

Section 1 - Fiber Rope

Objectives

Successful completion of this section will enable the trainee to:

- ❑ Identify various kinds of synthetic fiber rope, and state the characteristics of each.
- ❑ Calculate the working load for a given safety factor using manufacturer's given minimum break strength data.
- ❑ Use fiber rope load tables to select the proper size and material for handling loads.
- ❑ Calculate the working load limit from the minimum break (tensile) strength and job requirement safety factor for fiber rope.
- ❑ State the inspection criteria for fiber rope.
- ❑ Describe the proper storage and handling of fiber rope.
- ❑ Tie the following knots and state the application of each:
 - Square knot
 - Bowline on a bight
 - Half hitch
 - Clove hitch
- Bowline
- Sheet bend
- Rolling or stopper hitch
- Timber hitch

Construction and Identification

Construction

Fiber rope is composed of fibers, yarns, and strands.

Yarns are usually formed by twisting **fibers** to the right; **strands** are formed by twisting **yarns** to the left; and **rope** is formed by twisting **strands** to the right. (See Figure 1.1.) Fiber rope is usually made with three strands but may contain up to 12.

Fibers
Yarns
Strands
Rope

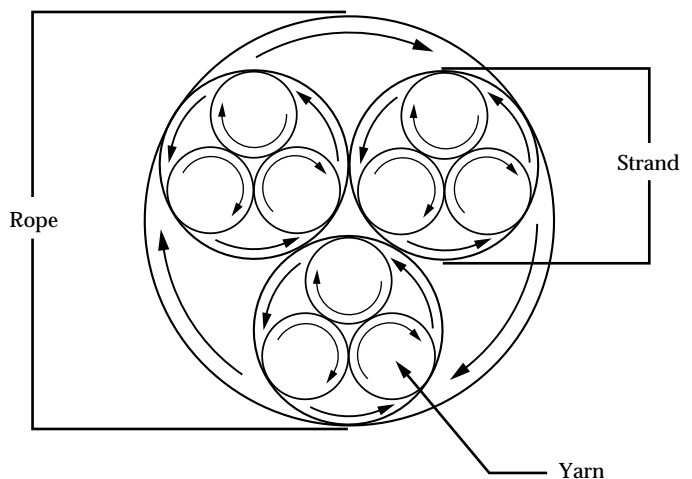


Figure 1.1