



# Fire Protection Training

Procedures Handbook 4300

HOSE APPLIANCES AND TOOLS

**TOPIC:** Characteristics of Fire Hose Protection Devices: Chafing Blocks, Ramps and Bridges

**TIME FRAME:** 30 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* A written quiz

*Behavior:* The student will be able to list and describe the characteristics and uses of chafing blocks, hose ramps and hose bridges.

*Standard:* With a minimum of 70% accuracy

**MATERIALS NEEDED:**

- Chalkboard
- Chafing blocks
- Hose, hose bridge and hose ramp
- Appropriate visual aids
- Audio visual equipment

**REFERENCES:**

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 10
- IFSTA, Hose Practices, 7th Edition, Chapter 3

**PREPARATION:**

Although chafing blocks, hose ramps and hose bridges may seem like insignificant pieces of equipment when compared to other firefighting equipment, failure to use them can have disastrous consequences.

Without chafing blocks hose may vibrate against pavement, curbs, or other obstacles until it fails, thereby, shutting down all operations. Likewise, failure to use hose bridges or hose ramps will limit your ability to reposition fire apparatus once operations begin and may effectively block vehicle evacuation routes.



# Fire Protection Training

Procedures Handbook 4300

CHARACTERISTICS OF FIRE HOSE  
PROTECTION DEVICES: CHAFING  
BLOCKS, RAMPS AND BRIDGES

PRESENTATION	APPLICATION
<p><b>I. CHAFING BLOCKS</b></p> <p>A. Purpose</p> <ol style="list-style-type: none"><li>1. To prevent the rubbing or chafing of fire hose<ol style="list-style-type: none"><li>a. Caused by constant pump vibration</li><li>b. Areas particularly affected<ol style="list-style-type: none"><li>(1) Pump intake hoses</li><li>(2) Discharge hoses which contact pavement, curbs, or obstacles</li></ol></li></ol></li></ol> <p>B. Manufactured of</p> <ol style="list-style-type: none"><li>1. Wood</li><li>2. Leather</li><li>3. Old tires</li><li>4. Old fire hose</li></ol> <p>C. Designed to</p> <ol style="list-style-type: none"><li>1. Fit snugly around hose<ol style="list-style-type: none"><li>a. Clamps</li><li>b. Straps</li></ol></li><li>2. Reinforce contact surfaces/points</li></ol>	<p>Information sheet #1</p> <p>What is the purpose of a chafing block?</p> <p>What materials are chafing blocks made of?</p>



# Fire Protection Training

Procedures Handbook 4300

CHARACTERISTICS OF FIRE HOSE  
PROTECTION DEVICES: CHAFING  
BLOCKS, RAMPS AND BRIDGES

PRESENTATION	APPLICATION
<p><b>II. HOSE BRIDGES</b></p> <p>A. Purpose</p> <ol style="list-style-type: none"><li>1. To protect hose and hose couplings from vehicular traffic</li><li>2. To prevent pressure surges at the nozzle</li><li>3. To allow vehicles to continue using road with minimum restrictions</li></ol> <p>B. Manufactured of</p> <ol style="list-style-type: none"><li>1. Wood</li><li>2. Metal</li><li>3. Rubber</li></ol> <p>C. Designed to</p> <ol style="list-style-type: none"><li>1. Allow vehicles to pass over the top of hose without contacting the hose</li><li>2. Hose passes beneath bridge</li></ol> <p>D. Characterized by</p> <ol style="list-style-type: none"><li>1. An incline section to elevate tires over hose</li><li>2. A flat top to protect hose</li><li>3. A decline section</li><li>4. Tunnel like hose enclosures beneath bridge<ol style="list-style-type: none"><li>a. Risk of damage to uncharged hose is greater than risk to charged hose</li></ol></li></ol>	<p>Which is more susceptible to damage charged or uncharged hose?</p>



# Fire Protection Training

Procedures Handbook 4300

CHARACTERISTICS OF FIRE HOSE  
PROTECTION DEVICES: CHAFING  
BLOCKS, RAMPS AND BRIDGES

PRESENTATION	APPLICATION
<p><b>III. HOSE RAMPS</b></p> <p>A. Purpose</p> <ol style="list-style-type: none"><li>1. To protect hose and hose couplings from vehicular traffic</li><li>2. Prevent pressure surges at nozzle</li><li>3. To allow vehicles to continue using roadway with minimum restrictions</li></ol> <p>B. Manufactured of</p> <ol style="list-style-type: none"><li>1. Metal</li><li>2. Wood</li><li>3. Rubber</li></ol> <p>C. Designed to</p> <ol style="list-style-type: none"><li>1. Allow vehicles to pass over the top of hose with minimal contact with hose</li><li>2. Cradle hose to minimize movement and damage</li></ol> <p>D. Characteristics</p> <ol style="list-style-type: none"><li>1. An incline section to elevate vehicle tires over hose</li><li>2. A notch to cradle the hose</li><li>3. A decline section</li></ol> <p><b>IV. SAFETY HAZARDS</b></p>	<p>What safety hazards are associated with hose ramps and bridges?</p>



# Fire Protection Training

Procedures Handbook 4300

CHARACTERISTICS OF FIRE HOSE  
PROTECTION DEVICES: CHAFING  
BLOCKS, RAMPS AND BRIDGES

PRESENTATION	APPLICATION
<ul style="list-style-type: none"><li>A. Heavy and Cumbersome - Easy to Drop on Legs and Feet</li><li>B. Must Use Proper Lifting and Lowering Techniques Due to Back Injury Potential</li><li>C. Must be Placed Correctly so Damage to Hose Won't Occur as Vehicles Drive Across</li><li>D. Should Have a Traffic Control Person Stationed at Ramps to Prevent Vehicles from Driving Over Too Fast or from Going Around. Ramps Will Creep if Vehicles Cross Too Fast.</li></ul>	



# Fire Protection Training

Procedures Handbook 4300

CHARACTERISTICS OF FIRE HOSE  
PROTECTION DEVICES: CHAFING  
BLOCKS, RAMPS AND BRIDGES

---

## **SUMMARY:**

Chafing blocks are designed to fit around hose lines at points that vibrations are likely to cause damage.

Hose bridges and hose ramps are designed so that automobiles and fire apparatus can be moved over hose lines without damaging hose.

## **EVALUATION:**

A written quiz.

## **ASSIGNMENT:**

To be determined by instructor(s).