



Fire Protection Training

Procedures Handbook 4300

STRUCTURE FIRES

TOPIC: Ventilation - Fog Stream

TIME FRAME: 1 Hour

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will list and describe the principles and procedures for fog stream ventilation.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- Appropriate visual aids
- Audio visual equipment

REFERENCES:

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 11
- IFSTA, Fire Ventilation Practices, 6th Edition, Chapter 4

PREPARATION: Fog Stream ventilation is an operation which is particularly effective in small confined spaces. It is an operation normally undertaken after the fire is extinguished by an interior team.



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VENTILATION—FOG STREAM

PRESENTATION	APPLICATION
<p>I. FOG STREAM VENTILATION</p> <p>A. A Process Whereby Water in a Fog Pattern Directed Out an Opening Creates a Low Pressure Area and Draws or Entrain Byproducts of Combustion to the Opening and Then Out. Cooler Air Than Enters the Building.</p> <p>B. The Fog Stream Uses a Venturi Principal to Draw Smoke, Gases, Heat and Vapor to the Opening Where It Is Vented Outside</p> <p>C. The Objective Is to Create a Channel from the Seat of the Fire to an Exterior Opening in the Structure</p> <p>D. Advantages of Fog Stream Ventilation</p> <ol style="list-style-type: none">1. Two to four times more effective than smoke ejectors in removing smoke2. Does not block access to building or rooms3. Does not require equipment beyond that used by an interior attack team4. Can be implemented as needed without delays necessary with other types of ventilation5. Staffing requirements are minimal <p>E. Disadvantages</p> <ol style="list-style-type: none">1. May substantially increase water damage2. Cuts available water supply to other fire fighting operations dramatically3. In freezing conditions causes ice formation on areas adjacent to the fire building4. Personnel must enter structure to initiate operations	

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PRESENTATION	APPLICATION
<p>F. Procedures for Establishing Fog Stream Ventilation</p> <ol style="list-style-type: none">1. Complete a ventilation assessment to determine need and appropriateness of fog stream ventilation<ol style="list-style-type: none">a. Fire locationb. Fire spreadc. Direction of fire traveld. Fire size and intensitye. Smoke concentrationf. Best routing of smoke from current location to exterior of the building2. Determine best exhaust opening location<ol style="list-style-type: none">a. Use pre-existing openingb. Doors are normally better than windows since they are larger and will exhaust by products of combustion more quickly3. Position hoseline and nozzle inside the building approximately 2 feet from exhaust opening<ol style="list-style-type: none">a. Adjust nozzle to a 600 fog pattern<ol style="list-style-type: none">(1) Wider patterns will block the flow of the smokeb. Elevate nozzle slightly4. Discharge fog pattern out the window<ol style="list-style-type: none">a. Fog pattern should occupy 85 - 90% of the area of the exhaust opening	



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<ul style="list-style-type: none">b. Remaining 10 - 15% is then available to exhaust by products of combustionc. Care should be taken to direct all water out of the building <p>G. Safety Precautions</p> <ul style="list-style-type: none">1. Wear full structural protective clothing with S.C.B.A.2. Check path of fog stream to ensure<ul style="list-style-type: none">a. Not directed at other personnelb. Not directed at electrical lines or equipmentc. Not directed toward surface which would create a slip and fall hazardd. Not directed at valuable unprotected property or exposures3. Ensure that ventilation water demands do not adversely impact other fire fighting operations	



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VENTILATION-FOG STREAM

SUMMARY:

Fog stream ventilation is easy to set up and is extremely effective at removing the by-products of combustion if done properly. If done improperly it is ineffective and can substantially increase property damage.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).