

Cranes, Hoists & Slings – Appendix C: Wire Rope Slings

Sling Use: Employers must use only wire-rope slings that have permanently affixed and legible identification markings as prescribed by the manufacturer, and that indicate the recommended safe working load for the type(s) of hitch(es) used, the angle upon which it is based, and the number of legs if more than one.

Minimum Sling Lengths:

- Cable laid and 6 x 19 and 6 x 37 slings shall have a minimum clear length of wire rope 10 times the component rope diameter between splices, sleeves or end fittings.
- Braided slings shall have a minimum clear length of wire rope 40 times the component rope diameter between the loops or end fittings.
- Cable laid grommets, strand laid grommets and endless slings shall have a minimum circumferential length of 96 times their body diameter.

Safe Operating Temperatures: Fiber core wire rope slings of all grades shall be permanently removed from service if they are exposed to temperatures in excess of 200 °F. When non-fiber core wire rope slings of any grade are used at temperatures above 400 °F or below minus 60 °F, recommendations of the sling manufacturer regarding use at that temperature shall be followed.

End Attachments:

- Welding of end attachments, except covers to thimbles, shall be performed prior to the assembly of the sling.
- All welded end attachments shall not be used unless proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. The employer shall retain a certificate of the proof test, and make it available for examination.

Removal from Service: Wire rope slings shall be immediately removed from service if any of the following conditions are present:

- Ten randomly distributed broken wires in one rope lay, or five broken wires in one strand in one rope lay.
- Wear or scraping of one-third the original diameter of outside individual wires.
- Kinking, crushing, bird caging or any other damage resulting in distortion of the wire rope structure.
- Evidence of heat damage.
- End attachments that are cracked, deformed or worn.

- Hooks that have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.
- Corrosion of the rope or end attachments.