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Standard Guide for Inspection of Nylon, Polyester, or Nylon/Polyester Blend, or Both Kernmantle Rope¹

This standard is issued under the fixed designation F 1740; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers procedures to assist in the management and care of kernmantle nylon, polyester, or nylon/polyester, or both kernmantle ropes by rescue personnel.

1.2 This guide provides information intended to assist qualified, experienced personnel in establishing procedures for determining whether a rope should be placed into or returned to service. Such procedures may be used to assist in determining serviceability of used rescue ropes. Other factors which may not be included in this guide may also need to be considered when evaluating ropes.

NOTE 1—Interpretation of the terms “qualified” and “experienced” when referring to individuals inspecting ropes may be debatable. Because rope evaluation is a subjective practice, it is in the best interest of the user to clearly define the needs of the user, and then to train personnel according to those needs. Needs and priorities may vary greatly between users.

1.2.1 A rope which has been used in any manner should not be returned to service without first undergoing a thorough inspection to include rope log review, visual inspection, and tactile inspection.

1.2.2 It is the responsibility of the user to understand that evaluation of a used rope is a subjective process. Due to the strength and longevity of kernmantle ropes presently used in rescue operations, it is perfectly reasonable, and even advisable, for these ropes to be reused on future operations unless the rope is physically compromised in some way. If the user chooses to reuse ropes, then the user should also establish specific guidelines, including and possibly in addition to those set forth in this guide, and provide training for personnel who will be responsible for examination of ropes.

1.3 *This standard does not imply approval of any specific type of rescue rope, nor does it purport to ensure the ability of any rope to function as desired. The information included here is not to be considered the only criteria for evaluating the serviceability of rescue rope.*

¹ This guide is under the jurisdiction of ASTM Committee F32 on Search and Rescue and is the direct responsibility of Subcommittee F32.03 on Personnel, Training, and Education.

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1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Terminology

2.1 *core*—interior (kern) of a kernmantle rope. The core supports the major portion of the load on a kernmantle rope.

2.2 *in-service*—a rescue rope is considered to be “in service” if it is available for use in life safety applications.

2.3 *kernmantle*—a rope design consisting of two elements: an interior core (kern) and an outer sheath (mantle).

2.4 *rescue rope*—rope which is used for rescue purposes.

2.5 *retire*—permanent removal of a rope from service such that it is no longer used for life safety purposes.

NOTE 2—When a rope is retired it should be cut into short lengths which will discourage future use. It should not be stored, kept, or maintained in such a way that it could inadvertently be used as a lifeline. In some cases, when only a single point or a small area of a rope has been damaged and the rest of the rope is still in good condition, the user may elect to cut that section out of the rope and continue to use the shorter rope(s) in lifeline applications. This decision is left to the users’ discretion.

2.6 *rope log*—a written reference kept separately for each rope. A rope log should contain pertinent information about the rope and conditions under which it was used.

2.7 *sheath*—outer cover (mantle) of a kernmantle rope. The sheath serves to protect the core of a kernmantle rope and may also support a portion of the load.

2.8 *use*—one or more individual applications during the course of an operation.

2.9 *user*—may be an individual, a department, a team, or any other entity using the products discussed herein.

3. Significance and Use

3.1 The purpose of this guide is to assist the user in developing procedures to determine the serviceability of rope based upon visual and tactile inspection of the rope and the rope history as documented in the rope log.