

# ROOFING FALL PROTECTION

## 27.1



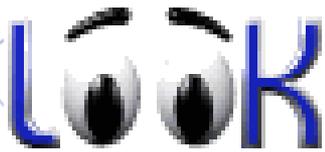
- Prior to the start of work, a structural analysis of the roof shall be conducted by a Qualified Person to assure that the load capacity of the roof deck will not be exceed.**
- Before work begins a competent person shall complete a dsily inspection of each job site.**
- Public shall be protected by barriers IAW ANSI D6.1**
- Work on roofs shall be halted during severe weather.**
- All employees shall be trained IAW the established emergency and fire prevention plans**
- Winds stronger then 10 mph require material to be secured**
- Material may not be stored within 6 foot of the roof edge**

# ROOFING FALL PROTECTION



- LOW SLOPED ROOF**
- STEEP SLOPED ROOF**
- LEADING EDGE WORK**





# SAFETY MONITORING SYSTEM



- ***Safety Monitoring System (SMS): The use of a SMS by itself as a fall protection method is prohibited.***
- ***UFGS 013526 3.4.3 Fall Protection for Roofing Work***
- ***a. Low Sloped Roofs:***
  - (1) For work within 6 feet of an edge, on low-slope roofs, Protect personnel from falling by use of personnel fall arrest systems, guardrails, or safety nets. A safety monitoring system is is not adequate fall protection and is not authorized***

# ROOFING FALL PROTECTION DEFINITIONS

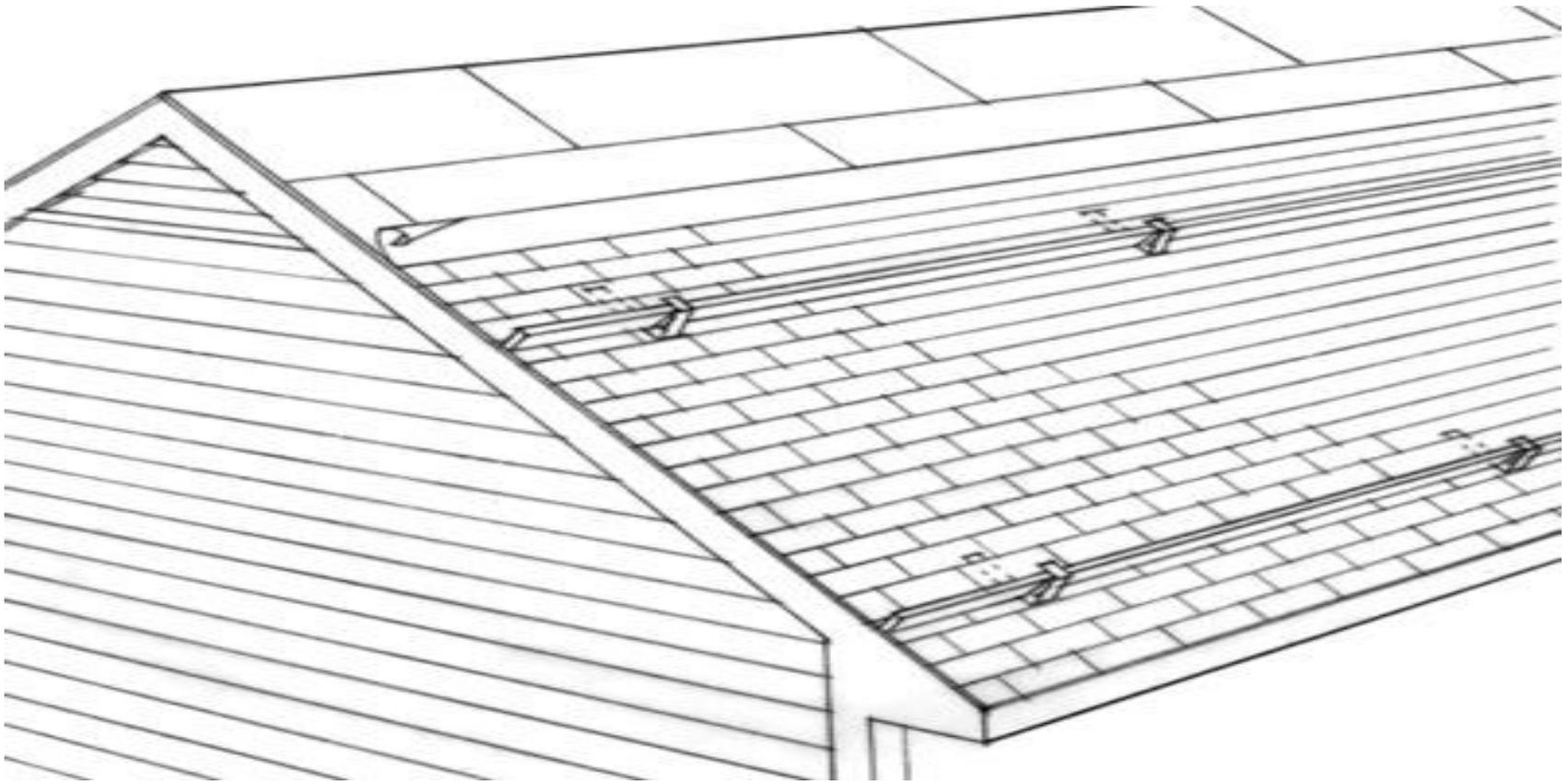


- LOW SLOPE ROOF
- PITCH ROOF
- LEADING EDGE
- WARNING LINE



**LOW SLOPED ROOF: ANY ROOF IN WHICH THE PITCH EQUAL TO OR LESS THAN 4 INCHES VERTICAL TO 12 INCHES HORIZONTAL**

# PITCHED ROOF



**PITCHED ROOF ANY ROOF WITH A PITCH GREATER THAN 4 INCHES VERTICAL IN 12 INCHES HORIZONTAL**

# CONTROLLED ACCESS ZONE



## Allowed by OSHA not by Navy

**An area in which work may take place without the use of guardrail, PFAS, or safety net system and access to the zone is strictly controlled.**



**Example: Metal deck installation, pre-cast Concrete decking, floor/deck form placement**

# LEADING EDGE



**The edge of a floor, roof, or formwork for a floor or other walking/working surface such as a deck which changes locations as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an “unprotected edge or side” when it is not actively and continuously under construction.**

# LEADING EDGE EXAMPLE



## Steel Sheets on Flat Roof Structure



# WARNING LINE DEFINITION



**A BARRIER ERECTED ON A ROOF TO WARN EMPLOYEES THAT THEY ARE APPROACHING AN UNPROTECTED ROOF SIDE OR EDGE**



**What's wrong with this picture????**

# Low Slope Roofing Requirements



- **Warning Lines 6' Edge**
- **Hard Rail Placed at points where personnel or material come & go from roof**
- **Entrance/Exit Guarded**
- **Outside warning line contractor to provide conventional fall protection system**



# WARNING LINE SYSTEM



- ***A barrier erected on a roof to warn workers that they are approaching an unprotected side or edge***
- ***Consists of rope, wires or chains 34-39 inches high, flagged every 6 feet, with high visibility material and with supporting stanchions***
- ***Stanchions shall be capable of resisting a force of 16 lbs***
- ***Working within the line does not require fall protection***
- ***Fall protection is required when working outside the line***
- ***Shall be erected 6-15 feet away from the edge of the roof (21.K.05)***
- ***Located around all sides of the work area***

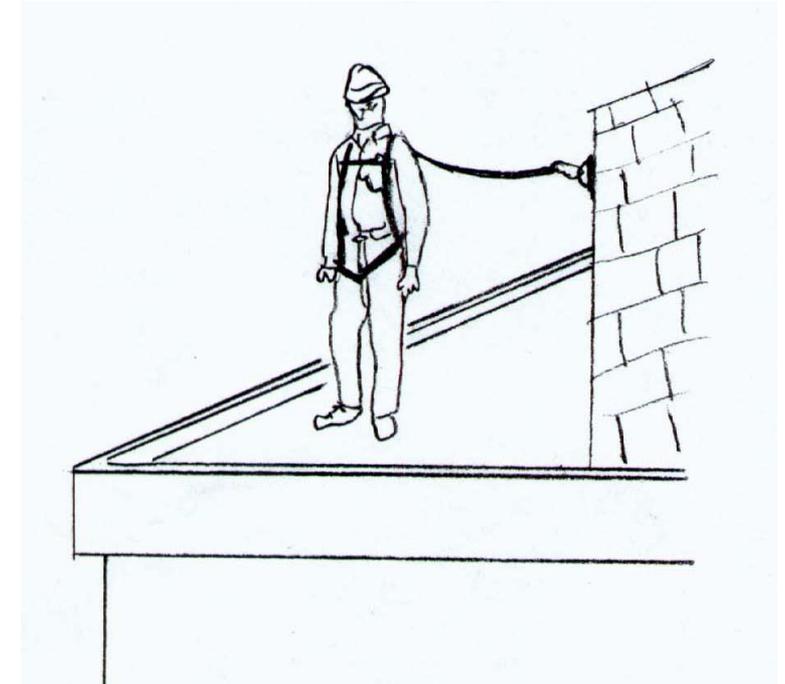
27.I Roofing



# TRAVEL RESTRAINT SYSTEM



A system that prevents a worker from **reaching** an unprotected side or edge



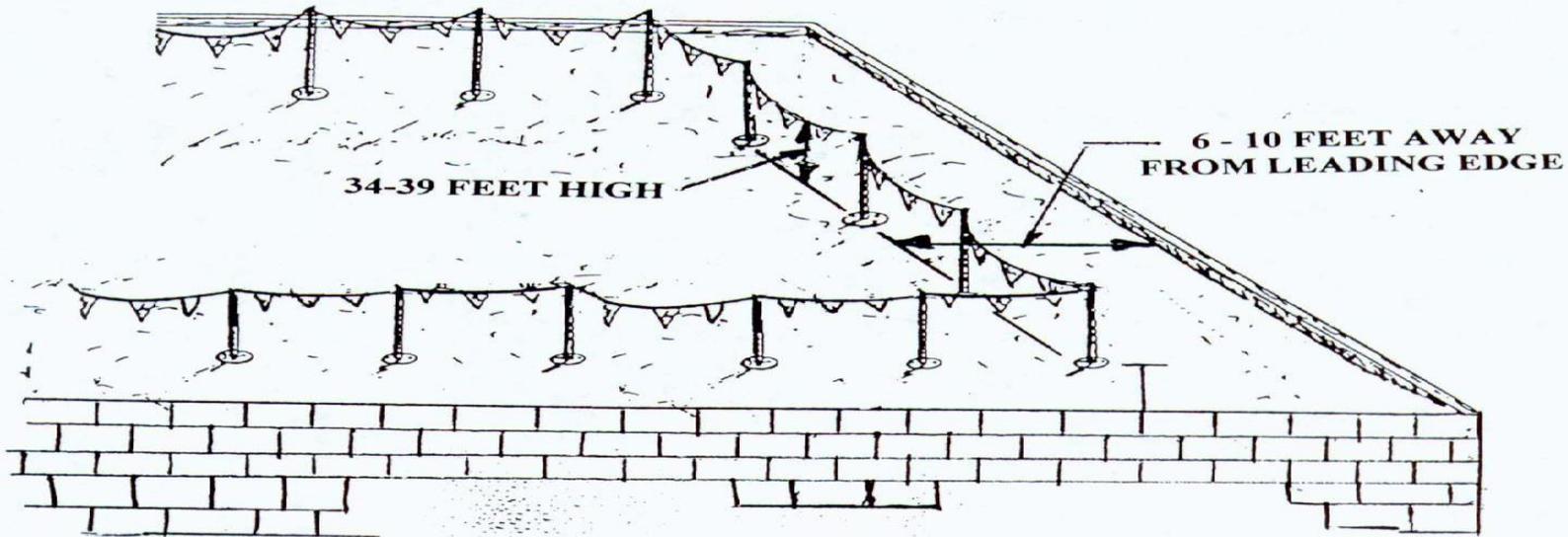
- *Anchorage strength requirement is 3,000 lbs*
- *No requirements in 29 CFR 1910 and 1926*

# WARNING LINE SYSTEM



CAN YOU FIND THE ERROR ON THIS SLIDE?

*Wire, rope or chain shall have a minimum tensile strength of 500 lbs*



**Question: What determines if the distance is 10 ft. or 6' away from edge?**

# Roofing Fall Protection Considerations



**SLOPE OF ROOF/ TYPE OF FALL PROTECTION**

**WARNING LINE SYSTEM LOCATION?**

**HEIGHT OF ROOF?**

**HOLES?**

**ACCESS?**

**RESIDENTIAL?**

**ROOF DECK INTEGRITY?**

**COMPETENT PERSON?**



# Roofing Fall Protection



On roofs greater than **16 feet in height**, a hoisting device, stairway, or progressive platforms is to be furnished for supplying materials and equipment



Remember  
16 feet!



# PITCHED ROOFING REQUIREMENTS



- Roof that are greater than 4” in 12” Rise
- Conventional Fall Protection System
- **NO SLIDE GUARDS**

# FALL PROTECTION DEVICES



MODEL #650



**SAFETY  
HARNESS**



**GUARDRAIL  
SYSTEM**

# FALL PROTECTION DEVICES



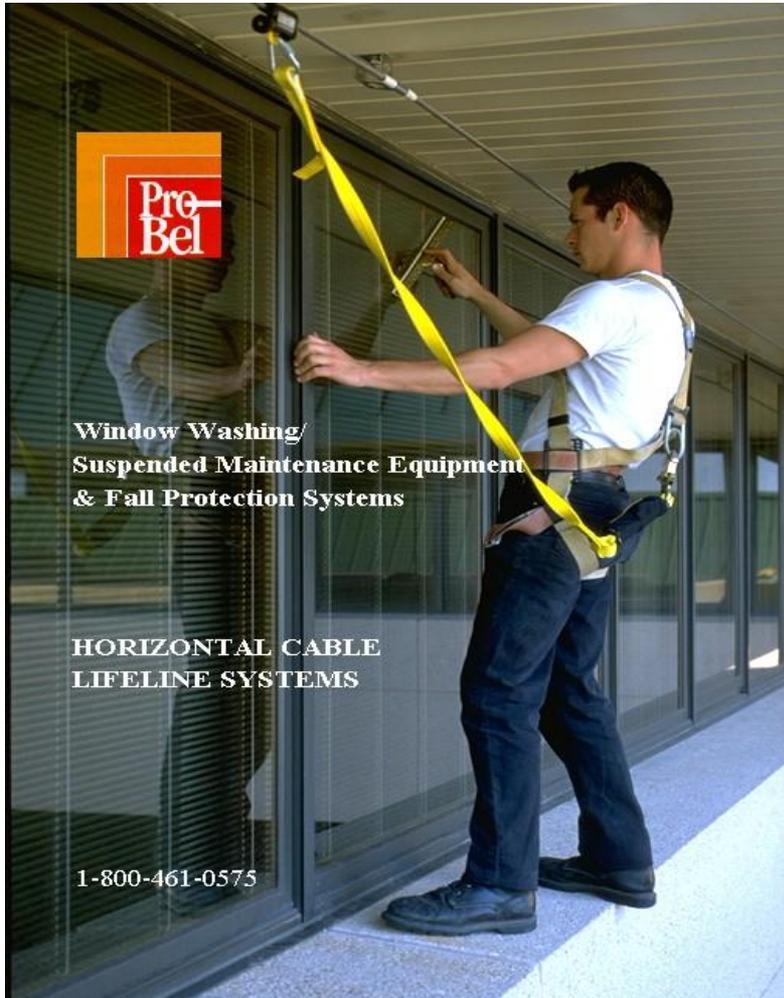
## SAFETY NETS

# FALL PROTECTION SAFETY DEVICES



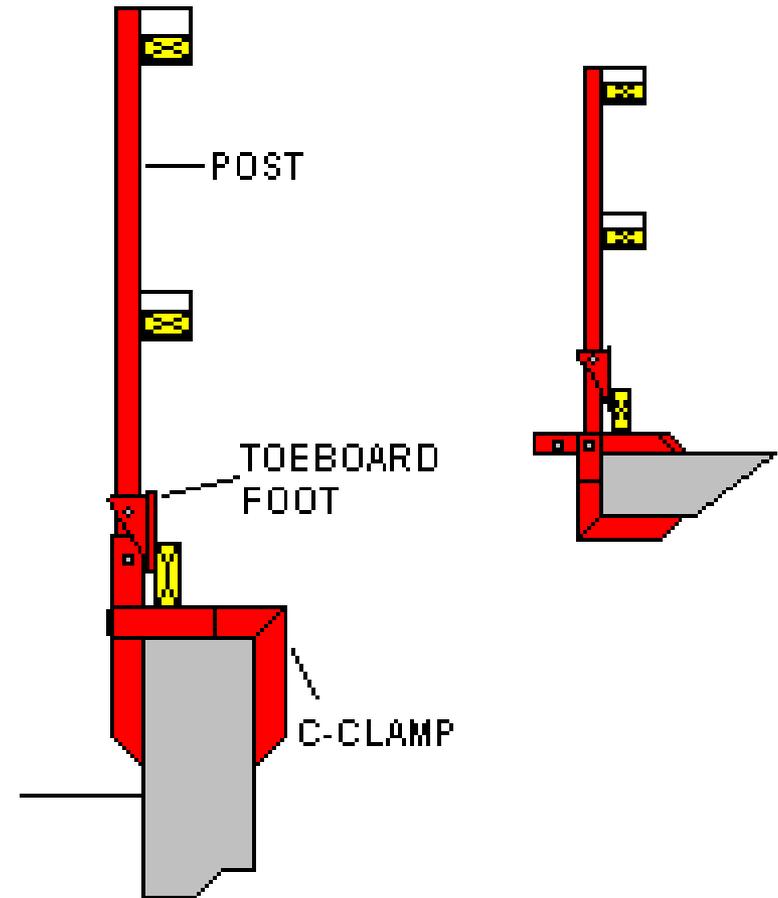
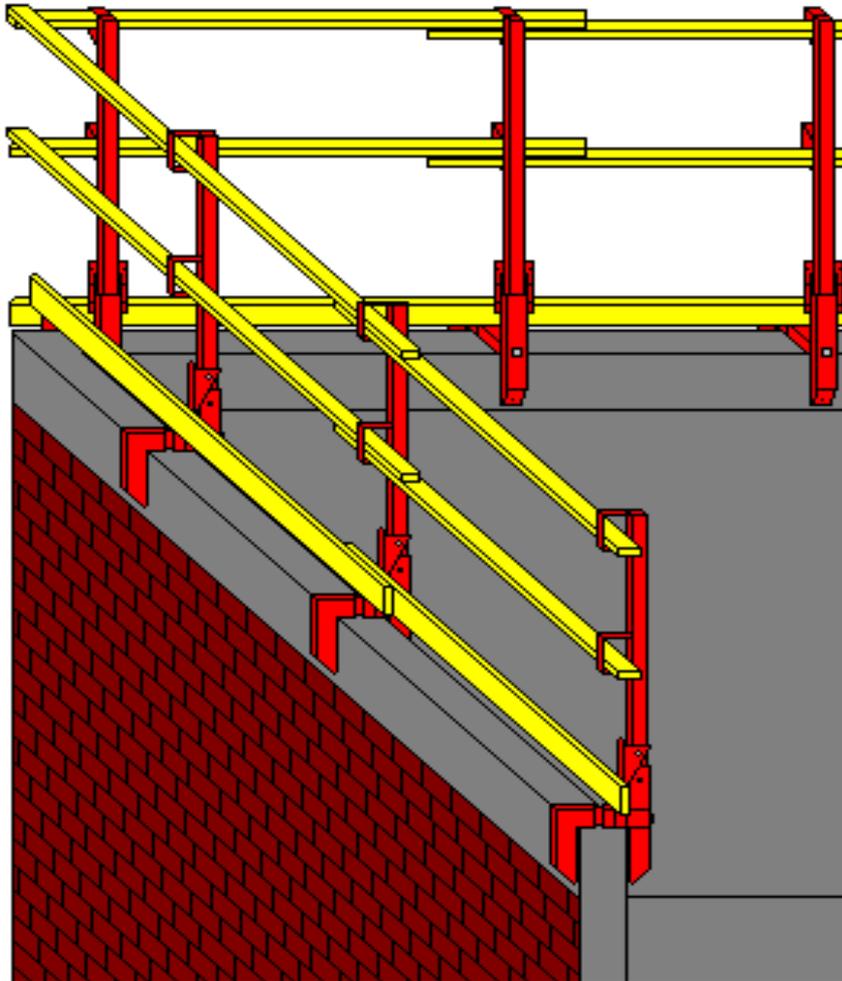
## LANYARD W/DECELERATION DEVICE

# FALL PROTECTION DEVICES



## HORIZONTAL LIFE LINES

# FALL PROTECTION DEVICES



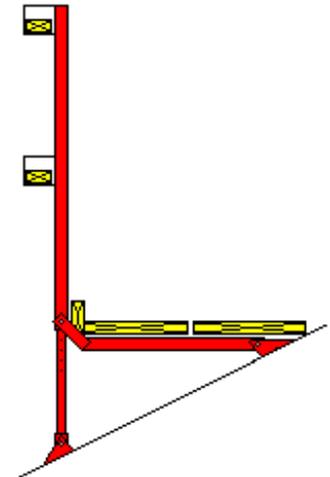
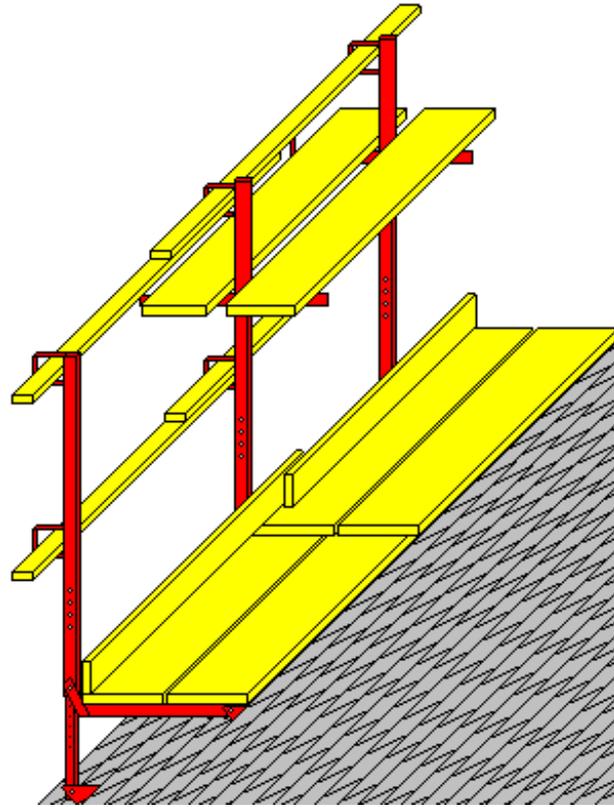
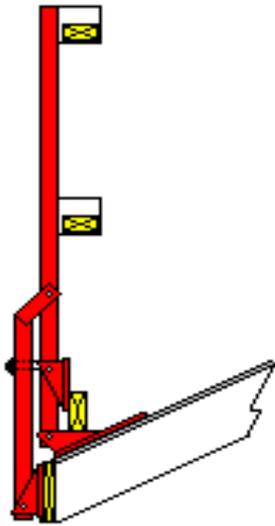
## RAILING FLAT ROOFING OR PARAPET

# PITCH ROOF FALL PROTECTION DEVICES



## ROOFING GUARD RAIL SYSTEM

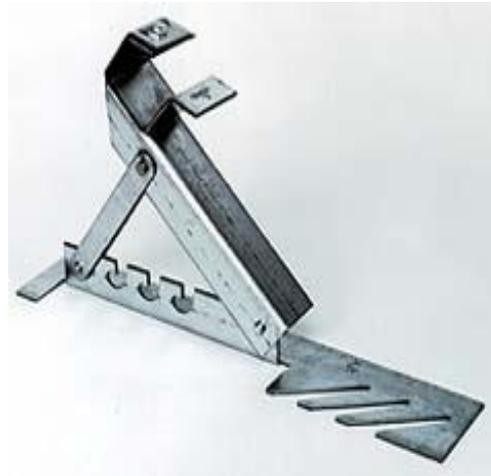
# PITCH ROOF FALL PROTECTION DEVICES



**FACIA RAIL**

**PLATFORM RAIL**

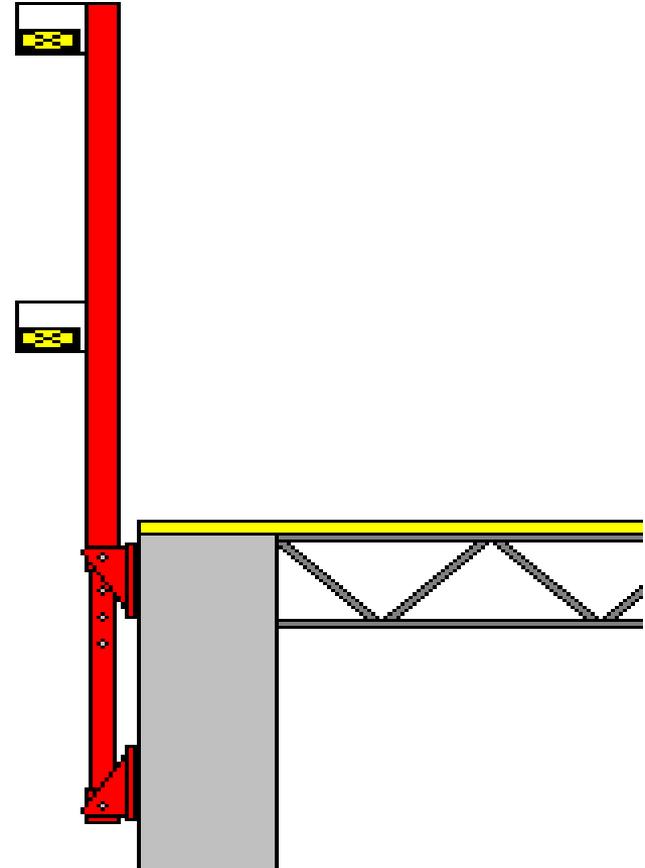
# FALL PROTECTION DEVICES



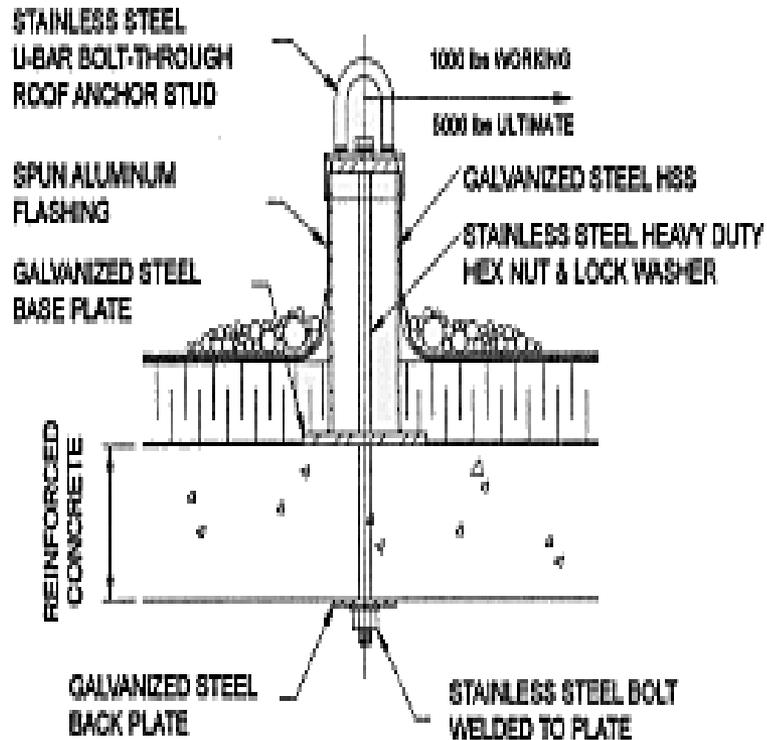
## ROOFING BRACKETS

**SLIDE GUARDS ARE NOT APPROVED  
FALL PROTECTION DEVICE!!!**

# FALL PROTECTION DEVICES

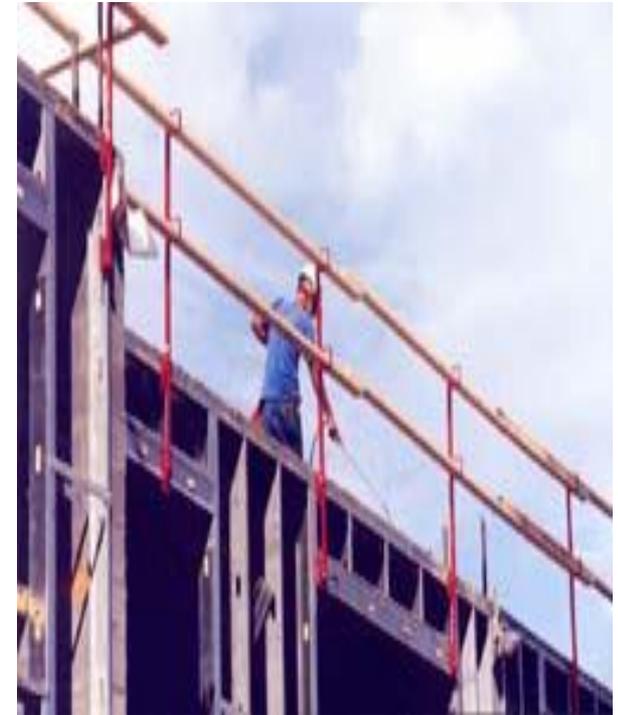
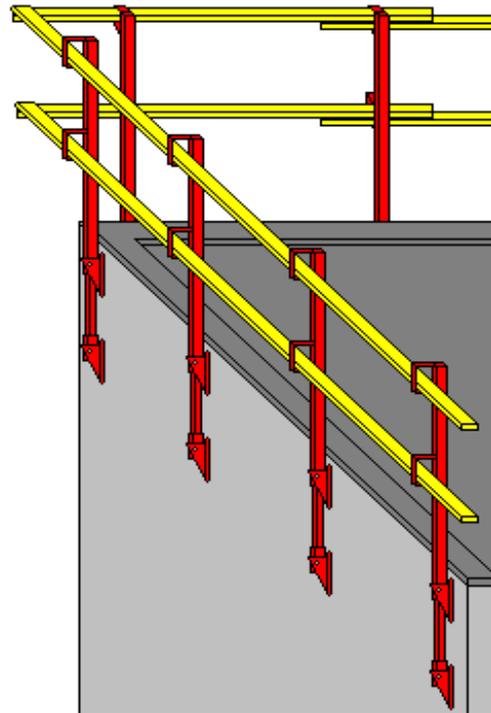


# FALL PROTECTION DEVICES



## BUILT-IN ROOF ANCHORS

# FALL PROTECTION DEVICES

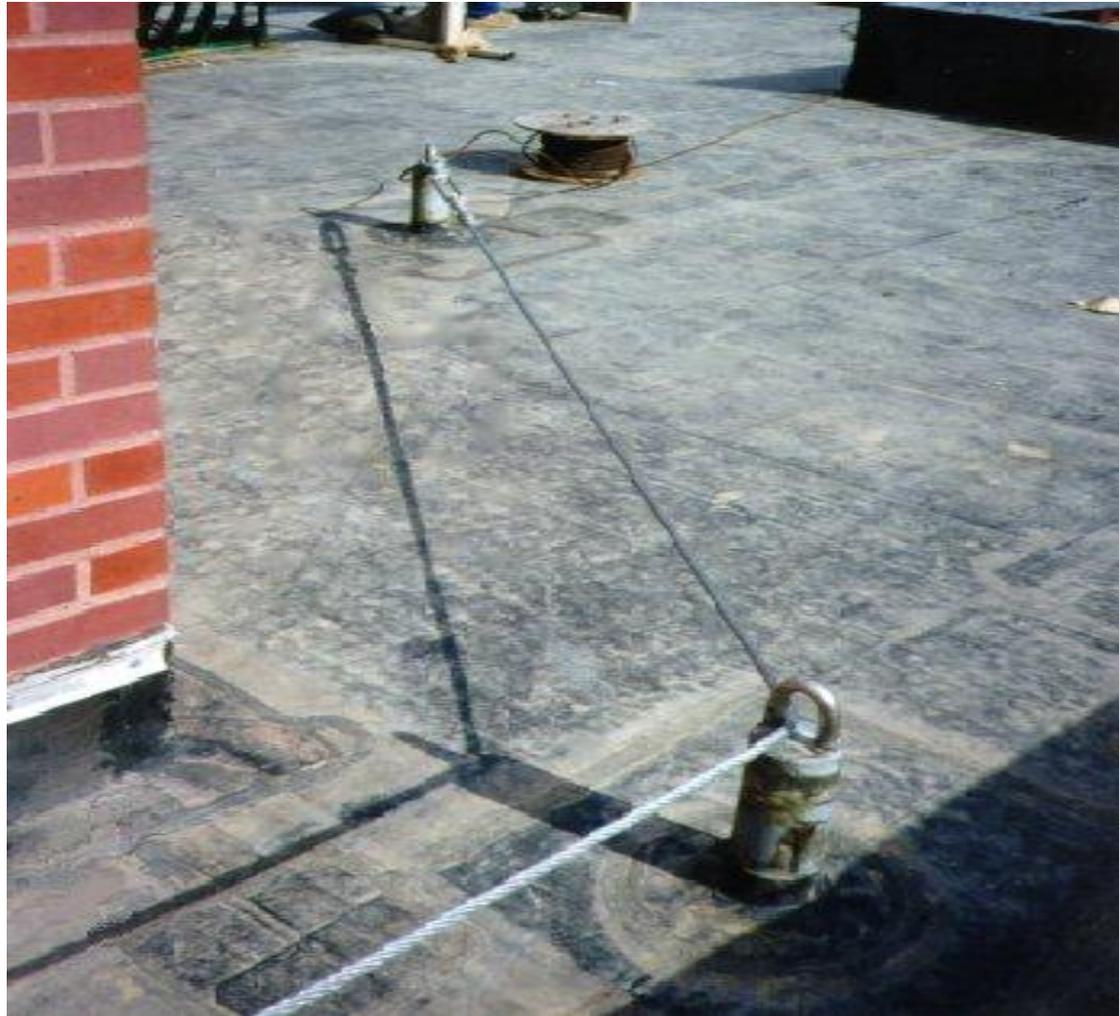


## WALL MOUNTED SAFETY RAILING



## **SELF RETRACTING LANYARD WITH DOUBLE LOCKING HOOK AND CARABEENER**

# FALL PROTECTION DEVICES



**HORIZONTAL LIFE LINE**

# ACCESSWAY COVERS & GUARDING

Every hatchway, chute and floor opening is to be guarded by a hinged floor-opening cover. The opening is to be barricaded with railing so as to leave only one side exposed; the exposed side is to be provided either with a swinging gate or offset so that a person cannot walk into the opening.



Ref: 24.A.07

# FALL PROTECTION DEVICES



**ROOF BRACKET**



**ROPE GRAB ON A  
LANYARD WITH  
DECELERATION  
DEVICE**

# PERSONAL FALL ARREST SYSTEM (PFAS)



1. SAFETY HARNESS
2. LANYARD WITH DECELERATION DEVICE
3. ATTACHMENT POINT
4. **ALL HARNESS & LANYARDS TO BE MADE OF SYNTHETIC MATERIALS**

