First Revision No. 3-NFPA 1858-2016 [Global Input]

6.2.5.1, 6.2.5.2, 6.2.5.3, 6.2.5.4, 6.2.5.6, 6.2.5.7, 6.2.5.9, 6.2.5.10, 6.2.5.11,
6.2.5.12, 6.2.5.13, 6.2.5.14, 6.2.5.15
Change first sentence in all cases after the word "service" to read "if inspection reveals
damage resulting in a performance deficiency due to:"

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 10:42:49 EST 2016

Committee Statement

Committee Statement: Better describes when a piece of equipment shall be taken out of service. The word "defect" is used most accurately to refer to an inherent fault or imperfection. While these are important, what we are really looking for in ongoing inspections are "deficiencies"...which may be due to an inherent defect, or it may be due to damage, wear, degradation over time, contamination, or any number of factors.

Response Message:

Public Input No. 29-NFPA 1858-2016 [Global Input]
Public Input No. 21-NFPA 1858-2016 [Global Input]
Replace the word "textile" with "software" throughout the document.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 17:21:46 EST 2016

Committee Statement

Committee Statement: Replacing textile with software to remain consistent with rest of project.
Response Message:
Make the following changes to the title of Section 6.2:

6.2 Periodic Inspection Procedures.

Submitter Information Verification

Submitter Full Name: Sonia Barbosa
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:

Submital Date: Fri Mar 18 15:39:30 EDT 2016

Committee Statement

Committee Statement: Better defines the inspection intervals and procedures.
Response Message:
First Revision No. 14-NFPA 1858-2016 [Section No. 1.1.1]

1.1.1

This standard shall specify the minimum selection, care, and maintenance requirements for life safety rope, escape rope and webbing, water rescue throwlines, moderate elongation laid life saving rope, life safety harnesses, belts, auxiliary equipment, litters, and victim extrication devices for emergency services personnel and associated equipment that are compliant with NFPA 1983.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 12:28:13 EST 2016

Committee Statement

Committee Statement: Ease of cross reference between 1858 and 1983. Will also minimize errors if, and when, changes are made to categories in 1983
Response Message:

Public Input No. 6-NFPA 1858-2015 [Section No. 1.1.1]
1.1.2
This standard shall also specify minimum selection, care, and maintenance requirements for life safety rope, escape rope and webbing, water rescue throwlines, moderate elongation laid life-saving rope, life safety harnesses, belts, auxiliary equipment, litters, and victim extrication devices for emergency services personnel and associated equipment that are compliant with the previous editions of NFPA 1983.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 12:29:57 EST 2016

Committee Statement

Committee Statement: Ease of cross reference between 1858 and 1983.
Response Message:

Public Input No. 1-NFPA 1858-2015 [Section No. 1.1.2]
1.1.3

This standard shall not specify selection, care, and maintenance requirements for any accessories that could be attached to the certified product and are not necessary for the certified product to meet the requirements of this standard.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 12:33:22 EST 2016

Committee Statement

Committee Statement: The scope of the document does not specify requirements for accessories.
Response Message:

Public Input No. 2-NFPA 1858-2015 [Section No. 1.1.3]
1.1.4 This standard shall not specify requirements for any utility rope.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 12:41:26 EST 2016

Committee Statement

Committee Statement: Document scope does not cover use of utility rope.
Response Message:

Public Input No. 3-NFPA 1858-2015 [Section No. 1.1.4]
This standard shall not specify requirements for any rope or associated equipment designed for
mountain rescue, cave rescue, lead climbing operations, or where expected hazards and situations
dictate other performance requirements.

Committee Statement

Text is not necessary for this document. The document should stay focused on selection, care
and maintenance of 1983 equipment. Furthermore, 1983 items are commonly used in these
environments, with many agencies mandating items be 1983 compliant.

Response
Message:

Public Input No. 4-NFPA 1858-2015 [Section No. 1.1.5]
1.1.4
This standard shall not specify selection, care, and maintenance requirements for any rope or equipment for fall protection or coworker-assisted rescue pertaining to employees of general industry or the construction and demolition industry.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 12:51:34 EST 2016

Committee Statement

Committee Statement: Adding co-worker assisted rescue as addressed in ANSI Z359.4.
Response Message:

Public Input No. 5-NFPA 1858-2015 [Section No. 1.1.6]
Public Input No. 14-NFPA 1858-2016 [Section No. 1.1.6]
1.2.2
The purpose of this standard shall also be to establish basic criteria for selection, inspection, cleaning, decontamination, repair, storage, and retirement of life safety rope, escape rope and webbing, water rescue throwlines, moderate elongation laid life saving rope, life safety harnesses, belts, auxiliary equipment, litters, and victim extrication devices for emergency services personnel elements and associated equipment that are compliant with NFPA 1983.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 12:56:12 EST 2016

Committee Statement

Committee Statement: Ease of cross reference between 1858 and 1983. Will also minimize errors if, and when, changes are made to categories in 1983
Response Message:
Public Input No. 7-NFPA 1858-2015 [Section No. 1.2.2]
Chapter 2  Referenced Publications

2.1 General.

The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.


2.3 Other Publications.

2.3.1 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.


2.3.2 Cordage Institute Publications.

Cordage Institute, 994 Old Eagle School, Wayne, PA 19087-1866.


CI 1801, Low Stretch and Static Kernmantle Life Safety Rope, 2007.

2.3.3 Other Publications.


2.4 References for Extracts in Mandatory Sections.


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**Committee Statement**

- **Committee Statement:** Updating references

**Response Message:**
3.3.30.1* Design Load.
The load for which a given piece of equipment or manufactured system was engineered for under normal static conditions.

Supplemental Information

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Submitter Information Verification

- **Submitter Full Name:** Chris Farrell
- **Organization:** [Not Specified]
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Thu Mar 03 17:44:08 EST 2016

Committee Statement

- **Committee Statement:** New annex material for design loads
- **Response Message:**
  
  Public Input No. 58-NFPA 1858-2016 [New Section after A.3.3.20]
### 3.3.35 Organization
The entity that provides the direct management and supervision for the emergency services personnel.

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### Committee Statement

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<th>Committee Statement:</th>
<th>Keep definition of organization consistent throughout the project. AHJ is a broader reaching term.</th>
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**Response Message:**

Public Input No. 16-NFPA 1858-2016 [Global Input]
### 3.3.39 Routine Inspection

An inspection performed at least prior to using an item.

---

**Submitter Information Verification**

- **Submitter Full Name:** Chris Farrell
- **Organization:** [ Not Specified ]
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Tue Mar 08 07:32:33 EST 2016

---

**Committee Statement**

- **Committee Statement:** Added new definition for clarity.
- **Response Message:**
3.3.44 Thorough Inspection.
An in-depth inspection performed at intervals.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Mar 08 07:34:11 EST 2016

Committee Statement

Committee Statement: Added new definition for clarity.
Response Message:
3.3.36  Predeployment inspection.

An inspection performed prior to making the item available for service.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Mar 08 07:34:52 EST 2016

Committee Statement

Committee Statement: Added new definition for clarity.
Response Message:
### 3.3.10 Contamination/Contaminated

The process by which life safety rope and equipment are exposed to hazardous materials, body fluids, or CBRN terrorism agents.

---

**Submitter Information Verification**

- **Submitter Full Name:** Chris Farrell
- **Organization:** [Not Specified]
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Tue Mar 08 07:46:33 EST 2016

---

**Committee Statement**

- **Committee Statement:** Added new definition for clarity.
- **Response Message:**

---
3.3.43 Soiled/Soiling.
The accumulation of materials that are not considered hazardous materials, body fluids, or CBRN terrorism agents but that could degrade the performance of the life safety rope and equipment.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Mar 08 07:48:39 EST 2016

Committee Statement

Committee Statement: Added new definition for clarity.
Response Message:
Software.

A type of auxiliary equipment that includes, but is not limited to, anchor straps, pick-off straps, and rigging slings. [1983, 2017]
4.4.3
The organization shall retain and make accessible to organization personnel and end users for reference purposes a copy of the manufacturers’ instructions regarding the care, use, and maintenance of the life safety rope and equipment for reference purposes.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submitter Date: Thu Mar 03 12:58:29 EST 2016

Committee Statement

Committee Statement: Better defines who needs to have accessible documentation.
Response Message:

Public Input No. 15-NFPA 1858-2016 [Section No. 4.4.3]
5.1.2

The organization shall refer to its risk and hazard assessment of the response area to determine the types of incidents requiring life safety rope and equipment that could be encountered, including but not limited to the following:

1. Type of technical rescue incidents likely to occur in the response area to which the organization plans to respond
2. Type of technical rescue incidents to which the organization plans to respond
3. Frequency of each of these types of incidents
4. Level of operational capability that the organization intends to maintain for each type of technical rescue incident: awareness, operational, technician
5. Maximizing response capabilities through cooperation with other response organizations, departments, or agencies
6. The organization's established acceptable safety factors for technical rescue operations
7. Geographic location and conditions

Supplemental Information

File Name | Description
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FR-22_A.5.1.2_6_.docx | Annex (3) renumbered to (6)

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 14:45:50 EST 2016

Committee Statement

Committee Statement: Expand upon the factors needed to consider for a risk assessment. Added language to the annex to clarify that NFPA does not endorse a particular safety factor or ratio.

Response Message:
Public Input No. 12-NFPA 1858-2016 [Section No. 5.1.2]
Public Input No. 33-NFPA 1858-2016 [Section No. A.5.1.2(3)]
Public Input No. 54-NFPA 1858-2016 [Section No. A.5.1.2(3)]
5.1.4*
The organization shall ensure that elements under consideration are certified as being compliant with the current edition of NFPA 1983, where applicable.

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 14:53:48 EST 2016

Committee Statement

Committee Statement: Providing additional text to clarify that NFPA 1983 equipment may not fit all functions of use.
Response Message: Added language to the annex clarifying NFPA or manufacturer does not certify products.

Public Input No. 13-NFPA 1858-2016 [Section No. 5.1.4]
Public Input No. 57-NFPA 1858-2016 [Section No. A.5.1.4]
5.1.9

Upon receipt, prior to placing life safety rope and equipment in service, the organization shall inspect designate an individual to inspect purchased life safety rope and equipment to determine that the products meet the organization’s specifications and were not damaged during shipment. The organization shall also verify the quantity and sizes of the life safety rope and equipment received.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 15:00:42 EST 2016

Committee Statement

Committee Statement: Clarifies when inspection is completed and who completes it.
Response Message:

Public Input No. 17-NFPA 1858-2016 [Section No. 5.1.9]
5.2.7*
The total weight to be carried shall be considered since it determines the necessary length, as it is determined by length, diameter, and material of the rope.

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 15:05:46 EST 2016

Committee Statement

Committee Statement: Clarification on how weight is derived.
Annex: Commodity rope test methods sometimes do not actually test MBS but instead make assumptions about strength based on weight per unit length. This has been known to be a problem when less than scrupulous manufacturers have "stuffed" material (such as paper) into the core of a rope's construction.

Response Message:
Public Input No. 37-NFPA 1858-2016 [Section No. 5.2.7]
Public Input No. 38-NFPA 1858-2016 [Section No. A.5.2.7]
5.11.3*  
The organization’s selection of pulleys shall be based on the intended use, and the following criteria shall be considered:  
(1) Efficiency  
(2) Single or double  
(3) Ratchet  
(4) **Size** Overall dimensions  
(5) Sheave width Sheave width  
(6) Sheave diameter  
(7) **Strength**  
(8) Compatibility with rope

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell  
Organization: [ Not Specified ]  
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Thu Mar 03 15:12:19 EST 2016

Committee Statement

Committee Statement: Added elements to consider for selection.  
Response Message:

Public Input No. 11-NFPA 1858-2016 [Section No. 5.11.3]
5.12.2*
The organization shall select a maximum impact load and arrest distance for its belay system.

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 15:38:31 EST 2016

Committee Statement

Committee Statement: Impact load was removed as that is a performance requirement for NFPA 1983.
Response Message:
5.12.3*
The organization shall determine the maximum allowable static load for the belay device, system capacity, given system configuration and methods used, so as to not exceed the capabilities of the belay device.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: City:
State:
Zip:
Submittal Date: Thu Mar 03 15:35:44 EST 2016

Committee Statement

Committee Statement: Better defines belay loads and belay device capacity.
Response Message:

Public Input No. 44-NFPA 1858-2016 [Section No. 5.12.3]
5.13.3*
The organization shall evaluate the performance of end-to-end and multiple configuration straps in the manner of intended use as specified by the manufacturer.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 15:47:02 EST 2016

Committee Statement

Committee Statement: Added missing multi-configuration straps and specified manufacturer use.
Response Message:

Public Input No. 45-NFPA 1858-2016 [Section No. 5.13.3]
5.15.3
The organization shall evaluate the system for prevention of removal of components.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 15:53:02 EST 2016

Committee Statement

Committee Statement: The removal of components from a system may not be desirable to the organization, so these should be evaluated as part of the selection process.
Response Message:
Public Input No. 46-NFPA 1858-2016 [New Section after 5.15]
5.16.14
The organization shall evaluate the escape or fire escape system for prevention of removal of components.

Submitter Information Verification

Submitter Full Name: Chris Farrell  
Organization: [Not Specified]  
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Thu Mar 03 15:56:39 EST 2016

Committee Statement

Committee Statement: The removal of components from a system may not be desirable to the organization, so these should be evaluated as part of the selection process.

Response Message:

Public Input No. 47-NFPA 1858-2016 [New Section after 5.16]
First Revision No. 12-NFPA 1858-2016 [ Section No. 6.1 ]

6.1 General.

6.1.1 The AHJ shall specify minimum requirements for training and experience necessary for a person to be a competent equipment inspector.

6.1.2 The AHJ shall develop guidance for equipment inspection, based on Chapter 6, industry best practice, manufacturer’s instructions, and other relevant information.

6.1.3 Manufacturer’s instructions shall be followed for all inspection, care, and maintenance.

6.1.4 Universal precautions shall be observed, as appropriate, in the handling of life safety rope and equipment that was exposed to contamination during use.

6.1.5* Any life safety rope and equipment that is found to be soiled or contaminated shall be cleaned or decontaminated before any additional inspection is initiated. If decontamination is not possible or warranted, contaminated life safety rope and equipment shall be retired.

6.1.6 The organization shall establish guidelines for its members to follow in determining if an element is soiled to an extent that cleaning is necessary.

6.1.7 The organization shall determine appropriate actions to be taken if life safety rope and equipment is found to be in need of cleaning, decontamination, or repair.

6.1.7.1 As a minimum, any necessary cleaning or decontamination shall be done in accordance with the requirements specified in Chapter 7.

6.1.7.2 As a minimum, any necessary repairs shall be made in accordance with the requirements specified in Chapter 8.

6.1.8* Age of equipment shall be taken into consideration as part of the inspection process.

6.1.8.1* The maximum lifetime of software shall be no more than 10 years from the date of manufacture.

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Committee Statement

Committee Statement: Adding AHJ requirements for qualified inspectors and defining end of product lifetime.

Response Message:

Public Input No. 20-NFPA 1858-2016 [Global Input]

Public Input No. 59-NFPA 1858-2016 [New Section after A.6.2.1]
First Revision No. 48-NFPA 1858-2016 [ Section No. 6.2.1 ]

6.2.1* Life safety rope and equipment shall be inspected periodically according to the organization's policy for inspecting life safety rope and equipment.

6.2.1.1 Predeployment Inspection.
Prior to making the item available for service, the user shall perform a predeployment inspection as follows:

1. A visual check shall be performed in a manner sufficient to ensure that all the components are present and none of them are compromised.
2. Where the equipment is assigned to an individual, the predeployment inspection shall be performed prior to a duty shift.
3. Where the equipment is not assigned to an individual, the AHJ shall determine the appropriate interval.
4. Any deficient components shall be removed from service and subjected to a thorough inspection.

6.2.1.2 Routine Inspection.
The user shall perform a routine inspection before and after each use as follows:

1. Routine inspection shall be performed in a manner sufficient to ensure that the product is safe for use.
2. Routine inspection shall include, at a minimum, visual and tactile inspection for mildew, wear, damage, and other deterioration.
3. Any deficient components shall be removed from service and subjected to a thorough inspection.

6.2.1.3 Thorough Inspection.
The organization shall determine at what intervals a thorough inspection is needed as follows:

1. Thorough inspections shall be scheduled based on use of the equipment.
2. Thorough inspections shall be performed at least once each year and shall include a more in-depth evaluation of equipment condition, including visual and tactile, and information including, but not limited to, age, date of purchase, and usage log review.
3. This inspection shall be documented.

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 04 10:06:11 EST 2016
Committee Statement

Committee Statement: Better defines the inspection intervals and procedures.
Response Message:

Public Input No. 19-NFPA 1858-2016 [Section No. 6.2.1]
### 6.2.2

After each use, life safety rope and equipment shall be inspected by an inspector meeting the organization’s requirements for the type of inspection conducted of life safety rope and equipment.

---

**Submitter Information Verification**

- **Submitter Full Name:** Chris Farrell
- **Organization:** [Not Specified]
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Fri Mar 04 10:09:43 EST 2016

**Committee Statement**

- **Committee Statement:** Clarified organization’s responsibility for who conducts inspections.
- **Response Message:**

Public Input No. 18-NFPA 1858-2016 [Section No. 6.2.2]
6.2.4
Each user shall be trained to conduct a safety predeployment and serviceability inspection of life safety rope and equipment immediately prior to use routine inspection.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submital Date: Fri Mar 04 10:15:26 EST 2016

Committee Statement

Committee Statement: Explains the user's responsibility for pre-deployment and routine inspections.
Response Message:
6.2.5.1* Life safety rope shall be retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

1. Soiling
2. Contamination
3. Physical damage, including but not limited to the following:
   a. Cuts, chaffing, broken fibers, or soft or hard spots on the sheath
   b. Thermal or chemical damage that can be detected by sight, feel, or smell, such as melted fibers, glazed surfaces, or discoloration
   c. Any variation in the rope diameter
4. A history in the rope log of shock load, fall load, static load, or excessive loading
5. Excessive age

Supplemental Information

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Committee Statement

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<th>Better defines physical damage elements and excessive age will be moved to a new section.</th>
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<td>Public Input No. 22-NFPA 1858-2016 [Section No. 6.2.5.1]</td>
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38 of 72 4/28/2016 10:10 AM
First Revision No. 5-NFPA 1858-2016 [Section No. 6.2.5.2]

6.2.5.2*

Escape and fire escape rope shall be retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

(1) Soiling
(2) Contamination
(3) Physical damage, including but not limited to the following:
   (a) Cuts, chaffing, broken fibers, or soft or hard spots on the sheath
   (b) Thermal or chemical damage on the sheath, that can be detected by sight, feel, or smell, such as melted fibers, glazed surfaces, or discoloration
   (c) Any variation in the rope diameter
   A history in the rope log of shock load, fall load, or static load in excess of the design load
(4) A history in the rope log of shock load, fall load, or static load in excess of the design load or excessive loading
(5) Excessive age

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 11:27:52 EST 2016

Committee Statement

Committee Statement: Better define physical damage elements and excessive age will be moved to a new section.

Response Message:

Public Input No. 23-NFPA 1858-2016 [Section No. 6.2.5.2]
6.2.5.3 Life safety harnesses, ladder belts, and escape belts shall be repaired or retired from service if any of the following defects is found:

- Soiling
- Contamination
- Physical damage to the webbing components, including but not limited to the following:
  - Cuts, worn or frayed areas, broken fibers, or soft or hard spots
  - Thermal or chemical damage such as melted fibers, glazed surfaces, or discoloration
  - Pulled threads, abrasions, or breaks in the stitching
- Physical damage to the hardware components, including but not limited to the following:
  - Damage, sharp edges, or missing components
  - Improper operation
- Excessive age

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 11:35:03 EST 2016

Committee Statement

Committee Statement: Better description of physical damage and removed excessive age to new section.
Response Message: Public Input No. 24-NFPA 1858-2016 [Section No. 6.2.5.3]
6.2.5.4 Carabiners and snap links shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

1. Soiling
2. Contamination
3. Excessive wear
4. Physical damage, including but not limited to the following:
   a. Damage, sharp edges, missing components
   b. Missing components
   c. Misalignment
   d. Cracks
   e. Deformation
   f. Corrosion or pitting
      Improper operation of the gate or locking mechanism
5. Improper operation of the gate or locking mechanism

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 11:43:06 EST 2016

Committee Statement

Committee Statement: Better define physical damage elements and criteria.
Response Message: Public Input No. 25-NFPA 1858-2016 [Section No. 6.2.5.4]
6.2.5.5  
End-to-end and multiple-configuration straps shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

(1) Soiling

(2) Contamination

(3) Physical damage to the webbing components, including but not limited to the following:
   (a) Cuts, worn or frayed areas, broken fibers, or soft or hard spots
   (b) Thermal or chemical damage, such as melted fibers, glazed surfaces, or discoloration
   (c) Pulled threads, abrasions, or breaks in the stitching

(4) Physical damage to the hardware components, including but not limited to the following:
   (a) Damage, sharp edges, or missing components
   (b) Improper operation, Failure to operate properly

(5) History of shock load, fall load, or static load in excess of the design load

(6) Excessive age

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell  
Organization: [ Not Specified ]  
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Thu Mar 03 11:45:23 EST 2016

Committee Statement

Committee Statement: Better description of physical damage and removed excessive age to new section.  
Response Message:  

Public Input No. 26-NFPA 1858-2016 [Section No. 6.2.5.5]
6.2.5.6
Rope grabs and ascending devices shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

1. Soiling
2. Contamination
3. Excessive wear
4. Physical damage, including but not limited to the following:
   a. Damage, sharp edges, missing components
   b. Missing components
   c. Misalignment
   d. Cracks
   e. Deformation
   f. Corrosion or pitting
      Improper operation of the cam or rope gripping component
5. Improper operation of the cam or rope gripping component

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 11:48:52 EST 2016

Committee Statement

Committee Statement: Better define physical damage elements and criteria.
Response Message:

Public Input No. 27-NFPA 1858-2016 [Section No. 6.2.5.6]
6.2.5.7

Throwlines shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

1. Soiling
2. Contamination
3. Physical damage, including but not limited to the following:
   a. Cuts, chaffing, broken fibers, or soft or hard spots on the sheath
   b. Thermal or chemical damage to the sheath that can be detected by sight, feel, or smell, such as melted fibers, glazed surfaces, or discoloration
   c. Any variation in the rope diameter
   d. History in the rope log of shock load, fall load, or static load in excess of the design load
4. History in the rope log of shock load, fall load, or static load in excess of the design load or excessive loading
5. Loss of floatability
   a. Excessive age

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 11:52:50 EST 2016

Committee Statement

Better define physical damage elements and excessive age will be moved to a new section.

Response Message:

Public Input No. 28-NFPA 1858-2016 [Section No. 6.2.5.7]
6.2.5.8

Descent control devices and belay devices shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

1. Soiling
2. Contamination
3. Excessive wear
4. Physical damage, including but not limited to the following:
   (a) Damage, sharp edges, missing components
   (b) Missed components
   (c) Misalignment
   (d) Cracks
   (e) Deformation
   (f) Corrosion or pitting

Improper operation of any moving component
Improper operation of any self-locking system

5. Improper operation of the gate or locking mechanism

Supplemental Information

File Name Description
1858_6.2.5.8_FR_61.docx For staff use

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 11 13:40:29 EST 2016

Committee Statement

Committee Statement: Keep consistency of inspection practices throughout the document.
Response Message:
6.2.5.9
Portable anchors shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

1. Soiling
2. Contamination
3. Excessive wear
4. Physical damage, including but not limited to the following:
   a. Damage, sharp edges, missing components
   b. Missing components
   c. Misalignment
   d. Cracks
   e. Deformation
   f. Corrosion or pitting
      - Damaged or cracked attachment points
      - Damaged or inoperable leg assemblies
5. Improper operation of the gate or locking mechanism

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Mar 11 13:43:31 EST 2016

Committee Statement

Committee Statement: Keep consistency of inspection practices throughout the document.
Response Message:
6.2.5.10

Pulleys shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

1. Soiling
2. Contamination
3. Excessive wear
4. Physical damage, including but not limited to the following:
   a. Damage, sharp edges, missing components
   b. Missing components
   c. Misalignment
   d. Cracks
   e. Deformation
   f. Corrosion or pitting
      - Improper operation of any moving component
      - Improper operation of any self-locking system
5. Improper operation of the gate or locking mechanism

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 09 14:24:14 EST 2016

Committee Statement

Committee Statement: Better define physical damage elements and criteria.
Response Message:
6.2.5.11
Litters and victim extrication devices shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

1. Soiling
2. Contamination
3. Excessive wear
4. Physical damage, including but not limited to the following:
   a. Damage, sharp edges, broken welds, fabric or plastic tears
   b. Missing components
   c. Misalignment
   d. Cracks
   e. Deformation
   f. Corrosion or pitting
      Damaged or cracked attachment points
      Damaged or unsafe inserts, patient straps, or patient surfaces
5. Improper operation of the gate or locking mechanism

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 11 13:45:13 EST 2016

Committee Statement

Committee Statement: Keep consistency of inspection practices throughout the document.
Response Message:
6.2.5.12

Escape and fire escape webbing shall be retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

(1) Soiling

(2) Contamination

(3) Physical damage, including but not limited to the following: webbing components

   (a) Cuts, worn or frayed areas, chaffing, broken fibers, or soft or hard spots on the sheath

   (b) Thermal or chemical damage that can be detected by sight, feel, or smell, such as melted fibers, glazed surfaces, or discoloration

   (c) Any variation in the rope diameter

(4) History A history in the rope log of shock load, fall load, or static load in excess of the design load, or excessive loading

   Excessive age
First Revision No. 64-NFPA 1858-2016 [ Section No. 6.2.5.13 ]

6.2.5.13
Escape anchor devices shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

(1) Soiling
(2) Contamination
(3) Excessive wear
(4) Physical damage, including but not limited to the following:
   (a) Damage, cracks, sharp edges, missing components
   (b) Missing components
   (c) Misalignment
   (d) Cracks
   (e) Deformation
   (f) Corrosion or pitting
      Improper operation of any moving parts
      Dulling of any points required to be sharp
(5) Improper operation of the gate or locking mechanism

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 11 13:58:25 EST 2016

Committee Statement

Committee Statement: Keep consistency of inspection practices throughout the document.
Response Message:
6.2.5.14

Moderate elongation laid life saving rope shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

(1) Soiling

(2) Contamination

(3) Physical damage, including but not limited to the following:
   (a) Cuts, chaffing, broken fibers, or soft or hard spots on the surface sheath
   (b) Thermal or chemical damage on the surface that can be detected by sight, feel, or smell, such as melted fibers, glazed surfaces, or discoloration
   (c) Any variation in the rope diameter

(4) History A history in the rope log of shock load, fall load, or static load in excess of the design load, or excessive loading

   Excessive age

Supplemental Information

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Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Wed Mar 16 07:43:36 EDT 2016

Committee Statement

Committee Statement: Better define physical damage elements and excessive age will be moved to a new section.
Response Message: 

National Fire Protection Association Report
http://submittals.nfpa.org/TerraViewWeb/ContentFetcher?commentPara...
6.2.5.15
Manufactured systems and escape systems shall be repaired or retired from service if any of the following defects is found if inspection reveals damage resulting in a performance deficiency due to the following:

1. Soiling
2. Contamination
3. Any component defect deficiency as described in 6.2.5.1 through 6.2.5.14 as applicable
4. Incompatibility of subcomponents
5. Missing or improperly assembled components

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 11:56:15 EST 2016

Committee Statement

Committee Statement: Added a section to evaluate removal or improperly assembled components.
Response Message:

Public Input No. 48-NFPA 1858-2016 [New Section after 6.2.5.15]
Where possible, organizations shall refer to the manufacturer's recommendations for cleaning of life safety rope and equipment.
7.2.1
The end user organization shall be responsible for the routine cleaning of their issued life safety rope and equipment.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 04 10:32:27 EST 2016

Committee Statement

Committee Statement: Defines that it's the organization's responsibility for cleaning.
Response Message:
First Revision No. 34-NFPA 1858-2016 [Section No. 7.2.3.2]

7.2.3.2
The cleaning procedure shall be as follows:

(1) Remove as much debris, dirt, and mud as possible at the scene.
(2) Rinse off any excess dirt with a hose.
(3) Soak the rope or webbing for about 30 minutes in a plastic tub of water with nondetergent soap added.
(4) Rinse the rope or webbing by pulling it through a rope washing device twice.
(5) Hang the rope or webbing in a cool, shady place to dry.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 17:08:10 EST 2016

Committee Statement

Committee Statement: Add webbing to the cleaning process as it is covered in the title.
Response Message:

Public Input No. 49-NFPA 1858-2016 [Section No. 7.2.3.2]
8.2 Rope and Webbing.

When damage to rope or webbing is detected, the rope or webbing shall be removed from service and destroyed or relegated to non-life safety duty.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 17:11:26 EST 2016

Committee Statement

Committee Statement: There are other duties that are appropriate for rope that is no longer suitable for life safety. Examples are knot tying and utility work.
Response Message: 

Public Input No. 51-NFPA 1858-2016 [Section No. 8.1]
8.1 General

Equipment shall not be modified, repaired, or otherwise altered without explicit authorization from the manufacturer.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 12:25:16 EST 2016

Committee Statement

Committee Statement: States the requirement from the manufacturers authorization to modify or alter equipment.
Response Message:

Public Input No. 30-NFPA 1858-2016 [Global Input]
8.3 Other Equipment.

Equipment other than rope or webbing that appears repairable shall be returned to The organization shall consult the manufacturer for other equipment repair.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 17:13:50 EST 2016

Committee Statement

Committee Statement: Some components may not be able to be sent back to the manufacturer for repair or the manufacturer may not do repairs.
Response Message:

Public Input No. 52-NFPA 1858-2016 [Section No. 8.2]
A.3.3.20 Fall Factor.

Fall factors (see Figure A.3.3.20) are calculated by dividing the distance the person attached to the rope will fall by the length of the rope between the person and the rope anchor or belay. Thus, a 305 mm (1 ft) fall on a 150 mm (\(\frac{1}{2}\) ft) rope would be a fall factor of 2.0; a 305 mm (1 ft) fall on a 305 mm (1 ft) rope would be a 1.0 fall factor; a 305 mm (1 ft) fall on a 1.12 m (4 ft) rope would be a 0.25 fall factor; and a 305 mm (1 ft) fall on a 12.2 m (40 ft) rope would be a 0.025 fall factor. Note as well that a 7.6 m (25 ft) fall on a 30.5 m (100 ft) rope is also a 0.25 fall factor. This formula assumes the fall takes place in free air without rope drag across building edges or through intermediate equipment.

When fall factors of greater than 0.25 are anticipated, such as are possible in lead climbing, dynamic ropes specifically designed for climbing should be considered. Only ropes certified to appropriate climbing rope standards [e.g., the International Mountaineering and Climbing Federation (UIAA) and European Community (CE)] are appropriate for this use. Dynamic climbing ropes should be stored, maintained, inspected, and use-logged in a manner similar to that required for static/low-stretch rope. Such operations are outside the scope of this document. A fall factor of 0.25 is the maximum considered for NFPA 1983.

Recent testing indicates that the formula for calculating fall factors may not translate perfectly from dynamic ropes to the more static design ropes used for fire service operations. The "fall factor" method of estimating the effects of a fall on an anchor or a load does not translate equally between dynamic ropes and the static and low-stretch type ropes used for fire service rescue operations. Other methods of force calculation can be used as needed.
Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 03 17:30:42 EST 2016

Committee Statement

Committee Statement: Added language to further clarify forces experienced in a fall.
Response Message:

Public Input No. 32-NFPA 1858-2016 [Section No. A.3.3.20]
Public Input No. 56-NFPA 1858-2016 [Section No. A.3.3.20]
A.5.2.1

Typically the intended application of life safety rope is for protection of a person from fall or for actual access to or from height. While design for these applications might seem to be close, specific choices of life safety rope should be made for specific applications. Choices that the AHJ might make include, but are not limited to, material, construction, elongation, strength, diameter, weight, hand, color, and length. For example, a dynamic rope that has the ability to absorb energy safely might be more important than other qualities for protecting someone at risk of falling from height, while in a rope lowering or raising operation, a less elastic rope might be a better operational efficiency choice.

Submitter Information Verification

Submitter Full Name: Chris Farrell
Organization: [ Not Specified ]
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Mar 03 17:51:46 EST 2016

Committee Statement

Committee Statement: Using the term "dynamic" puts the discussion more into context with the remainder of the sentence, which refers to elongation in a rope.
A.5.2.3
Rope construction is the method of assembling the yarn bundles into ropes. Different assembly types have various properties, making some constructions better than others for a particular application. NFPA 1983 does not specify any one particular rope construction type or material but provides performance requirements for a certified rope. Typical constructions found in emergency services are laid rope, double braid, and kernmantle (see Figure A.5.2.3).

*Figure A.5.2.3 Typical emergency services rope constructions.*

**Braid.** A rope or textile structure formed by a braiding process. [CI 1202, used with permission]

There are many subcategories of braids, each having its own advantages and disadvantages for use in rescue.

**Braid Pattern.** A description of the manner in which the strands of a braided rope are intertwined. A plain (diamond) pattern is when one strand (or multiple strand) of one direction of rotation about the axis passes over one strand in the opposite direction and it in turn passes under the next strand of the opposite direction. A twill pattern is when one strand (or multiple strand) of one direction of rotation about the axis passes over two strands of the opposite direction and it in turn passes under the next two strands of the opposite direction. [CI 1202, used with permission]

The diamond braid pattern is more common in life safety rope applications, but either pattern is permitted by NFPA 1983.

**Hollow Braid.** A single braided rope having a hollow center consisting of multiple strands which may be braided in a plain or twill pattern. A 12-strand braid is commonly used. [CI 1202, used with permission]

Hollow braids are the simplest of all braids to make. Their low strength compared to other constructions and soft hand make them seldom used in life safety rope applications, but they are found in utility fire service applications such as ladder halyards. Hollow braids lack the protective feature of a load-bearing core protected by an outer braid.

**Double Braid.** A rope constructed from an inner hollow braided rope (core) surrounded by another hollow braided rope (cover). Also called Braid-on-Braid, 2 in 1 Braid. [CI 1202, used with permission]

Double braids were popular with some fire rescue operations in the past. Their typical easy hand runs well in rigging gear such as pulley systems. Because the generally looser construction is easier to snag and abrade on rough surfaces, the double braids are no longer a selected as a life safety rope for fire ground or remote rescue operations.

**Solid Braid.** A cylindrical braid in which each strand alternately passes under and over one or more of the other strands of the rope while all strands are rotating around the axis with the same direction of rotation. On the surface, all strands appear to be parallel to the axis. [CI 1202, used with permission]

Solid braid is one of the more economical methods of manufacturing ropes, and many utility ropes in smaller diameters can be found in this construction style. They are often seen in water rescue ropes and hardware store general-duty small ropes.
**Laid.** Ropes made by twisting of three or more strands together with the twist direction opposite that of the strands. [CI 1202, used with permission]

Laid ropes are probably one of the earliest tools known. First made of natural plant fibers such as grass, they are now available in modern fibers like nylon and polyester. It is important to note any wear on the outside fibers because they are all twisted together without an independent inside core, unlike kernmantle and double braid constructions. Laid ropes are higher elongation than many other construction types. Elongation provides energy absorption in a fall but also makes for more work in haul and lower systems due to the same stretch. The built-in twist in laid ropes can also be a management problem for the user in fire rescue operations.

**Kernmantle.** A rope design consisting of two elements: an interior core (kern) and an outer sheath (mantle). The core supports the major portion of the load; and may be of parallel strands, braided strands or braided. The sheath serves primarily to protect the core and also supports a portion of the load. There are three types: static, low stretch and dynamic. [CI 1202, used with permission]

Typical rescue kernmantle construction is a braided sheath over a continuous parallel core. This design provides relatively low elongation due to the parallel core strands and excellent protection of the core fibers from the covering sheath. Various models are available with thicker or thinner sheaths, tighter or looser sheaths, and low or high twist parallel core strands. Additionally, many different choices of materials and blends of materials are available. Most life safety ropes today are of kernmantle construction.

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**Submitter Information Verification**

**Submitter Full Name:** Chris Farrell  
**Organization:** [ Not Specified ]  
**Street Address:**  
**City:**  
**State:**  
**Zip:**  
**Submittal Date:** Thu Mar 03 17:55:19 EST 2016

**Committee Statement**

**Committee Statement:** Removed figure to eliminate confusion.  
**Response Message:**  
Public Input No. 31-NFPA 1858-2016 [Section No. A.5.2.3]
A.5.2.4

Elongation is the ratio of the extension of a rope, under an applied load, to the length of the rope prior to the application of the load expressed as a percentage. Rope increases in length as the load on the rope increases. [CI 1202, used with permission]

A rope’s ability to elongate is important in that elongation can be a critical part of reducing the impact forces on the user and the system in a fall. Fall factors are a means of describing the relationship of the length of a fall to the amount (length) of rope available to absorb the fall’s energy. Should a user fall from his or her position, rope anchored high above the user will provide a much lower fall factor than a rope of the same length anchored below the user.

NFPA 1983 requires manufacturers to provide users with the elongation of certified ropes at 1.35 kN (300 lbf), 2.7 kN (600 lbf), and 4.4 kN (1000 lbf). This information can provide a good comparison between one rope and another as to their elongation to load curves for typical working loads. The more a rope elongates, the more energy it will absorb in a fall. Too much elongation can cause problems such as rope bounce when lowering, excess resets in haul systems, and loss of control in mid-face loading in a pick-off rescue. Typical fire-rescue applications choose ropes classified by the Cordage Institute as either static or low stretch.

**Static Rope.** A rope with a maximum elongation of 6% at 10% of its minimum breaking strength. [CI 1202, used with permission]

Static life safety rope is usually selected when rope stretch will be a problem. This can occur with high lines, guiding lines, long rappels, or rope systems with a long length of rope involved. Static ropes allow a more efficient mechanical advantage haul system because less stretch must be removed from the rope after each reset of the system.

**Low Stretch Rope.** A rope with an elongation greater than 6% and less than 10% at 10% of its minimum breaking strength. [CI 1202, used with permission]

Low stretch life safety rope provides a balance between not too much stretch during use and some elongation to absorb energy should a shock load occur to the system. There is always a trade-off in arresting a falling rescuer or litter — the less distance the fall, the higher the impact force but also the less chance of hitting something on the way down.

**Moderate Stretch Rope.** A rope with elongation greater than 10% and less than 25% of the rope’s minimum breaking strength. [CI 1805, used with permission]

Moderate stretch rope is not classified as life safety rope according to NFPA 1983 because of the greater amount of elongation. Moderate stretch rope is classified as a special-use rope defined by NFPA 1983 as moderate elongation life saving rope. The greater elongation allows for a lower impact force, but there is more movement when the rope is loaded.

**High Stretch Rope.** A rope with an elongation greater than 25% at 10% of the MBS. [CI 1805, used with permission]

High stretch *Dynamic rope* Rope is a very high elongation rope compared to static and low stretch ropes. Requirements for this rope are based on the UIAA climbing rope standard for mountaineers and are typically outside the scope of NFPA 1983. Dynamic ropes are used to lower the impact load on a climber’s body, the anchors, and the equipment in a roped fall. One use in the fire service is for belaying a rescuer approaching a person who is threatening suicide by jumping from a height.
Committee Statement

Committee Statement: High stretch ropes are not addressed by UIAA. Dynamic ropes are. This seems to have been a typo from the previous line.

Response Message:

Public Input No. 35-NFPA 1858-2016 [Section No. A.5.2.4]
A.5.2.6

For NFPA 1983, the actual diameter of a certified rope is determined according to Section 9.1 of CI 1801, *Low Stretch and Static Kernmantle Life Safety Rope*, and then rounding to the nearest 0.5 mm (1/64 in.). Equipment such as pulleys, ascenders, and descent control devices often work correctly only when matched with the correct diameter rope. In some combinations, a very small difference in rope diameters will change the performance of the other devices. The organization must take care to make sure the ropes purchased match the other devices in service or expected to be purchased in the future.

Larger diameter ropes are easier to grip by hand, but they also are heavier.

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Committee Statement

Committee Statement: Clarification, given that modern equipment technology has rendered hand grip not nearly as essential as it was previously.
Response Message: 

Public Input No. 36-NFPA 1858-2016 [Section No. A.5.2.6]
A.5.6.2

Carabiner gates have several different methods of preventing the carabiner from accidently opening during use.

The simplest design does not have a locking system and is usually referred to as a nonlocking carabiner. While having a long history of use for life support in the recreational field, nonlocking carabiners are not considered adequate for industrial or fire service use. See 6.5.5 of NFPA 1983.

Manual lock designs require a physical movement to activate the locking mechanism, which can be either a sleeve that screws the gate over the nose or a sleeve that, once activated, snaps into place. A physical movement is required to move the sleeve down to unlock the carabiner. Common names for this type of carabiner lock design include screw gate and manual lock.

An automatic locking gate is designed so that when the gate closes, a spring moves the sleeve up the gate and over the nose. Two or three physical movements are required to unlock the gate. This type of carabiner is usually referred to as auto-locking.

Auto-locking carabiners might be preferred for life safety use because the user does not have to remember to activate the gate-locking mechanism. Manual-lock carabiners have the advantage of easier removal from their storage location because they do not need to be unlocked first. Before relying on the carabiner for life support, the user must verify for both types that they are locked; while the gate might close automatically on the auto-locking model, if webbing or clothing blocks the gate from closing, the carabiner will be unlocked and could even remain open.

Some jurisdictions and activities require the use of ANSI-rated connectors, which have additional design, strength, and rating requirements. The AHJ needs to determine if all applicable regulatory requirements have been addressed while conducting a safety analysis for both incident and training environments.

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Committee Statement

Committee Statement: Addresses the use of ANSI connectors, especially in the training environment and calls to attention that such requirements may apply depending on the jurisdiction and nature of the task.
Response Message:

Public Input No. 55-NFPA 1858-2016 [Section No. A.5.6.2]
### Annex B  Informational References

#### B.1  Referenced Publications.

The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in 2 for other reasons.

#### B.1.1  NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.


#### B.1.2  Other Publications.

- **B.1.2.1 ASSE Publications.**
  - American Society of Safety Engineers, 1800 E. Oakton Street, Des Plaines, IL 60018-60068.

- **B.1.2.2 ASTM Publications.**
  - ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

- **B.1.2.3 Cordage Institute Publications.**
  - Cordage Institute, 994 Old Eagle School, Wayne, PA 19087-1866.

### Supplemental Information

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Committee Statement

Committee Statement: Updating references
Response Message: