To The Point
Boat Hoist Sling Safety

CHUBB®

Boat hoist slings are an often overlooked yet critical component of your boat hoist system. These synthetic web slings, made of either nylon or polyester, are susceptible to many deteriorating or damaging conditions during regular use. Effective protocols for sling inspection, care, and replacement must be in place to prevent potential damage, injury, or death from sling failure.

Types of Sling Deterioration or Damage

- **Cutting** is caused by contact with the boat keel, chine, or deck edge, evidenced by straight-line damage to one or more layers of the webbing yarns.
- **Snagging** is usually caused by hull protrusions, evidenced by pulls of the webbing surface yarns away from their fabricated surface.
- **Knots** are evidenced by the sling webbing not lying flat or curved in the width of the webbing.
- **Wear** is evidenced by broken synthetic fibers at the contact surface or scratch marks on metal surfaces and can be on any part of the load-bearing sling or rigging. It is also evidenced by the visibility of single-colored, wear-identification yarns in the web material.
- **Pinching or Crushing** is evidenced by the material's inability to sit or lay in the position that it was fabricated or manufactured or to no longer maintain a dimension to which it was fabricated or manufactured.
- **Heat Damage** is caused by welding, burning, or being pulled across an extremely hot surface, evidenced by the charring or melted condition of the webbing.
- **Chemical Damage** is evidenced by stains or brittleness of the webbing or a melted appearance.
- **Foreign Matter** is evidenced by a "gritty" feel to the synthetic webbing, possibly giving off a "dust" when the webbing is vigorously shaken.

- **Ultraviolet (UV) Damage** is evidenced by severe fading of the web material from its original color, stiffness in the webbing from its "new" condition, and chalky/ fuzzy surface texture. UV degradation can severely reduce a sling's lifting capacity. A study by the Web Sling and Tie Down Association (WSTDA) found that polyester slings can lose up to 30% of their strength in 12 months, and nylon slings can lose up to 60% of their strength in a period of 12–36 months. Degradation can occur without clearly visible indications, and the degradation speed depends on the time and severity of sunlight exposure.
- **Hardware/Fitting Damage** is evidenced by any visible distortion, cracks, breaks, pitting, or significant abrasion to the sling hardware/fittings.

If any of the conditions listed above are identified, the sling should be immediately taken out of service.

Inspections

Slings should be inspected before being placed into service and routinely before each use/lift.

The WSTDA states that web slings continuously exposed to sunlight/UV shall be proof tested to two times their working load limit, semi-annually or more frequently, depending on the severity of the exposure.

Sling Removal Criteria

Anytime a condition that causes the user to doubt the sling or rigging's ability to be used safely, the sling should be removed from service, and a qualified sling inspector consulted for further action.

WSTDA states that outdoor web slings should be removed/replaced after 2–4 years of use.

Annual replacement should be considered when web slings are exposed to continuous sunlight year-round.

Repairs

Slings should NEVER be repaired by a yard. Only the original sling manufacturer should perform any sling repair, who will test the repaired assembly to twice the assigned WLL per OSHA and ASME requirements.

Care & Storage

When caring for and storing slings, consider the following:

- Slings should not be dragged on the ground.
- Slings should not be driven over by vehicles or other equipment.
- Use chafe gear or pads with slings to stop damage at sharp edges, such as boat keels, chines, and deck edges. When not in use, slings should be kept in a cool, dry, and dark place, away from sunlight, to prevent continued stength loss through exposure to ultraviolet rays.

Boats are entrusted to yards for safe keeping, whether in storage or being serviced. An owner's most basic assumption is that the yard will assist with resolving vessel issues, not causing them. These simple guidelines can help prevent foreseeable damages to customers' boats that will cost your yard time, money, and customer goodwill.

Resources

WSTDA, www.wstda.com

Marine Travelift, www.marinetravelift.com/wp-content/uploads/2021/07/Synthetic-Web-Sling-Safety-Bulletin.pdf

Lift-It, www.lift-it.com/info-websling-inspection

Connect with Us

For more information about protecting your marine, contact your local Chubb Risk Engineer, email us at RiskEngineeringServices@chubb.com, or visit www.chubb.com/engineering.

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