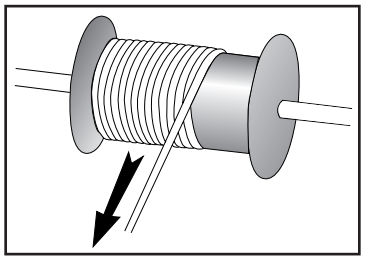
Technical Bulletin

Rope Handling

REMOVING ROPE FROM REEL OR COIL:



Synthetic-fiber ropes are normally shipped on reels for maximum protection while in transit. The rope should be removed from the reel by pulling it off the top while the reel is free to rotate. This can be accomplished by passing a pipe through the center of the reel and jacking it up until the reel is free from the deck. Rope should never be taken from a reel lying on its side. If the rope is supplied on a coil, it should always be uncoiled from the inside so that the first turn comes off the bottom in a counterclockwise direction.

AVOID KINKING AND HOCKLING:

The continuous use of a line on one side of a winch or windlass is a common abuse which can render a line useless in a comparatively short time. Repeated hauling of a line over a winch in a counterclockwise direction will extend the lay of the rope and simultaneously shorten the twist of each strand. As this action continues, kinks (or hockles) will develop. Once these hockles appear, they cannot be removed and the rope is permanently damaged at the point of hockling.

If, on the other hand, the line is continuously hauled over a winch in a clockwise direction, the rope lay is shortened and the rope becomes stiff and will kink readily.

To avoid detrimental conditions, the direction of turns over the winch should be alternated regularly. Clockwise turns are recommended for the initial use of a new line. If this practice is observed, the original rope balance will be maintained and the lines will have a much longer useful life.

This examples, the condition can arise in the deep-sea mooring of free-rotating buoys where a three-strand rope will rotate until it spins and twists itself into hockles and eventually destroys itself. The use of swivels with three-strand ocean-towing hawsers, or transmission stringing lines, may also cause damaging hockles. The sudden release of a heavy strain may also cause hockles or hard kinks.

Excessive turns can cause kinking in any rope but hockles can occur only in the basic “twisted” ropes (three-strand, four-strand and cable-laid).

Braided and plaited ropes cannot be hockled; their interlocking strand construction prevents the unlaying. Strands run in both directions creating a torque-free balance thus eliminating any inherent tendency toward twist or rotation. Swivels can be used safely but are seldom necessary. One word of caution here: when marrying a braided line to a twisted line (and also to wire rope) the twisted line can impart its twist to the braided line if the ropes are married without a swivel in between.

A braided or plaited rope, being torque-free, can have twist induced by constant working on winches and capstans. If a twist develops, it can easily be removed by “counter-rotating” when the rope is relaxed.

COILING AND FLAKING:

Three-strand ropes should be coiled in a clockwise direction (or in the direction of the lay of the rope) and uncoiled in a counterclockwise direction to avoid kinks. An alternate and perhaps better method is to flake out the line figure-eight fashion. This avoids putting twist in the line in either direction and lessens the risk of kinking.

FIGURE 8:

Great care must be taken in the stowage and proper coiling of three-strand ropes to prevent the natural built-in twist of the line from developing kinks and damaging hockles.

Braided ropes on the other hand have no built-in twist and are far more resistant to kinking. Even if kinks do develop they cannot develop further into hockles.

The best method for making up braided rope for deck stowage is in figure-eight fashion either flaked flat on the deck or figure-eight vertically around bulkhead cleats. It should not be hand coiled in either direction as this merely puts turn into the line which may develop into kinks when paying-out. Remember that there is no turn or twist in the line to begin with so do not produce it by coiling.