



Fire Protection Training

Procedures Handbook 4300

LADDERS

TOPIC: Inspection and Maintenance of Fire Service Ground Ladders

TIME FRAME: 1 Hour

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will list and describe the procedures for inspection and maintenance of fire service ground ladders.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- Various ground ladders
- Appropriate visual aids
- Audio visual equipment

REFERENCES:

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 5

PREPARATION:

Fire service ground ladders require unique maintenance procedures. These procedures will vary according to the type of construction and construction material used. Ground ladder maintenance is critical because of their use in lifesaving situations.



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PRESENTATION	APPLICATION
<ul style="list-style-type: none">3. Butt spurs properly maintained and sharpened4. Ladder is properly marked:<ul style="list-style-type: none">a. From top rung to top of ladder painted whiteb. Balance point delineated by red reflective tape stripe around the beamsc. From bottom rung to bottom of ladder painted yellowd. The length of the ladder marked in black letters on the outside of both beams at the butt (e.g., 14, 24, 35)5. Ladder is properly stored<ul style="list-style-type: none">a. Protected from the elements as much as possible<ul style="list-style-type: none">(1) Not stored in direct sunlight(2) Kept free of moisture(3) Away from steam pipes, boilers, and radiators.6. Ladder is properly cleaned<ul style="list-style-type: none">a. Washed periodically with a brush, soap and running water	<p>Information sheet #1</p> <p>What types of markings should all ground ladders have?</p> <p>How do you clean ladders?</p>



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<ul style="list-style-type: none"> b. Tars, oils, and greasy residues removed with safety solvent c. Wiped dry after cleaning <p>B. Additional Inspection and Maintenance Procedures Must be Followed Depending on Ladder Construction Material or Ladder Type</p> <ul style="list-style-type: none"> 1. Wooden ladders should be inspected to ensure that: <ul style="list-style-type: none"> a. Varnish is not chaffed, scratched or worn through <ul style="list-style-type: none"> (1) Encourages dry rot (2) Encourages fungus growth b. Varnish has not darkened <ul style="list-style-type: none"> (1) Indicates varnish is deteriorating (2) Hides potential defects c. Wood is not streaked <ul style="list-style-type: none"> (1) Indication of wood deterioration d. Ladder is properly refinished <ul style="list-style-type: none"> (1) Old varnish scraped off (2) Wood lightly sanded (3) Two new coats of varnish applied 2. Metal ladders (generally heat treated aluminum alloy) should be inspected to ensure that: <ul style="list-style-type: none"> a. Heat sensing label has not changed color 	<p>What is the purpose of a heat sensing label?</p>

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PRESENTATION	APPLICATION
<ul style="list-style-type: none">(1) Color change indicates exposure to heat in excess of 3000 Fahrenheit(2) Color change places ladder out of service until tested and certified as being safeb. Bolts and or rivets are tightc. Integrity of welds is maintained and free of cracks or defects.d. Ladder is properly labeled with words "CAUTION - CONDUCTOR OF ELECTRICITY"	<p>What warning must be placed on all metal ground ladders?</p>
<ul style="list-style-type: none">(1) Black letters on yellow background (reflective tape)(2) On top of beam(3) On both beams(4) At eye level (4-6 feet from bottom of ladder)(5) Bed or base section of extension ladderse. Ladder surfaces are adequately protected<ul style="list-style-type: none">(1) Occasional application of quality automotive paste wax to all surfaces except rungsf. Ladder is rust free	



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<p>3. Fiberglass ladders should be inspected to ensure that:</p> <ul style="list-style-type: none">a. Heat sensing label has not changed color<ul style="list-style-type: none">(1) Color change indicates exposure to heat in excess of 3000 Fahrenheit(2) Color change places ladder out of service until tested and certified as being safe to useb. Surface areas are adequately protected<ul style="list-style-type: none">(1) Occasional application of quality automotive paste wax to all surfaces except rungsc. Fraying of surface fibers<ul style="list-style-type: none">(1) Exposure to heat(2) Exposure to direct sunlight <p>4. Extension ladders should be inspected to ensure that:</p> <ul style="list-style-type: none">a. Fly sections operate freely and smoothly on sliding surfaces<ul style="list-style-type: none">(1) Paraffin wax or bar soap are recommended lubricants(2) Slide mechanisms must be free of dirt and debrisb. That pawl assemblies operate freely and smoothly<ul style="list-style-type: none">(1) Lubricate with waterproof grease each 6 months	



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<ul style="list-style-type: none"> (2) Must be free of dirt and debris c. That pulleys operate freely and smoothly <ul style="list-style-type: none"> (1) Lubricate with waterproof grease d. That halyard is in good condition and free of; <ul style="list-style-type: none"> (1) Dirt or contaminates (2) Kinks (3) Worn or frayed areas (4) Excess slack e. That beams, trusses and truss blocks are free of evidence of compression damage. 5. Roof ladders should be inspected to ensure that: <ul style="list-style-type: none"> a. Roof hooks and assembly operate freely and smoothly b. Roof hooks are firmly attached c. Roof hooks are not deformed 	
<p>III. LADDER TESTING</p> <p>A. To Be Undertaken Only by Certified Testing Facility</p>	<p>Who tests fire service ground ladders?</p>



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SUMMARY:

Like any equipment used in the fire service, ground ladders require periodic and thorough inspection, regular cleaning, and lubrication to ensure that they are safe and operational.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).