a safety latch, which should not be bent or twisted as it prevents the lifting device from twisting out of the hook.
- Critical inspection points — all hooks should be inspected for cracks, bending or distortion; hook opening should not be more than 15 percent of the normal throat opening; hook should not be twisted more than 10 percent from the plane of the unbent hook; swivels of the headache ball should be free to rotate.

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