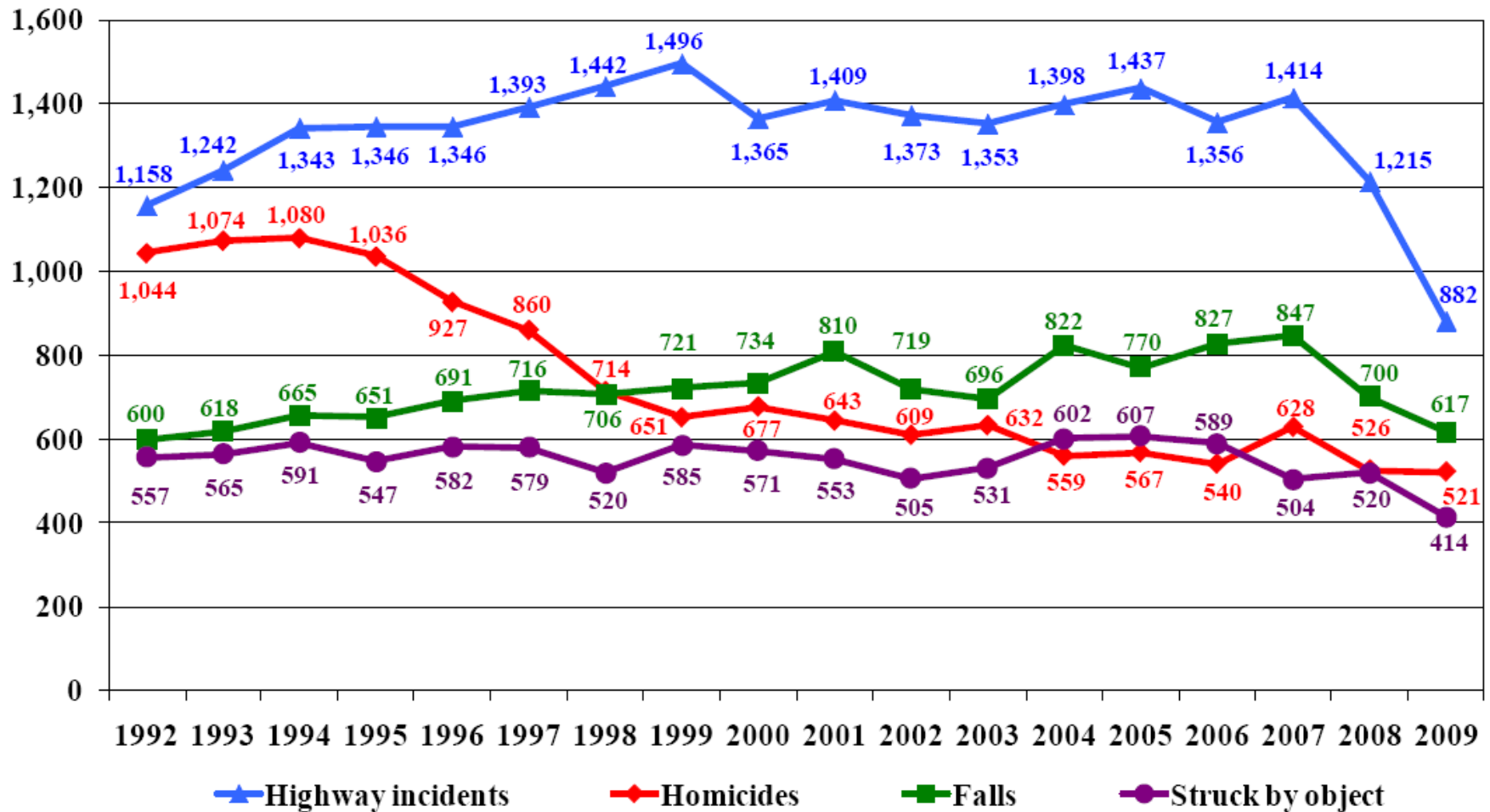


# Ladder Safety

## Four most frequent work-related fatal injury events, 1992–2009\*

Number of fatal work injuries



Workplace homicides have declined more than 50 percent since 1994, but were only down 1 percent from 2008 to 2009.

\*Data for 2009 are preliminary. Data for prior years are revised and final.

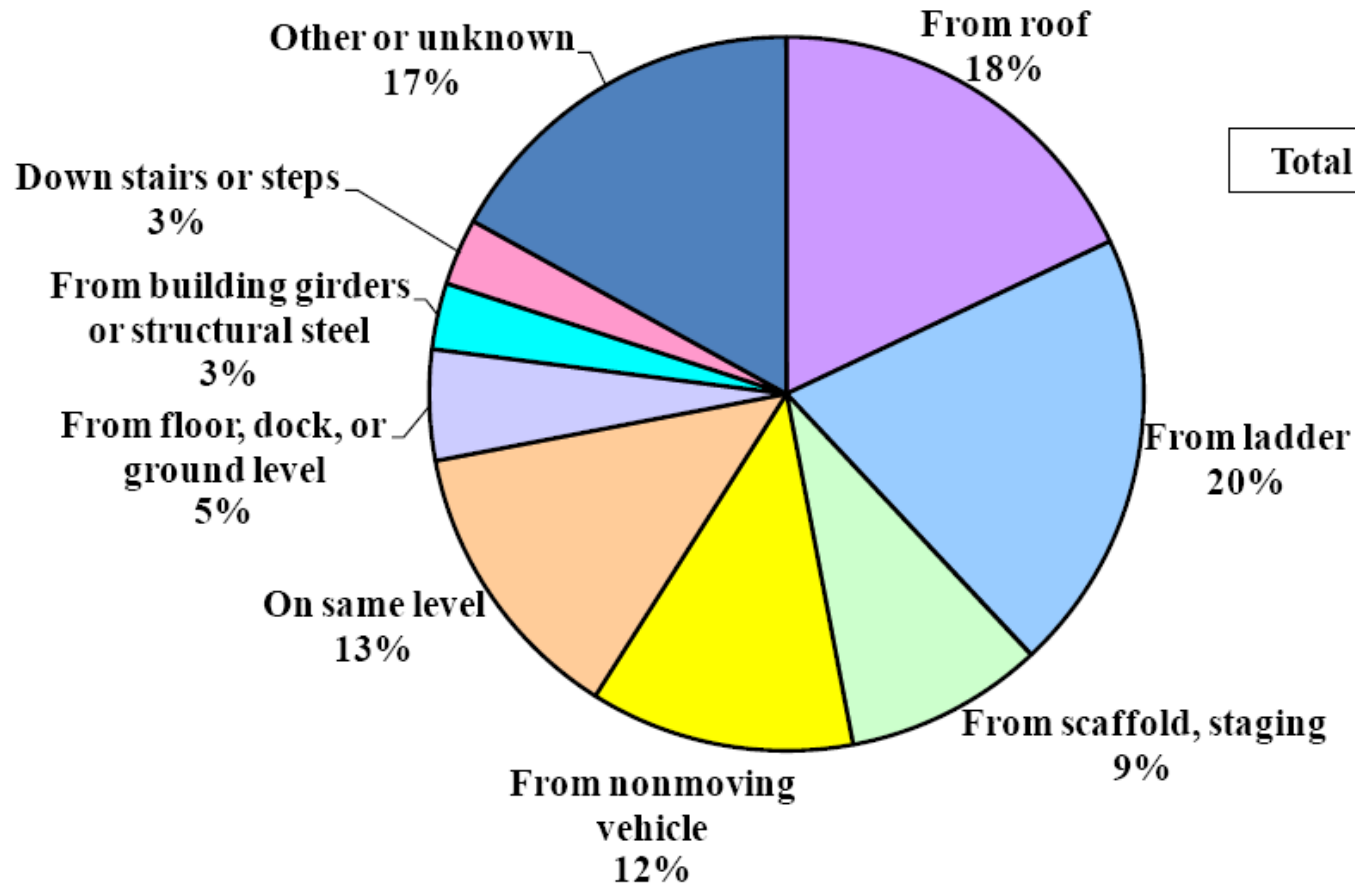
NOTE: Data from 2001 exclude fatal work injuries resulting from the September 11 terrorist attacks.

SOURCE: U.S. Bureau of Labor Statistics, U.S. Department of Labor, 2010.

# Washington L&I Facts:

- Every year, nearly 900 people in Washington State are seriously injured falling off ladders at work. These injuries include dislocated limbs, broken bones, head injuries and in a few cases some workers even die from their injuries.
- These accidents occur because:
  - The ladder moves, falls over, or is set up improperly; or
  - The worker slips on the rungs, overreaches, or carries objects while climbing the ladder; or
  - The worker stands on the top of the ladder; or
  - The ladder is cracked, broken, or in need of repair.

## Fatal falls, by type of fall, 2009\*



# Ladder Injuries

- 20,000 workers injured annually
- 100 workers die from ladder falls every year
- 136,000 people injured from ladder accidents yearly

# WAC 296-876-15005

**Train employees to recognize ladder hazards and the procedures to minimize these hazards**

# SEVEN STEPS TO LADDER SAFETY

- (1) Never use a substitute**
- (2) Know what kind of a ladder to use**
- (3) Inspect your ladder**
- (4) Set up the ladder properly**
- (5) Climb the ladder safely**
- (6) Practice safe work habits**
- (7) Carry the ladder correctly**

# Never Use a Substitute

- DON'T USE:
  - Office (especially rolling) chair
  - Boxes
  - Table
  - Other soft, unstable, non-level support



# Know What Kind of Ladder to Use

- Step stool
- Folding ladder
- Inclined ladder
- Extension ladder
- Fixed ladder
- Other kinds

# Inspect Your Ladder



# Inspect Your Ladder

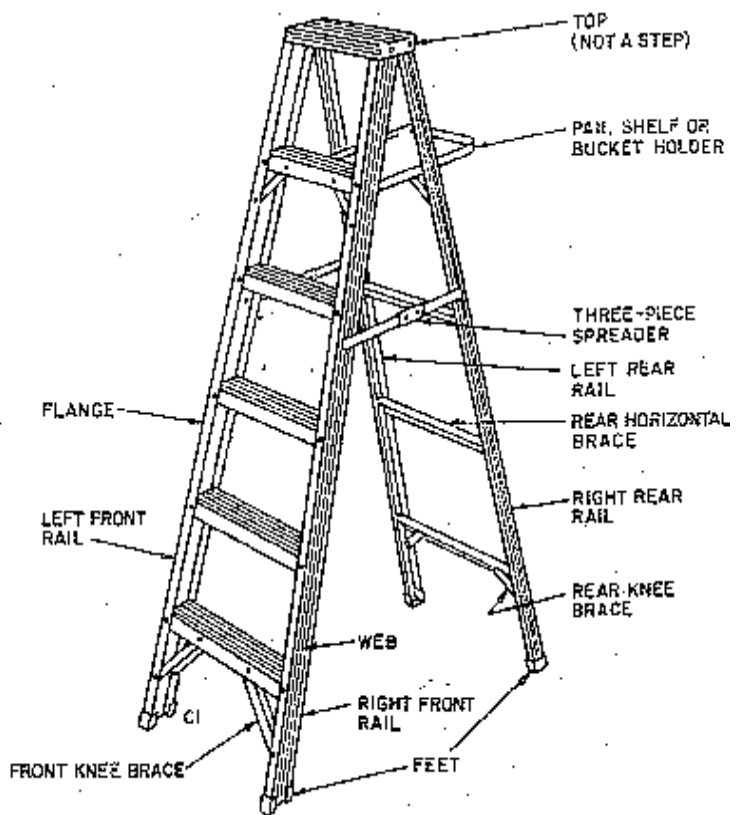
- Joints between the steps or rungs and the side rails are tight.
- Rungs, cleats, or steps aren't bent, broken, or missing.
- Side rails aren't bent, broken, or split.
- All bolts and rivets are in place and secure.
- Hardware, fittings and accessories are securely attached and working properly.
- Ropes aren't frayed or badly worn.
- Moveable parts operate freely without binding or excessive play.
- Safety feet and other auxiliary equipment are not worn out.
- Metal components aren't corroded.
- There are no other faulty or defective components.

IF IT IS DAMAGED, DON'T USE IT

# SEVEN STEPS TO LADDER SAFETY

- (1) Never use a substitute
- (2) Know what kind of a ladder to use
- (3) Inspect your ladder
- (4) **Set up the ladder properly**
- (5) **Climb the ladder safely**
- (6) Practice safe work habits
- (7) Carry the ladder correctly

# Step Ladders



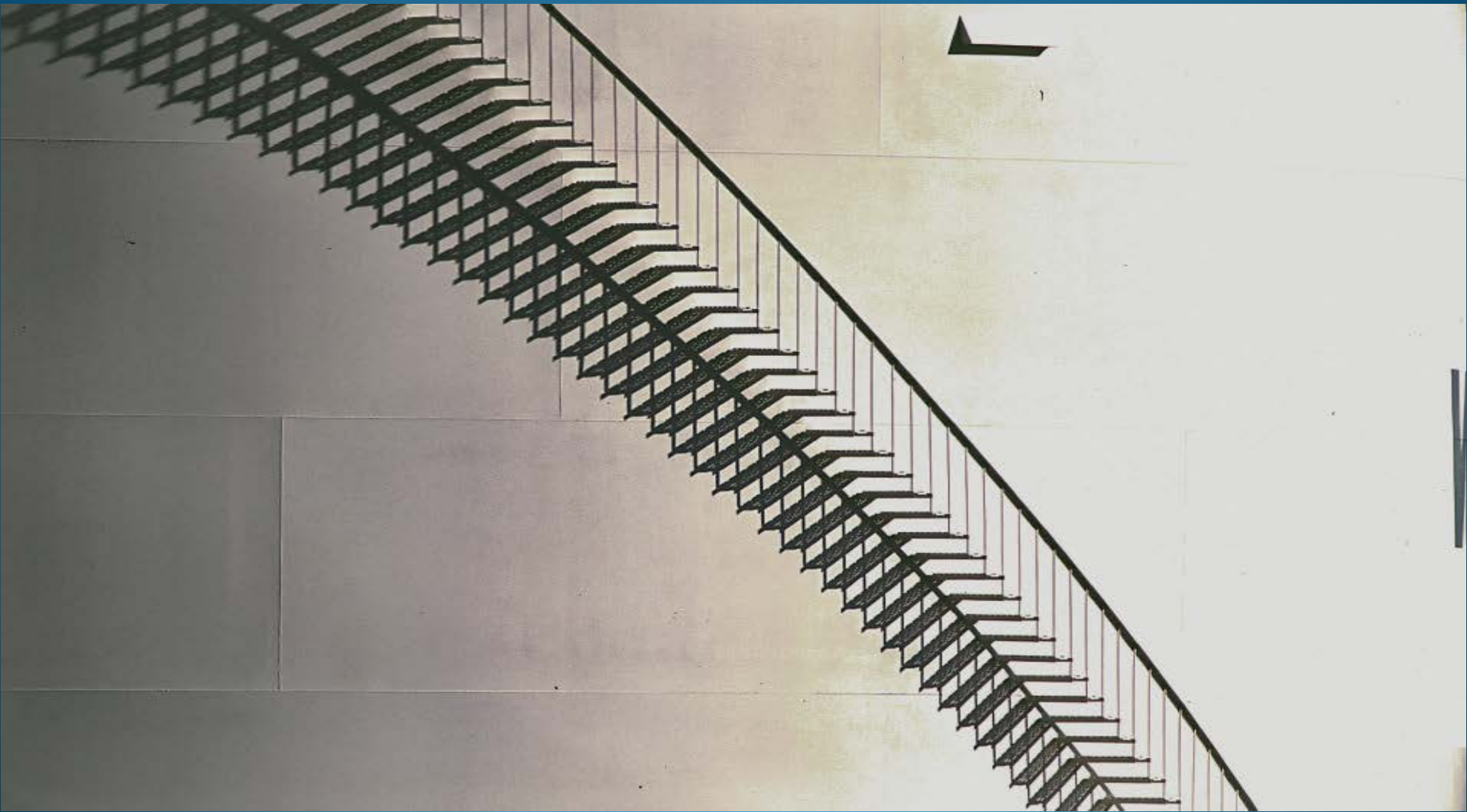
WAC 296-876

## Use stepladders safely

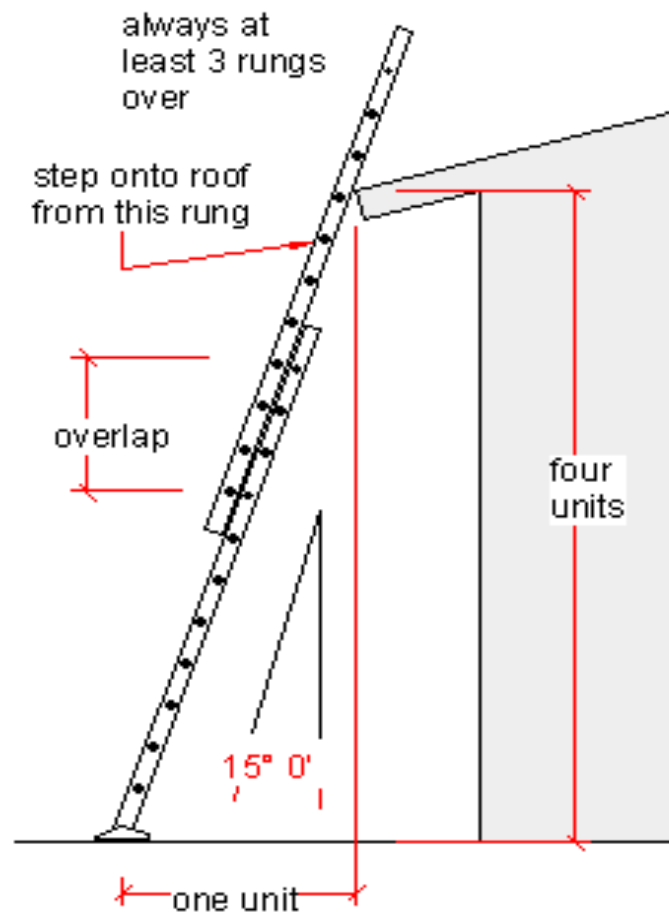
**You must :**

- (1) Use stepladders that are less than twenty feet .**
- (2) Not climb on the bracing or the back legs.**
- (3) Not use as single ladders.**
- (4) Not stand on a step higher than the third step from the top, if working more than five feet or higher from the ground (except when the top step is 18 inches or more below the top cap).**
- (5) Not use the tops of stepladders as steps.**

# Inclined Ladders

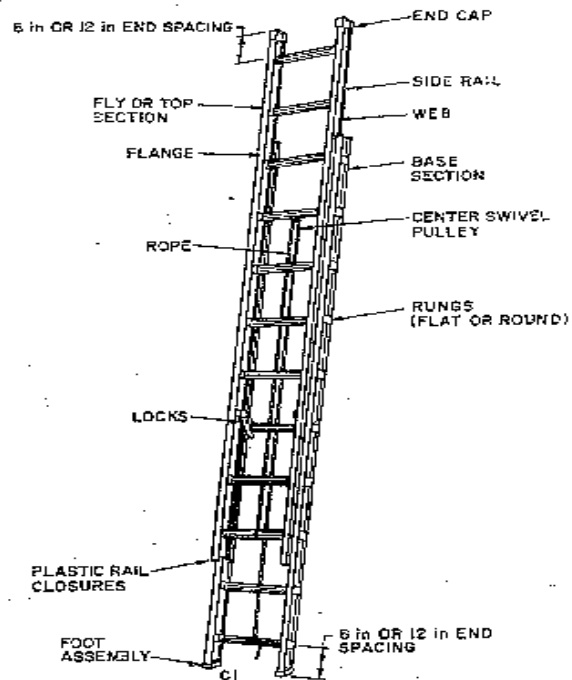


# Extendable Inclined Ladder





# Extendable Inclined Ladders





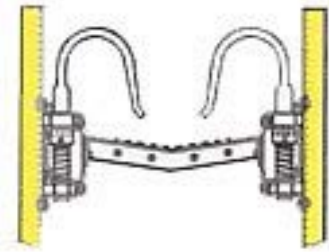


# Flag Pole



# Securing Ladder to Pole or Tree

- 1. Secure base of ladder
- 2. Place ladder against pole or tree
- 3. Attach rope or strap to ladder rail
- 4. Wrap rope or strap once around pole
- 5. Secure strap to other side rail
- 6. Test stability



V-Rung



**STEP 1**  
Place the strap between the fourth and fifth rungs with the snaps facing outward.



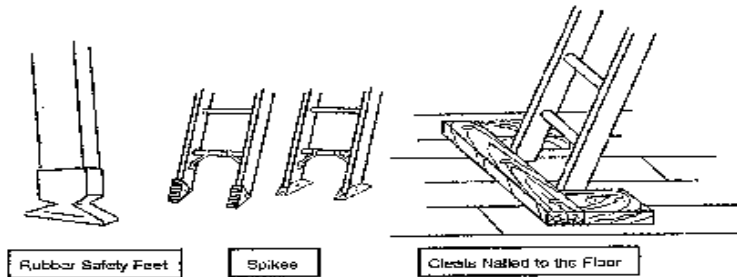
**STEP 2**  
One full wrap around pole.



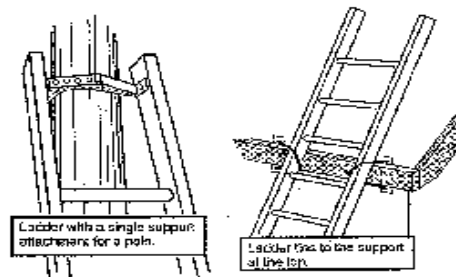
**STEP 3**  
Pull to snug up ladder.

Make sure the base section of the portable metal ladder has secure footing.

### Examples of Securing the Ladder Base



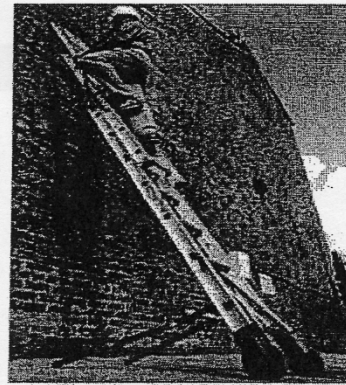
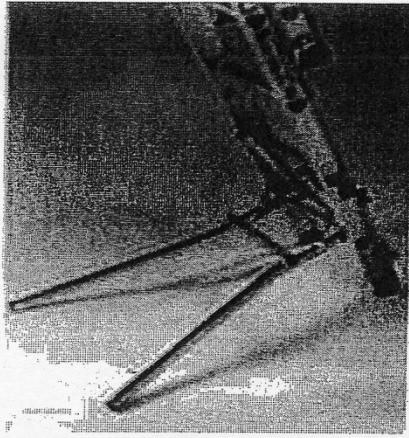
Make sure both rails are supported at the top, unless the ladder has a single support attachment



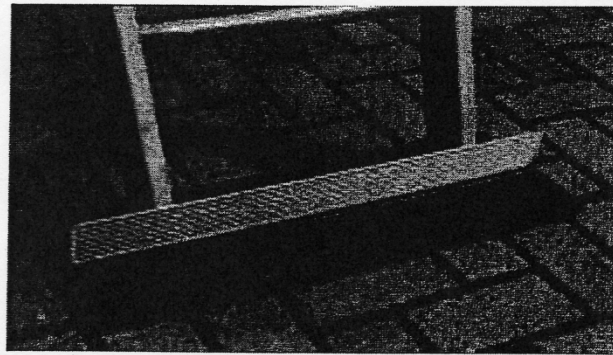
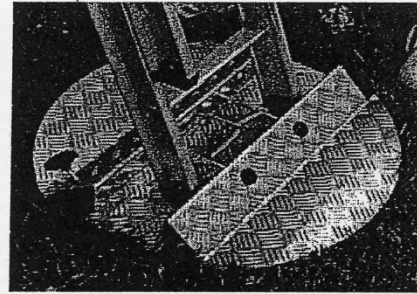
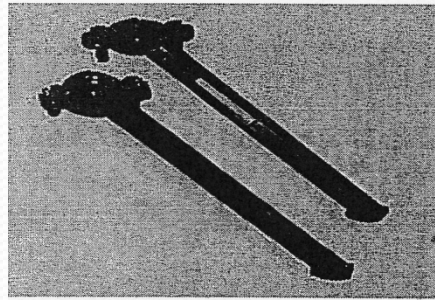
# Secure Ladder for Roof Work



Ladder secured to roof.



**Wheels on photo are for demonstration purposes only**





# Extension Ladders

**Length of section  
(Feet)**

**Min overlap  
(Feet)**

**Less than 36**

**3**

**37 to 48**

**4**

**49 to 60**

**5**

## The Fly-Lock Mechanism

A rung-lock or fly-lock is a mechanism used to secure together the two sections of an extension ladder as seen in **Figure 1**.

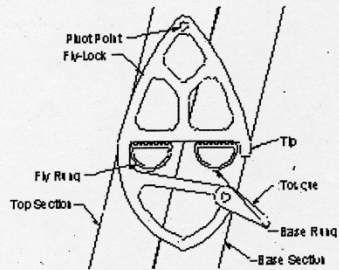


Figure 1. Fly-Lock in Secure Position.

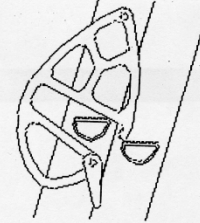


Figure 2. Fly-Lock in Tip Lock Position.

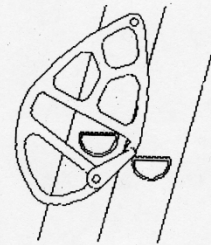


Figure 4. Fly-Lock in False Lock Position.

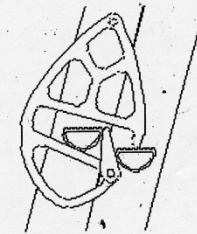


Figure 3. Tip Lock Caused by Tongue.

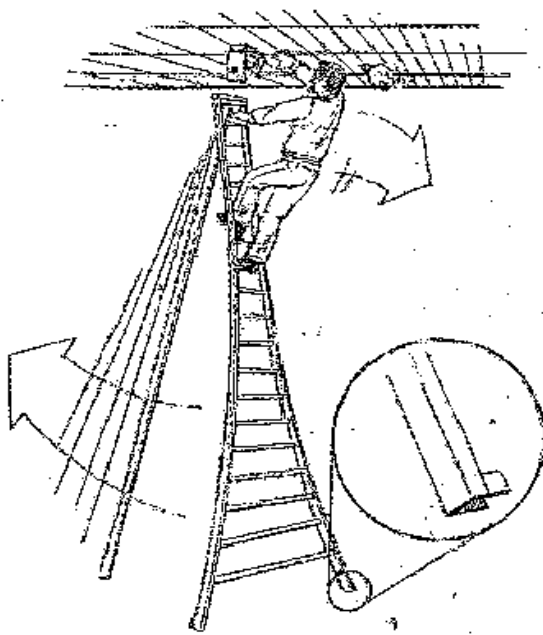
# Safely use a portable ladder when working more than 25 feet above ground

## You must:

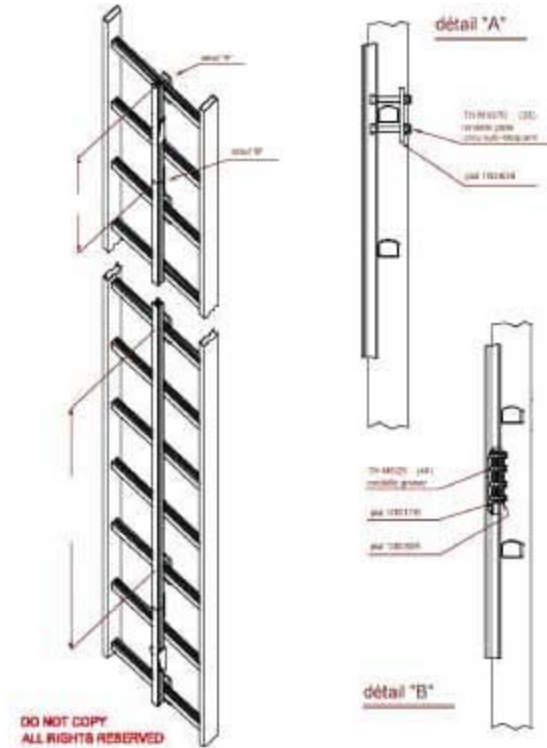
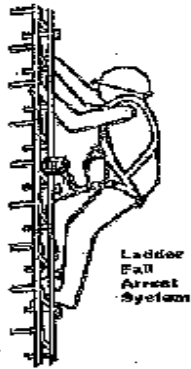
- (1) Secure the ladder at the top and bottom**
- (2) Not perform work that requires the use of both hands unless wearing a safety belt and lanyard secured to the ladder.**
- (3) Not perform work requiring eye protection, respirators and/or pressure equipment if >25 feet above the ground.**

# Tripod Ladders

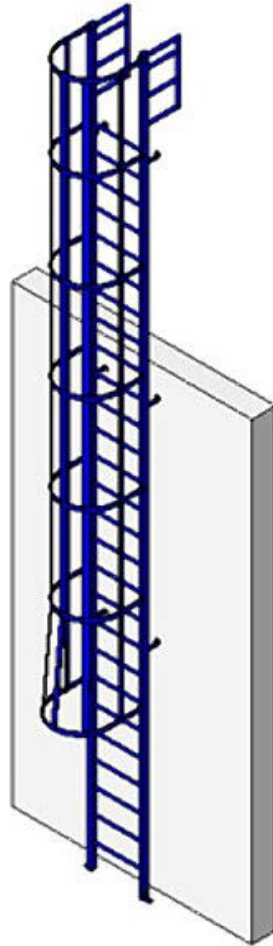
- (1) Does not have rubber feet. Cannot be used on hard surfaces.
- (2) Inspect ladder before each use.
- (3) Do not use around energized electrical equipment.
- (4) Ladders are designed for one person only. Do not overload.
- (5) Do not stand on top two steps.
- (6) Position properly
  - Steps should be level (rails at 72 degrees)
  - For hillside use, 3<sup>rd</sup> leg placed uphill
  - For cross sloping ground, 3<sup>rd</sup> leg slightly down slope



# Fixed Ladders: Fall Arrest



# Fixed Ladders : Cage



# SEVEN STEPS TO LADDER SAFETY

- (1) Never use a substitute
- (2) Know what kind of a ladder to use
- (3) Inspect your ladder
- (4) Set up the ladder properly
- (5) Climb the ladder safely
- (6) **Practice safe work habits**
- (7) **Carry the ladder correctly**



# Unsafe Ladder Work



**Danger!** The spreader isn't fully open (WAC 296-876-40050).



**No standing on the top step!** Employee training on proper use of ladders will help prevent unsafe use.

# Safe Ladder Work

- Set up properly
  - Tie off if needed
  - Brace feet if needed
- Only one person on ladder!
- Look up! Look down!
- Use a tool belt
  - Don't lay tools loosely on ladder or shelf
- Use non-conducting ladder
- Carry ladder properly



Thank You