

NEW ROPE FOR LADDER HALYARDS AND EQUIPMENT LINES

INTRODUCTION:

The Department is discontinuing the use of manila rope and will change all ropes to the synthetic fiber type. After considerable research and evaluation, a double-braid polyester rope was selected for ladder halyards and equipment lines. All lifelines have already been changed to a new system.

DESCRIPTION:

The ladder halyard ropes are the same as the equipment lines, except for size. They are constructed of double-braid polyester fiber and have an intermittent blue pattern woven into the outer braid. This pattern is a ready means of identification as blue is the designated color for ladder halyards and equipment lines.

ADVANTAGES:

Strength-wise, polyester is far superior to manila (approximately three times stronger, size for size). The knot-tying characteristics of the new ropes are as good as, or better than, manila. Polyester rope also tends to kink less than manila rope, due to the unique way in which the two individual jackets are woven and then put one inside the other. When considering the physical characteristics of double-braid polyester ropes compared to manila ropes, polyester has many advantages. Some of the physical characteristics of polyester that were tested and have proven superior are as follows:

- High breaking strength
- Good handling characteristics
- Good abrasion resistance
- Good flexibility
- Resistance to rot and mildew
- Good shock and impact absorption
- High strength-to-weight ratio
- Good weathering resistance
- Good chemical and heat resistance
- Low water absorption

PLACING INTO SERVICE:

Before the ropes can be put into service, it will be necessary for field personnel to provide eye splices in each end for the ladder halyards, and an eye splice in one end and a crown splice in the other end of the equipment lines. To assist members in splicing the double-braid ropes, each company will be provided with a rope ' splicing kit. These splices will be done by field personnel by following the instructions in the splicing manual included in each splicing kit. As an additional aid to splicing, a videotape is provided to each Battalion Video Library. Members shall view this tape prior to splicing the new rope.

The new ladder halyard rope comes pre-stretched from the manufacturer and is ready to eye splice and install on extension ladders upon receipt. To determine the proper length of each Ladder halyard, first provide an eye splice in one end; attach the eye splice to the ladder using the small shackle and clevis pin provided (the old swiveling snap rings are to be discarded), place the rope through the pulley or pulleys, and position on the ladder in the, same manner that the halyard will be when the ladder is ready to use. Then carefully, following the instructions for eye splicing in the splicing kit instructional manual, splice the remaining eye splice into, the rope and attach to the ladder using another shackle and clevis pin. Secure the pin in the shackles by tightening with a small crescent wrench or by wrapping with a small piece of soft wire threaded through the eye of the pin. The new ropes do not stretch and contract from humidity as manila ropes do, but there will be a slight downward bow, or sag in the ropes after being attached to the ladder. This is normal and is caused by the weight of the rope.

As indicated above, the initial issue of polyester rope for equipment lines will necessitate company members putting an eye splice in one end and a crown splice in the other end. An option to the crown splice would be serving the tail end by whipping with nylon or dacron twine. Either the crown splice, or serving the tail end by whipping is approved by the Department for protecting the end of the rope from unraveling. The equipment lines are to be used for all tasks other than lifesaving operations, such as, hauling tools and equipment aloft, barricading restricted areas, pulling down unsafe walls, etc. REMEMBER, "THE EQUIPMENT LINE IS NOT A LIFELINE."

MAINTENANCE:

The ladder halyards and the equipment lines shall be inspected monthly and after each use. Look for flat spots, cuts, abrasions, or contamination by dirt or other foreign materials. During your inspection, if the rope's innercore is visible through a worn or damaged area of the outer jacket, the rope shall be removed from service and replaced with a new one. If the rope should become dirty or contaminated with a foreign material, it shall be washed with clear cold water. If washing in clear cold water does not adequately clean the rope, then the approved rope cleaner shall be used. If the cleaner does not adequately clean the rope, the Supply and Maintenance Division shall be contacted and Members shall be guided by their instructions. If the equipment line becomes wet, it should be thoroughly air dried before returning to storage. Do not dry the line in the sun; lay it out or hang it in a covered location. Sunlight causes polyester lines to deteriorate at a faster than normal rate.

The equipment line is to be stored and carried in a blue storage and carrying bag. The best way to put the rope into the bag is to place the tail end in the bottom of the bag and feed the rope in, the same as putting the lifeline or one of the smaller guidelines into their carrying bags. Ropes and their bags shall be stored on apparatus inside a compartment for maximum protection from the elements and as a security measure. When using the equipment line from an above ground area, such as upper stories in a multi-story building, a cliff, the aerial ladder, etc., the user may put the rope's carrying bag over the shoulders using the straps provided, ascend to the working area, pull the eye splice end of the rope out of the bag, attach it to a secure object and drop the rope, still in the bag, to the ground or lower level. This procedure is the same as using a lifeline or guideline.