

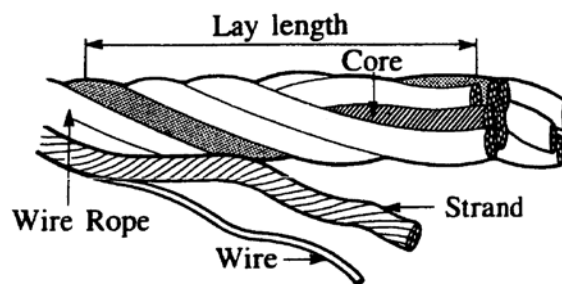
# SAFE WORK PRACTICES

## HOIST WIRE ROPE

*\*This information does not take precedence over OH&S. All employees should be familiar with the Saskatchewan Employment Act and the OH&S Regulations.*

Wire rope is made of steel wire strands with a fiber or wire core. Select wire rope according to manufacturer's recommendations.

1. **Breaks:** Wire rope breaks can cause serious injuries. Breaks can be caused by:
  - **Wear** mainly on areas in contact with hoist sheaves and drums.
  - **Corrosion** from lack of lubrication and exposure to heat or moisture. Shown by pitting. A fiber core rope will dry out and break at temperatures above 120C (250F). Use wire core rope.
  - **Fatigue** from repeated bending – even under normal operating conditions.
  - **Overloading** safe working load limit. Follow manufacturer's charts.
  - **Mechanical** abuse such as crushing, cutting or dragging of rope.
  - **Kinks** from improper installation of new rope, sudden release of a load or knots made to shorten a rope. A kink cannot be removed. Discard a kinked rope.
2. **Wire Rope Inspection:** Check wire rope every working day. Ensure rope is well lubricated. All ropes must be inspected by trained personnel, with a written, dated and signed report of rope conditions.



Check for abrasions and lubrication inside the rope. Insert marlin spike beneath two strands and rotate to lift strands to open rope. Estimate rope conditions at the section showing the most wear. Discard wire rope when there is:

- In running rope (wind on drums or pass over sheaves), six or more broken wires in one lay length (a lay length is the distance from where one strand is positioned on the rope to where the strands is in the same position again after running completely around the rope; three or more broken wires in one strand in one lay).
- In pendant standing ropes, three or more broken wires in one lay length.
- Wear of 1/3 of the original diameter of individual outside wires.
- Heat damage.
- Excessive stretch or sharp reduction in diameter.