

Toolbox talk – Wire rope inspection

Explain dangers:

Damage from wear and tear can reduce rope strength and capacity, endangering workers who depend on the rope.

Identify controls:

Wire rope in continuous service should be inspected during operation and at least once a week.

There are warning signs to look for during inspection. Most of these warning signs indicate that the rope should be replaced.

Broken wires

Replace rope if there are

- 6 or more broken wires in one lay
- 3 or more broken wires in one strand in one lay
- 3 or more broken wires in one lay in standing ropes.

Worn/abraded wires

Replace rope if outer wires

- become flat from friction
- become shiny from wear AND
- wear exceeds 1/3 of diameter.

Reduced diameter

Replace rope if wear on individual wires exceeds 1/3 of their diameter.

Stretch

Replace 6-strand rope if stretch reduces diameter by more than 1/16.

Corrosion

Difficult to detect because it's inside the rope. Look for rust, discolouration, and pitting outside.

Cuts/burns

Replace rope if any wires or strands are cut or burned. Damaged ends can be removed and seized. Otherwise rope must be replaced.

Bird caging

Look for strands opening up in cage-like clusters. Rope must be replaced.

Core protrusion

Replace rope when inner core starts poking through strands.

Kinks

Kinks seriously reduce wire rope strength. Sections with kinks should be cut off. Otherwise rope must be discarded.



*Outside of wire rope. It **appears** to be in good condition. See below.*



Core of same wire rope. You can see many broken wires and notches. This rope should have been replaced long ago.

Demonstrate:

Review wire rope in use on site. Ask your crew to inspect samples and arrange for repair or replacement as required.

