

SECTION 20 ROPES

Live Fire Training Prerequisite – There are no objectives required for this certification level.

Firefighter I

20-I.01 Trainee, when given name, picture, or actual knot used by the AHJ, shall identify it and describe the purpose for which it would be used:

NFPA 1001 4.3.20.A

- | | |
|------------------------|--------------------------------|
| A. Becket (sheet) bend | E. half hitch |
| B. bowline | F. figure-eight |
| C. clove hitch | G. figure-eight on a bight |
| D. bowline on a bight | H. figure-eight follow through |

20-I.02 Trainee shall identify rope safety procedures.

NFPA 1001 4.1.2

20-I.03 Trainee shall identify and/or demonstrate the terms used when tying a knot or hitch used by the AHJ:

NFPA 1001 4.1.2, 4.3.20.A

- A. standing part when tying a knot or hitch
- B. running part when tying a knot or hitch
- C. a bight when tying a knot or hitch
- D. a loop when tying a knot or hitch
- E. a round turn when tying a knot or hitch
- F. half hitch when tying a knot or hitch

20-I.04 Trainee shall identify the construction characteristics and appropriate uses of both natural and synthetic fiber ropes:

NFPA 1001 4.1.2, 4.3.20.A

A. Characteristics of natural fiber (manila) ropes for utility use only:

- 1. moisture retention
- 2. floatability
- 3. resistance to rot, mildew and attack by marine organisms
- 4. resistance to surface abrasion
- 5. resistance to acids, alkalis and solvents
- 6. safe working strength of new rope: 3/8" manila, 1/2" manila, 5/8" manila, 3/4" manila

B. Characteristics of synthetic ropes:

- 1. moisture retention
- 2. floatability
- 3. resistance to rot, mildew and attack by marine organisms
- 4. resistance to surface abrasion
- 5. resistance to acids, alkalis and solvents
- 6. safe working strength of new rope of:
 - a. 1/2" nylon, Dacron, polypropylene, braided nylon cover with nylon core;
 - b. 5/8" nylon, Dacron, polypropylene, braided nylon cover with nylon core;
 - c. 3/4" nylon, Dacron, polypropylene, braided nylon cover with nylon core

C. Uses of ropes:

- 1. hoisting tools and equipment
- 2. securing tools and equipment to immovable objects

3. rescue

- 20-I.05 Define a life safety rope and one and two-person life safety rope including:
NFPA 1001 4.1.2, 4.3.20.A
- A. maximum working load
 - B. safety factor
 - C. minimum breaking strength
- 20-I.06 Trainee, when given the proper size and amount of rope, shall demonstrate tying the following knots used by the AHJ:
NFPA 1001 4.1.2, 4.3.20.A
- A. Becket (sheet) bend
 - B. bowline
 - C. clove hitch
 - D. bowline on a bight
 - E. half hitch
 - F. figure-eight
 - G. figure-eight on a bight
 - H. figure-eight follow through
- 20-I.07 Trainee, using an approved knot, shall hoist any selected forcible entry tool, ground ladder, or appliance to a height of at least 20':
NFPA 1001 4.1.2; 4.3.20.A
- A. a 1½" or 1¾" dry hose with nozzle attached
 - B. a 2½" or 3" dry hose with nozzle attached
 - C. a 1½" or 1¾" charged hose
 - D. an axe
 - E. a 6' or 8' pike pole
 - F. a single 14' or 16' (wall) ladder
 - G. a 10' collapsible ladder
 - H. a 14' combination ladder
 - I. working as a member of a team, a 24' extension ladder
 - J. a 15 lb. CO₂ fire extinguisher
 - K. a 20 lb. dry chemical fire extinguisher
 - L. an electric smoke ejector
 - M. a pair of bolt cutters
- 20-I.08 Trainee shall demonstrate the technique of inspection, cleaning, maintaining, storage, safety procedures, and reasons for placing a rope out of service.
NFPA 1001 4.1.1, 4.3.20.A
- 20-I.09 Trainee shall use a rope to tie ladders, hose, and other equipment so as to secure them to immovable objects as follows:
NFPA 1001 4.1.1; 4.3.20.A
- A. secure a ladder tip to a building,
 - B. secure a 1½" or larger charged line to a ladder
 - C. secure a hose roller

20-I.10 Trainee shall select and tie a rope between two objects at least 15' (4.6m) apart, which will support the weight of a firefighter on the rope.

NFPA 1001 4.3.20.A

20-I.11 Trainee, given 20' tubular webbing, shall demonstrate the proper tying of a Swiss seat.

NFPA 1001 4.3.20

20-I.12 Trainee, given the proper information, shall list the equipment needed to complete rappelling procedure.

NFPA 1001 4.3.20

Firefighter II - There are no objectives required for this certification level.