



Fire Protection Training

Procedures Handbook 4300

FIRE PROTECTION SYSTEMS

TOPIC: OPERATING PRINCIPLES OF STANDPIPE SYSTEMS

TIME FRAME: :30

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: A written examination

Behavior: The student will describe the operating principles and characteristics of Class I, II, and standpipe systems

Standard: With a minimum 70% accuracy, according to the information contained in this lesson plan

MATERIALS NEEDED:

- Examples of each class or system (drawings, overheads, slides)
- Writing board
- Handouts

REFERENCES:

- Private Fire Protection And Detection, IFSTA, 2nd Edition

PREPARATION: Standpipe systems – standpipes are placed in buildings for the purpose of providing water for hose streams close to the seat of the fire, for avoiding a possible delay of laying hoselines from outside sources and provide fire protection for occupants. Fire department personnel should be knowledgeable of these systems and their operations



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OPERATING PRINCIPLES OF
STANDPIPE SYSTEMS

PRESENTATION	APPLICATION
<p>I. CLASS I</p> <p>A. For fire department use only and those trained in handling heavy hose streams (i.e., fire brigades)</p> <ol style="list-style-type: none">1. The water supply will be a minimum of 500 gpm for at least 30 minutes2. A residual pressure of 65 PSI must be maintained at the topmost outlet with 500 gpm flowing3. When more than one standpipe is used, the minimum supply shall be 500 gpm for each additional standpipe for 30 minutes4. Basically the system must be capable of furnishing effective fire streams during more advanced stages of fire fighting5. Class I standpipes are supplied with 2-1/2" connections <p>II. CLASS II</p> <p>A. For use by the building occupants until the arrival of the fire department</p> <ol style="list-style-type: none">1. The water supply will be a minimum 100 gpm for at least 30 minutes	<p>What is a Class I Standpipe System?</p> <p>What is the minimum supply when more than one standpipe is used?</p> <p>What is a Class II standpipe system?</p>



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<ul style="list-style-type: none"> 3. Dry standpipe in which water is admitted to the system by the operation of a valve controlled by an electrical switch or other device located at each hose station. Water is not available at the hose stations until the supply valve is opened from the control device 4. Dry standpipe that has air under pressure and admits water to the system automatically when a hose valve is opened through the use of a dry pipe valve 	
<p>VI. ZONED SYSTEMS</p> <ul style="list-style-type: none"> A. The term "Zoned" is used to identify standpipe systems in specific areas of a building 	
<p>NOTE: Information Sheet #1</p>	
<p>VII. FIRE DEPARTMENT CONNECTIONS</p> <ul style="list-style-type: none"> A. One or more siamese connections through which an engine company can pump water into the standpipe system. These are normally 2 1/2" connections 	
<p>NOTE: Information Sheet #2</p>	
<ul style="list-style-type: none"> 1. Required only for Class I and Class III standpipe systems 2. For buildings which are zoned, a fire department connection will be supplied for each zone 3. The siamese connection will be labeled "standpipe" for easy identification 4. Connections will be female with standard caps 	<p>Where are FDC's required?</p>



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<p>5. If the caps are missing, check the system for trash (i.e., tennis balls)</p> <p>VIII. STANDPIPE AWARENESS CONSIDERATIONS</p> <p>A. Tactical operational considerations</p> <ol style="list-style-type: none">1. Review building floor plans (pre-plans) as part of overall strategy2. Accurately identify and evaluate fire floor3. Establish a control point (i.e. lobby)4. Provide life safety considerations5. Ensure adequate water supply6. Check for extension, occupants, and exposures on floors above the fire <p>B. Inside operation considerations</p> <ol style="list-style-type: none">1. Stage tools until needed2. Assign personnel to risers, valves, and fire pumps as needed3. Operations typically start at floor below fire<ol style="list-style-type: none">a) Make standpipe connections one floor below fire4. Lay excess hose upstairs past fire floor5. Charge hose lines before advancing on the fire floor6. Monitor fire spread on adjacent floors <p>C. Equipment considerations</p> <ol style="list-style-type: none">1. Bring all equipment with you	



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<ul style="list-style-type: none">a) High rise packs2. equipment to consider<ul style="list-style-type: none">a) Hose<ul style="list-style-type: none">1) 150' recommended minimumb) Valve hand wheelc) Nozzle (not automatic)d) Pipe wrenche) Gated wyef) Forcible entry toolsg) Spanner wrenchh) Spare cylindersi) Rope hole toolsD. Standpipe administration considerations<ul style="list-style-type: none">1. Standpipe standards are found in NFPA 14 "Standpipe, Private Hydrant, and Hose Systems 2000"2. Standpipe readiness considerations during inspection include:<ul style="list-style-type: none">a) Water supplyb) Valves open and operationalc) Power to fire pumpd) Valves have hand wheelse) Discharge valves are unpaintedf) Hose cabinets are accessible	

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PRESENTATION	APPLICATION
<ul style="list-style-type: none"><li data-bbox="380 331 837 365">g) FDC not blocked or broken<li data-bbox="380 401 570 434">h) Nozzles<li data-bbox="380 470 808 504">i) Check discharge threads<li data-bbox="380 539 716 573">j) Water supplies full<li data-bbox="380 609 769 642">k) Broken/missing piping	

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SUMMARY:

Standpipe systems are designed to aid and assist firefighting operations by putting outlets in strategic locations throughout the building. This reduces the amount of hose required to fight fires in large buildings.

EVALUATION:

A written examination.

ASSIGNMENT:

Read IFSTA, Private Fire Protection And Detection, Corresponding Chapter