



Fire Protection Training

Procedures Handbook 4300

HOSE

TOPIC: Fire Hose Couplings

TIME FRAME: 1 Hour

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will correctly list and describe types and components of fire hose couplings.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- Brass coupling
- Aluminum alloy coupling (pyrolite)
- Storz coupling
- Visual aids
- Audio visual equipment

REFERENCES:

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

PREPARATION:

Fire hose couplings are one of the most trouble free and reliable pieces of fire equipment. Even though they are relatively trouble free they can be damaged during either normal use or if abused. Couplings are damaged more often by dropping than by any other means. This type of abuse is preventable.



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FIRE HOSE COUPLINGS

PRESENTATION	APPLICATION
<p>I. COUPLING TYPES</p> <ul style="list-style-type: none">A. ThreadedB. Quick Couplings<ul style="list-style-type: none">1. Quarter turn2. Snap coupling3. Storz <p>II. THREADED COUPLING COMPONENTS</p> <ul style="list-style-type: none">A. Male Coupling<ul style="list-style-type: none">1. Discharge end of hose2. Threads<ul style="list-style-type: none">a. National hose (NH)<ul style="list-style-type: none">(1) All CDF 1 1/2" or larger hoseb. National pipe straight hose (NPSH)<ul style="list-style-type: none">(1) All CDF 1" hose3. Higbee<ul style="list-style-type: none">a. Cut<ul style="list-style-type: none">(1) Allows alignment by feel and soundb. Indicator<ul style="list-style-type: none">(1) Allows visual alignmentB. Female Coupling<ul style="list-style-type: none">1. Swivel coupling	<p>Information sheet #1</p>



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<ul style="list-style-type: none">2. Supply end of hose3. Higbee cut<ul style="list-style-type: none">a. Cut<ul style="list-style-type: none">(1) Allows alignment by feel and soundb. Indicator<ul style="list-style-type: none">(1) Allows visual alignmentC. Lugs<ul style="list-style-type: none">1. Purpose<ul style="list-style-type: none">a. Aids in tightening, loosening/male and female couplings2. Types<ul style="list-style-type: none">a. Rocker lug<ul style="list-style-type: none">(1) Most common(2) Designed with rounded edges to minimize getting caught on obstaclesb. Recessed - (Barway)<ul style="list-style-type: none">(1) Found on CDF reel lines(2) Indented characteristic prevents getting caught on obstaclesc. Pin<ul style="list-style-type: none">(1) Found on CDF hard suction	<p>Information sheet #2</p>



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<ul style="list-style-type: none">(2) Prone to getting caught on obstaclesd. Steamer extended<ul style="list-style-type: none">(1) Used on larger diameter hose(2) Lug extension designed to ease tightening hose<ul style="list-style-type: none">(a) Provides excellent leverage	
<p>III. COUPLINGS CONSTRUCTION TECHNIQUES</p> <ul style="list-style-type: none">A. Cast Couplings<ul style="list-style-type: none">1. Weakest2. Least used methodB. Extruded<ul style="list-style-type: none">1. Stronger than cast couplings2. Smoother surface3. Lack swivel protection ringsC. Drop Forged<ul style="list-style-type: none">1. Strongest couplings2. Embossed ridges are swivel protection<ul style="list-style-type: none">a. First surface to hit ground when hose pulled from bedb. Hose rides on these when dragged on fireground	
<p>IV. COUPLING CONSTRUCTION MATERIALS</p> <ul style="list-style-type: none">A. Brass Alloy	



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<ul style="list-style-type: none">1. Malleable2. Easily damaged3. Relatively heavy <p>B. Aluminum Alloy (Pyrolite)</p> <ul style="list-style-type: none">1. Lightweight, one half (1/2) weight of brass2. Durable3. Does not stretch when hose recoupled4. Resists<ul style="list-style-type: none">a. Gallingb. Corrosionc. Electrolysis<ul style="list-style-type: none">(1) Chemical reaction between unlike metals which causes corrosion and freezing of fastened couplings <p>C. Magnesium Alloy</p>	



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SUMMARY:

Fire hose couplings are critical components in all fireground operations. In order for couplings to perform effectively, they must be suited for the task at hand, they must be well maintained, and they must be cared for during use.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).