

## Section 2 - Wire Rope

### Objectives

When you have completed this section you should be able to

- Identify wire rope by the following characteristics
  - Strand and wire
  - Lay
  - Core
  - Size
  - Steel wire grade
- State the inspection criteria for wire rope and be familiar with factors which can cause failure, including:
  - Broken wires
  - Wear
  - Reduction in diameter
  - Corrosion
  - Kinks
  - Displaced strands
  - Crushed wires
  - Bird Caging
  - Discoloration
  - Painted or taped surface
- State conditions which may affect the serviceability of wire rope and indicate the need for further inspection.
- State the handling principles for wire rope.
- Identify U-bolt and twin base clips, and state the application for each.
- Form a loop eye in wire rope using U-bolt or twin base clips and thimble.
- Identify four types of wire rope sockets; state the application for each.
- Assemble a wedge socket.
- State the requirements for proper operation of wire rope in a sheave.
- State the requirements for reeling wire rope on a drum.

### Construction and Identification

Wire rope is made up of three parts—a wire, a strand, and a core. Multiple wires are wound around a center wire to form a strand. Multiple strands are then laid helically (in a spiral) around a core to form wire rope. The characteristics of a wire rope depend on the type of wire, numbers of wires per strand, number of strands, and the type of core used.