



FALL PROTECTION AWARENESS

Safety & Site Support Division/Office of Construction Safety



Why Fall protection?

Causes of **DEATH** from **FALLS**



By the Numbers



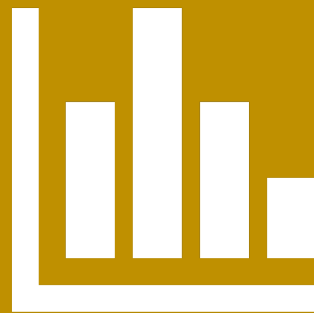
Types of Fall Protection Systems



Fall Protection Requirements



By the Numbers

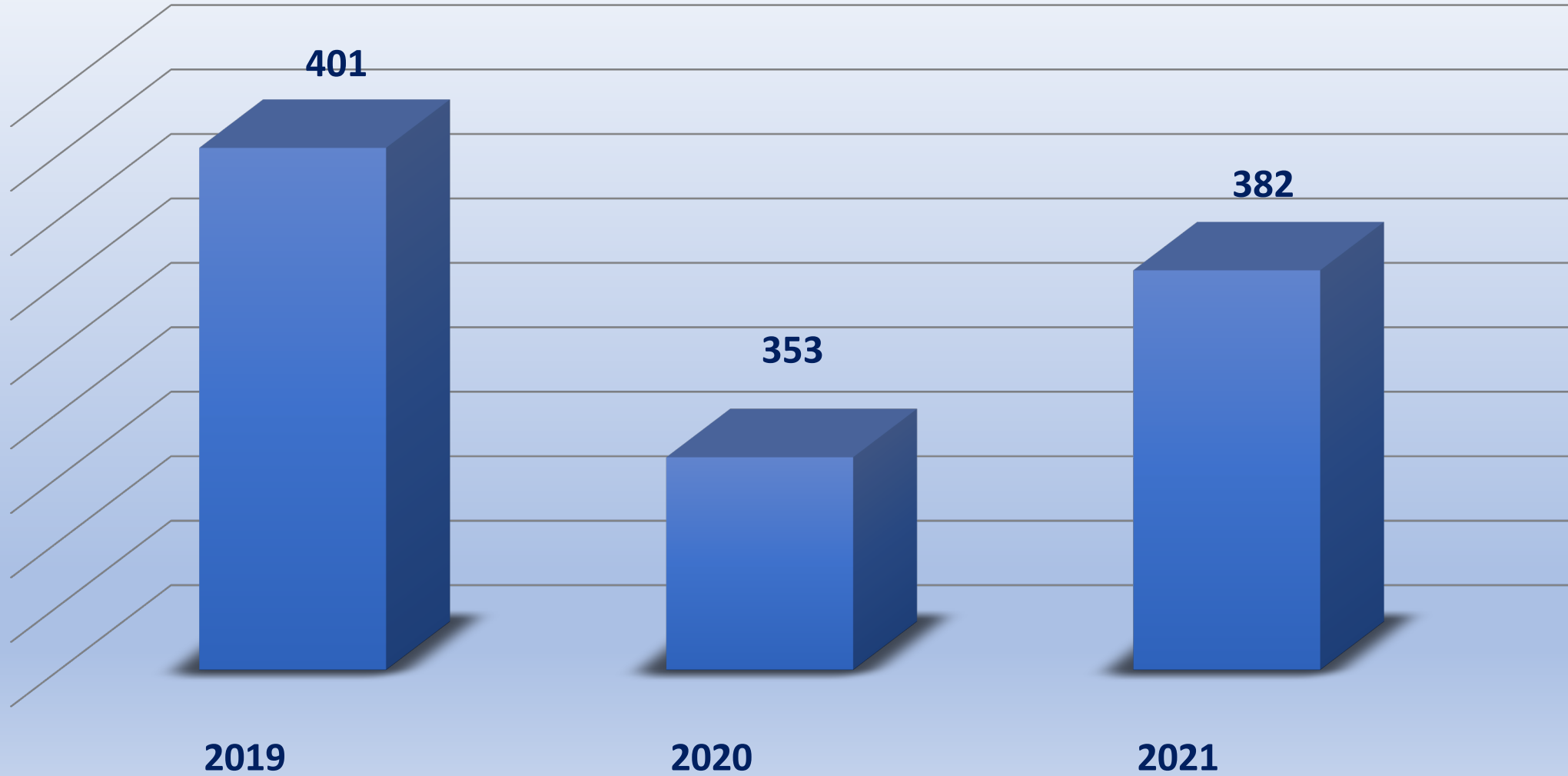


Industry

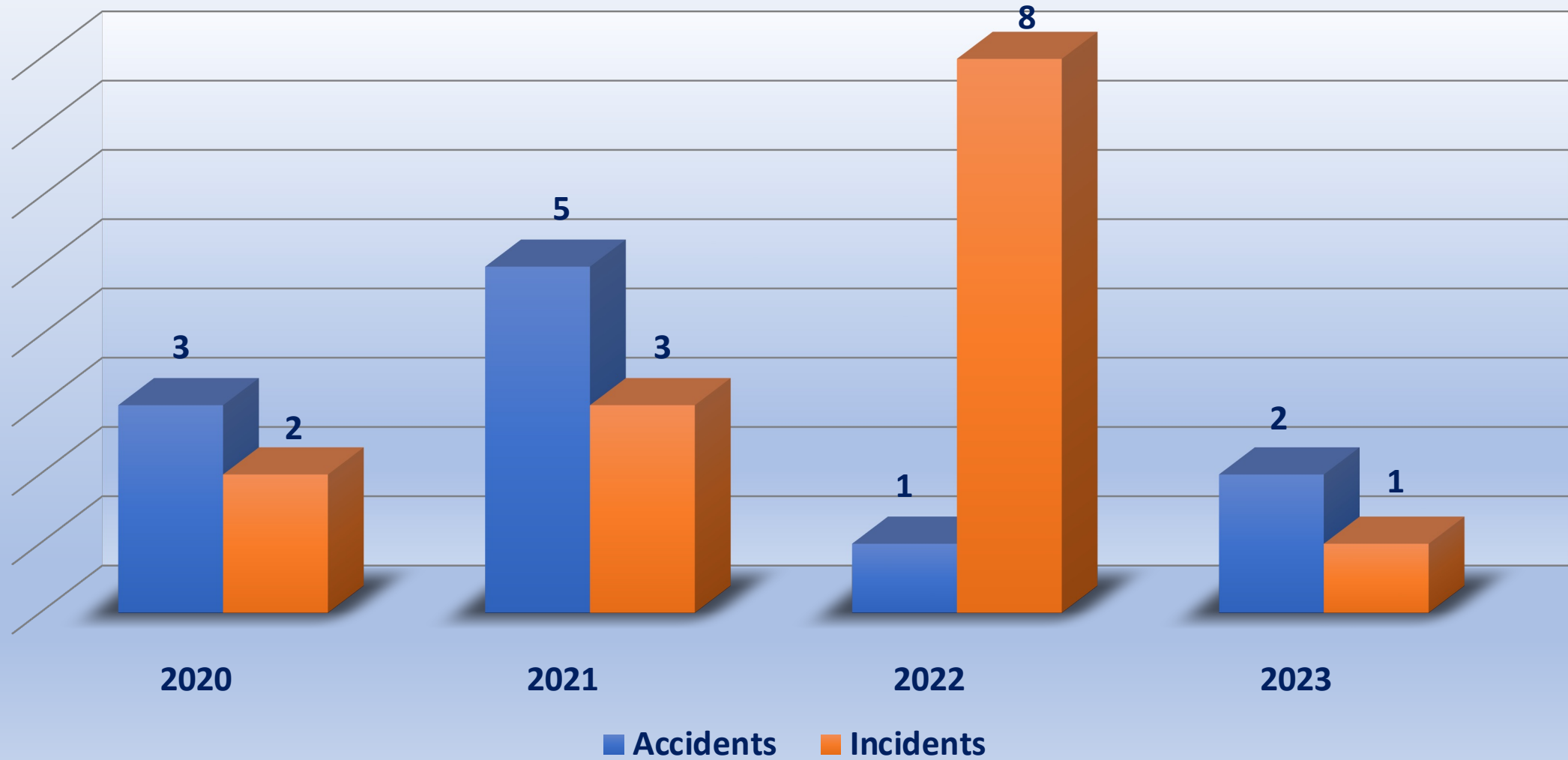
DDC
Accidents &
Incidents

DDC
Stop Work
Orders

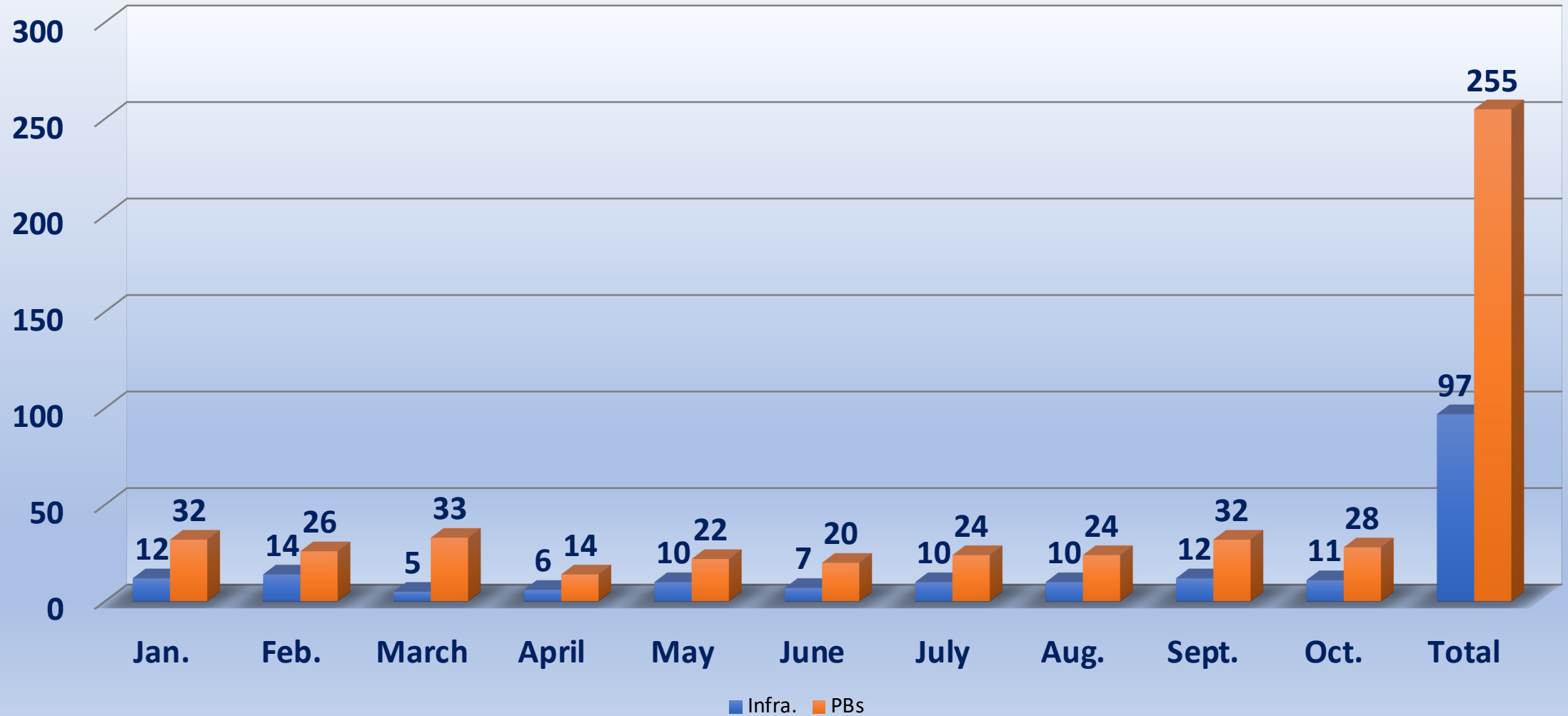
Fall Fatalities Construction Industry



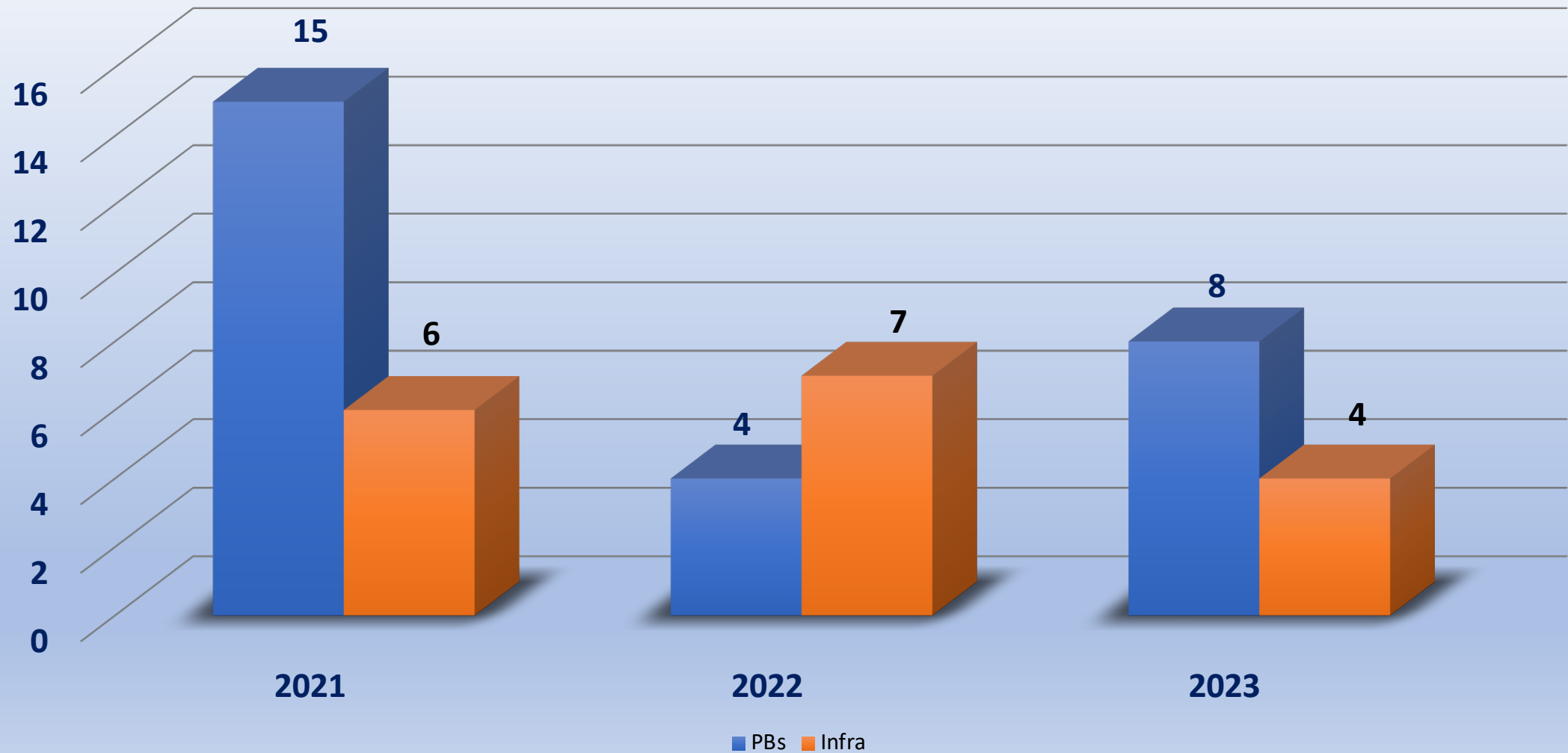
Falls DDC Construction Projects



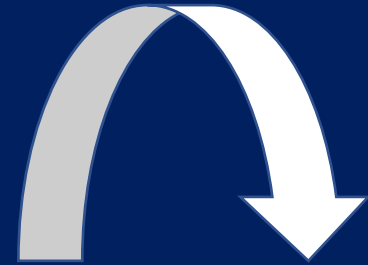
Fall Protection High Risk Deviations - YTD



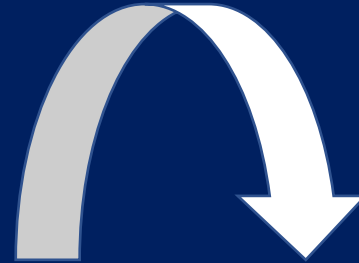
SWOs on DDC Projects



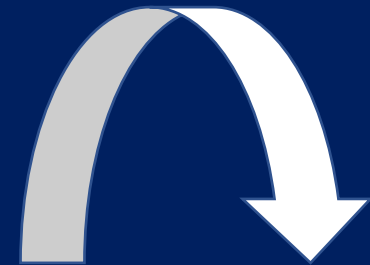
Fall Protection Requirements



General Construction



Scaffolds



Steel Erection



At What Height is Fall Protection **REQUIRED?**



OSHA requires that each employee on a walking/working surface with an unprotected side or edge which is 6 feet or greater above a lower level be protected from falling (Subpart M)



Each employee on a scaffold more than 10 feet above a lower level shall be protected from falling to that lower level (Subpart L)



Each employee engaged in steel erection activity who is on a walking/working surface with an unprotected side or edge more than 15 feet above a lower level shall be protected from fall hazards (Subpart R)



Note: Connectors and employees working in controlled decking zones shall comply with fall protection requirements under **29 CFR 1926.760 (b) & (c)**

Fall Protection Systems



Guardrail System

Personal Fall Arrest System

Safety Net System

Positioning Device System

Warning Line System

Controlled Access Zone

Safety Monitoring System

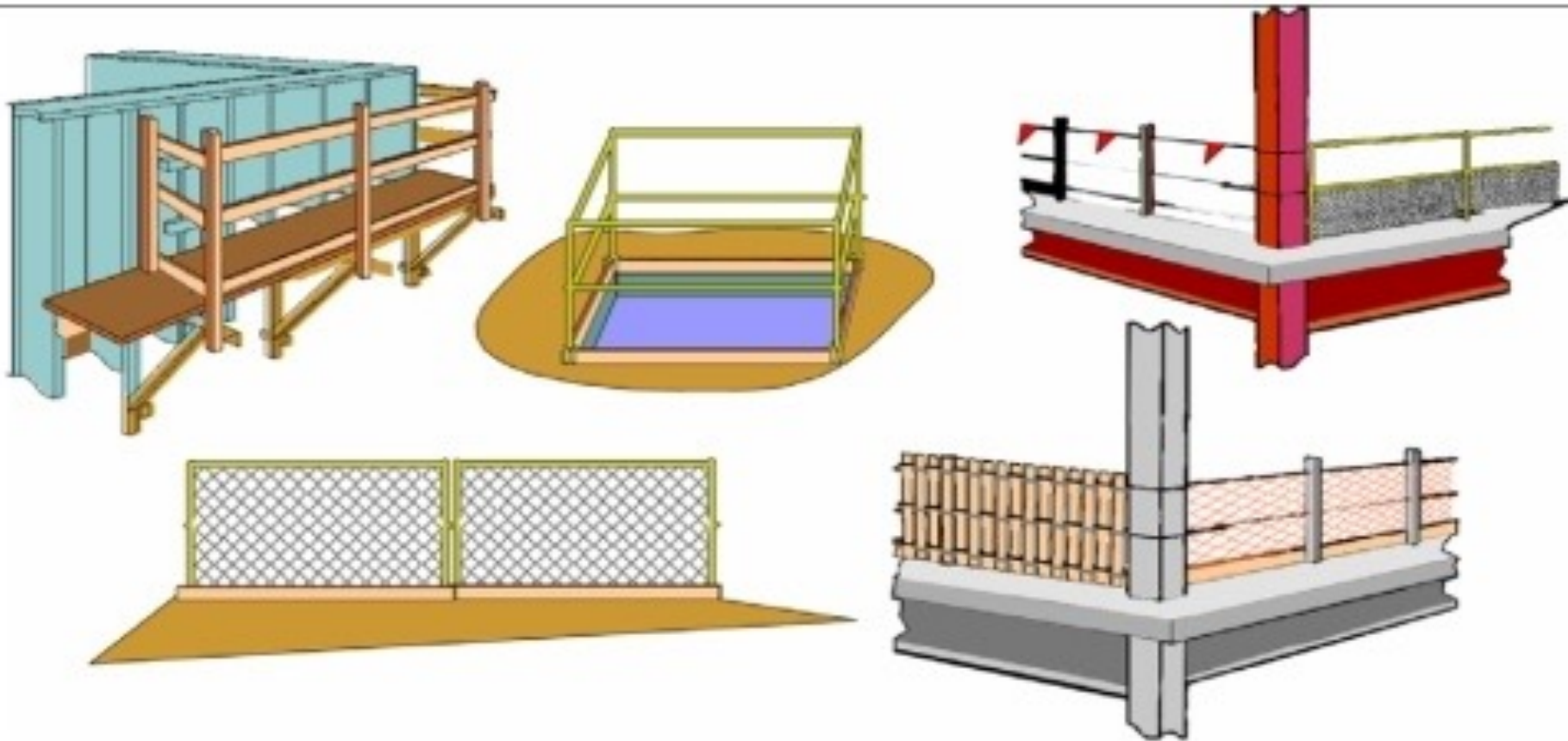
Guardrail System

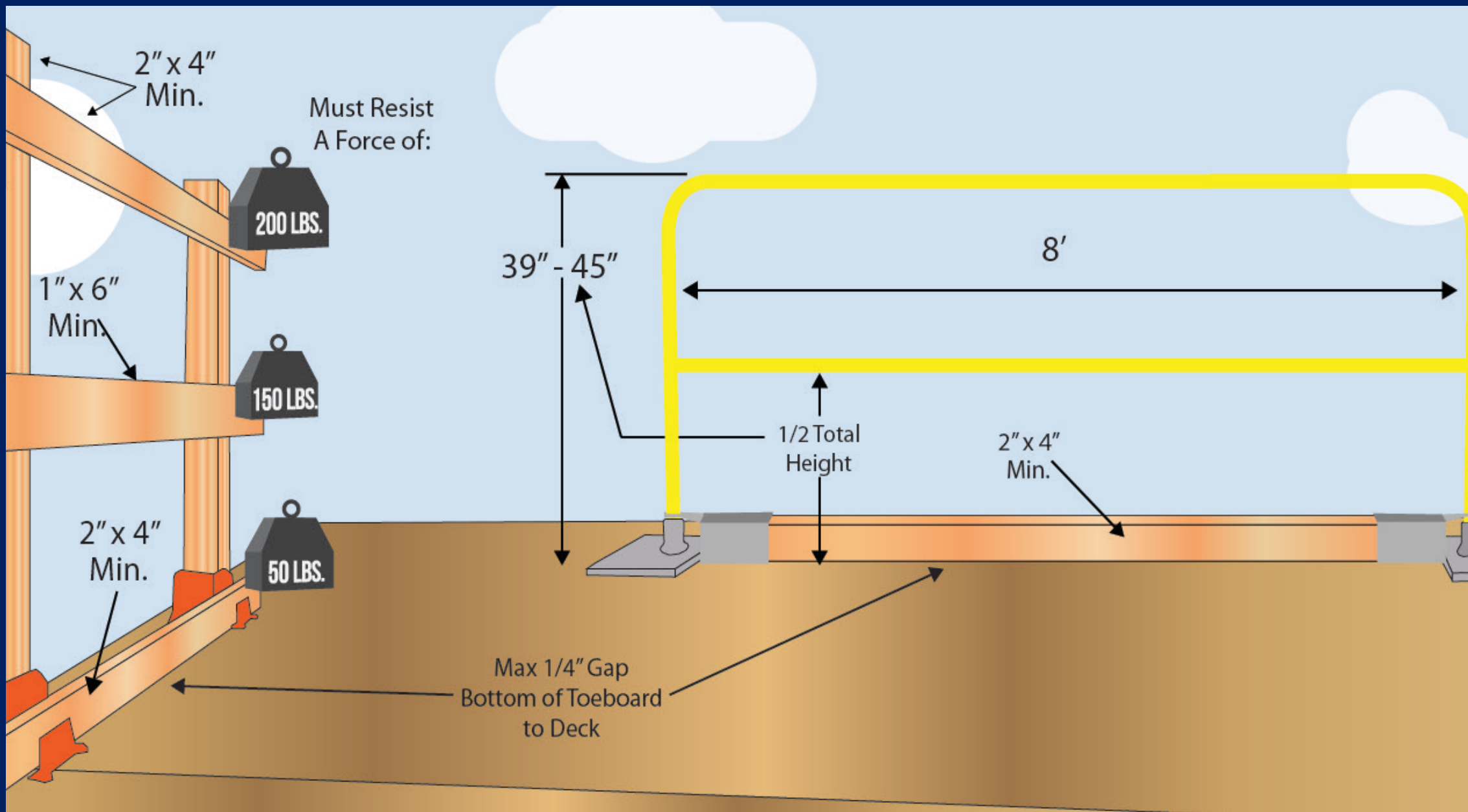


Guardrail Systems

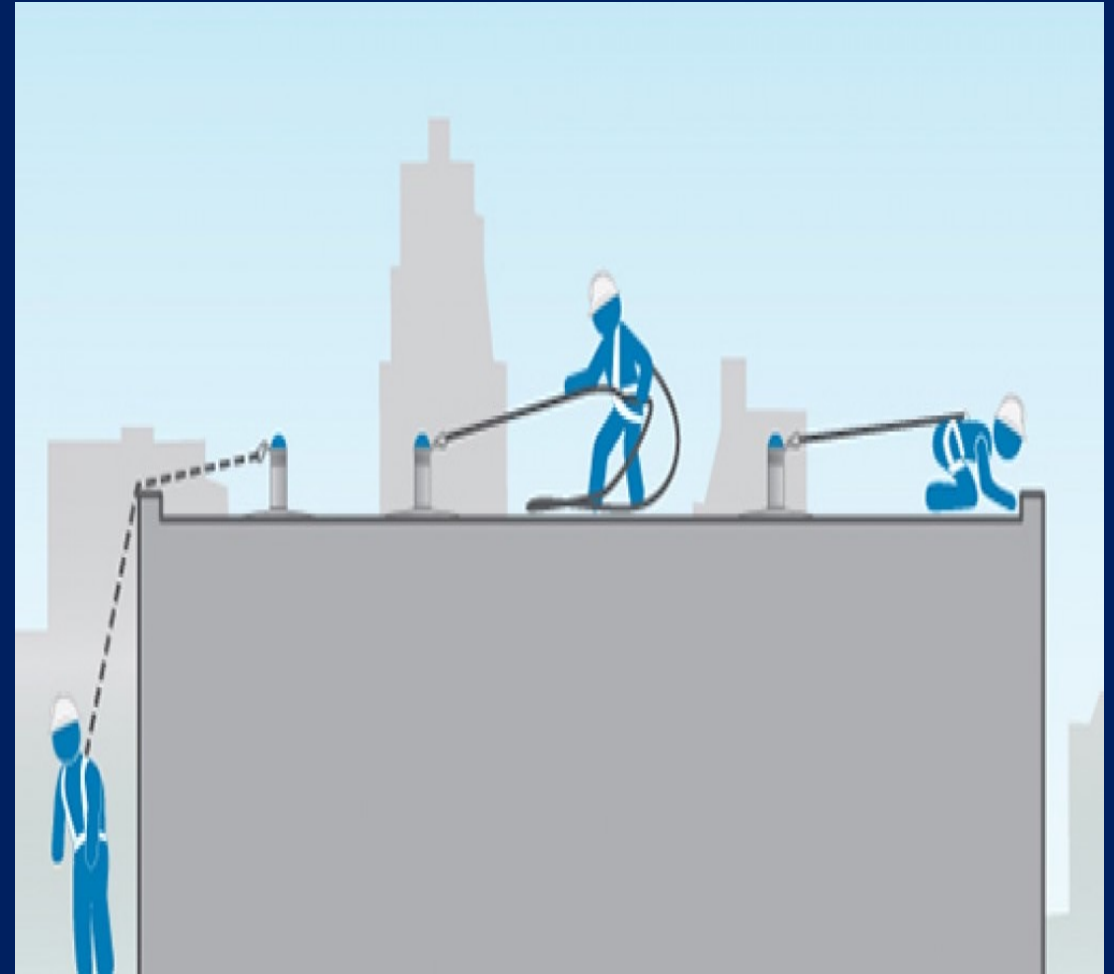
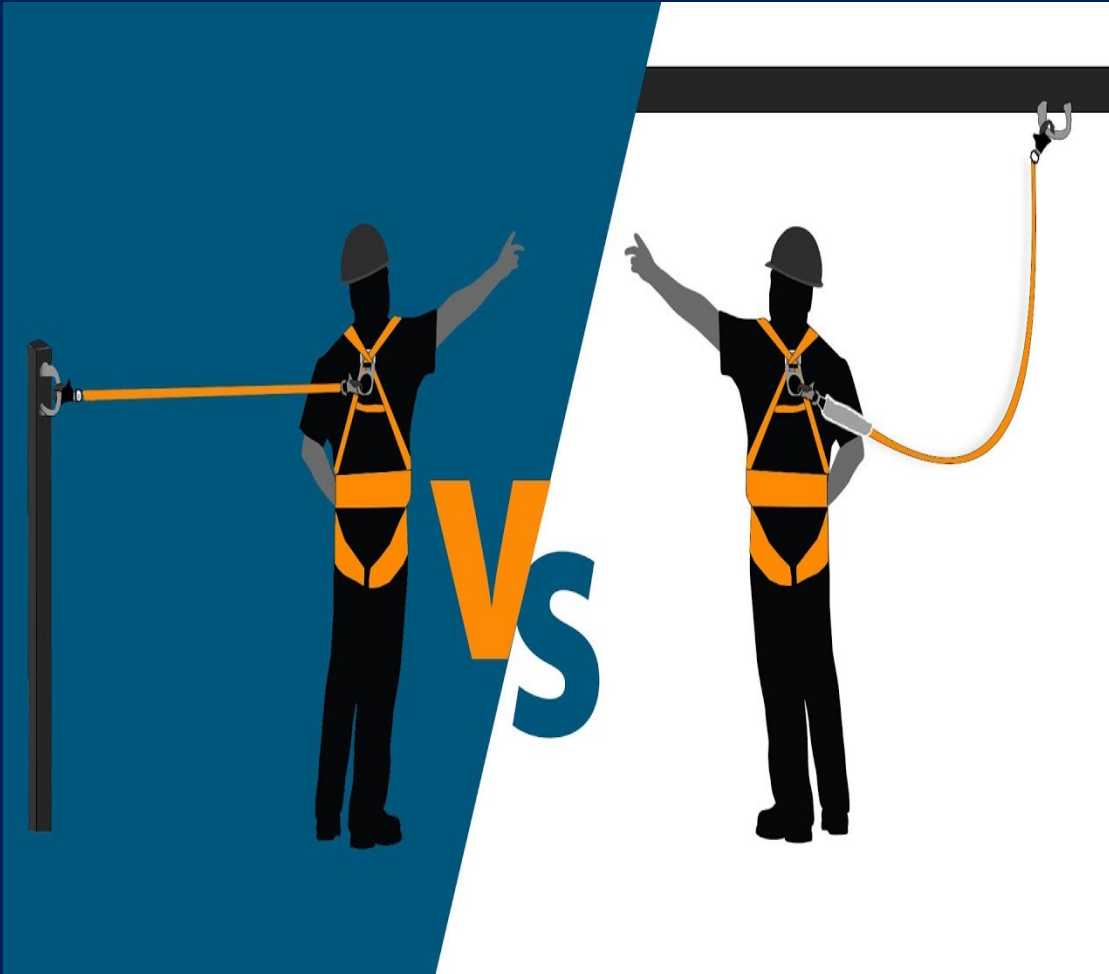
OSHA Subpart M – 1926.502(b)

GI

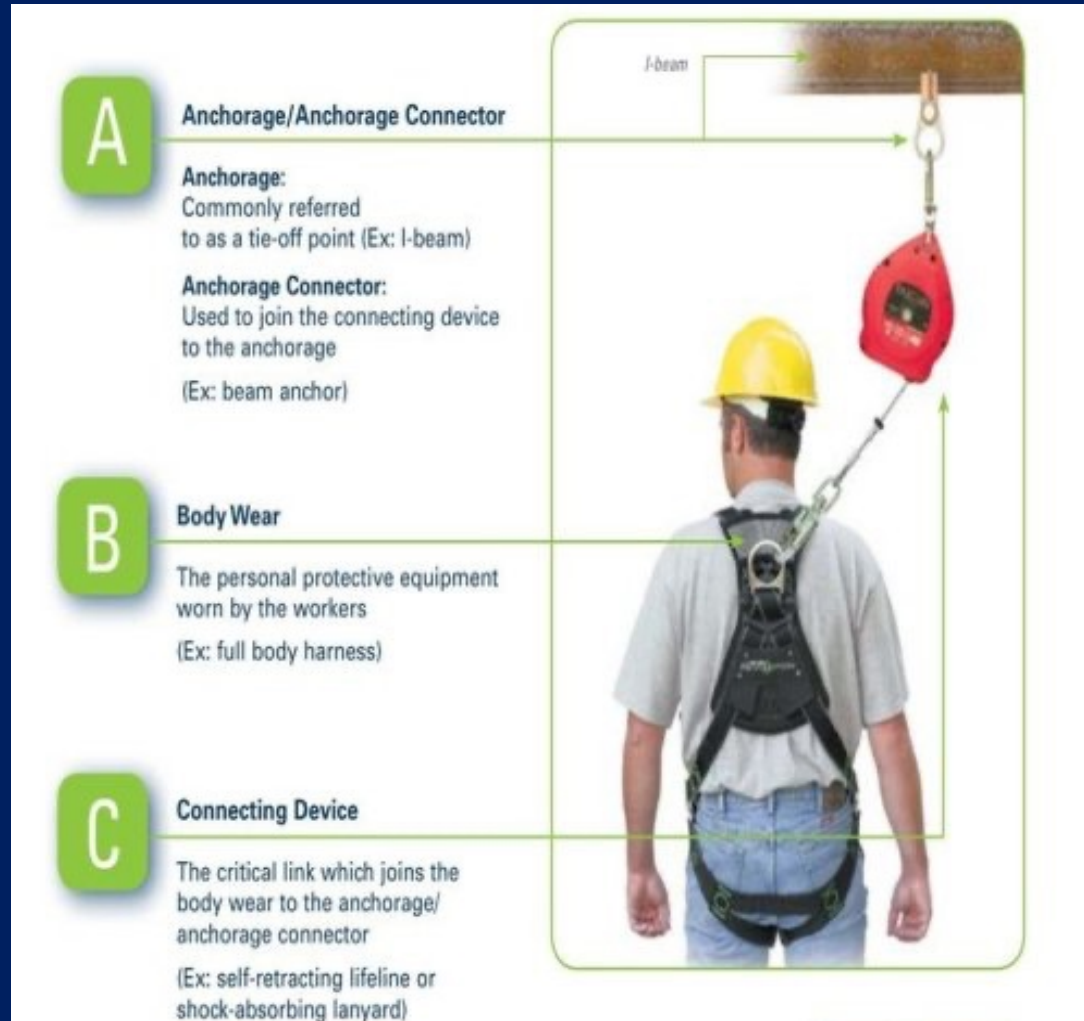




Fall Restraint System vs Fall Arrest System



Personal Fall Arrest System



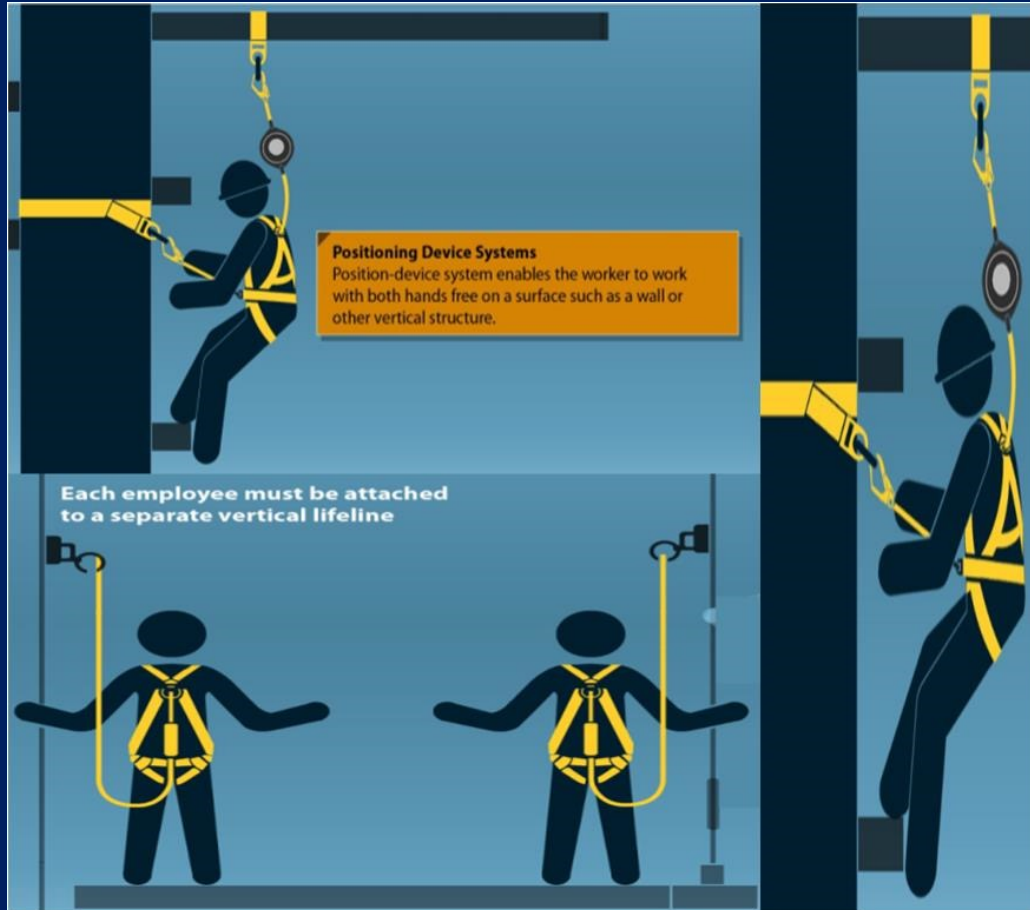
- Shall be inspected prior to each use
- Attachment point to body harness shall be in center of wearer's back
- Limit fall to 6 feet and prevent contact with lower levels
- Maximum deceleration to 3.5 feet
- D-rings and snap hooks - 5K lbs minimum tensile strength
- Self retracting lifelines and lanyards:
 - 2' fall distance - 3K lbs tensile strength
 - greater than 2' - 5K lbs tensile strength
- Anchorages must support at least 5K lbs force

Fall Restraint System



- Fall restraint systems prevent the user from falling any distance
- Consider the force that would be generated by the worker walking, leaning, or sliding down the working surface
- At a minimum, fall restraint systems should have the capacity to withstand at least 3,000 pounds of force or twice the maximum expected force that is needed to restrain the worker from exposure to the fall hazard

Positioning Device Systems



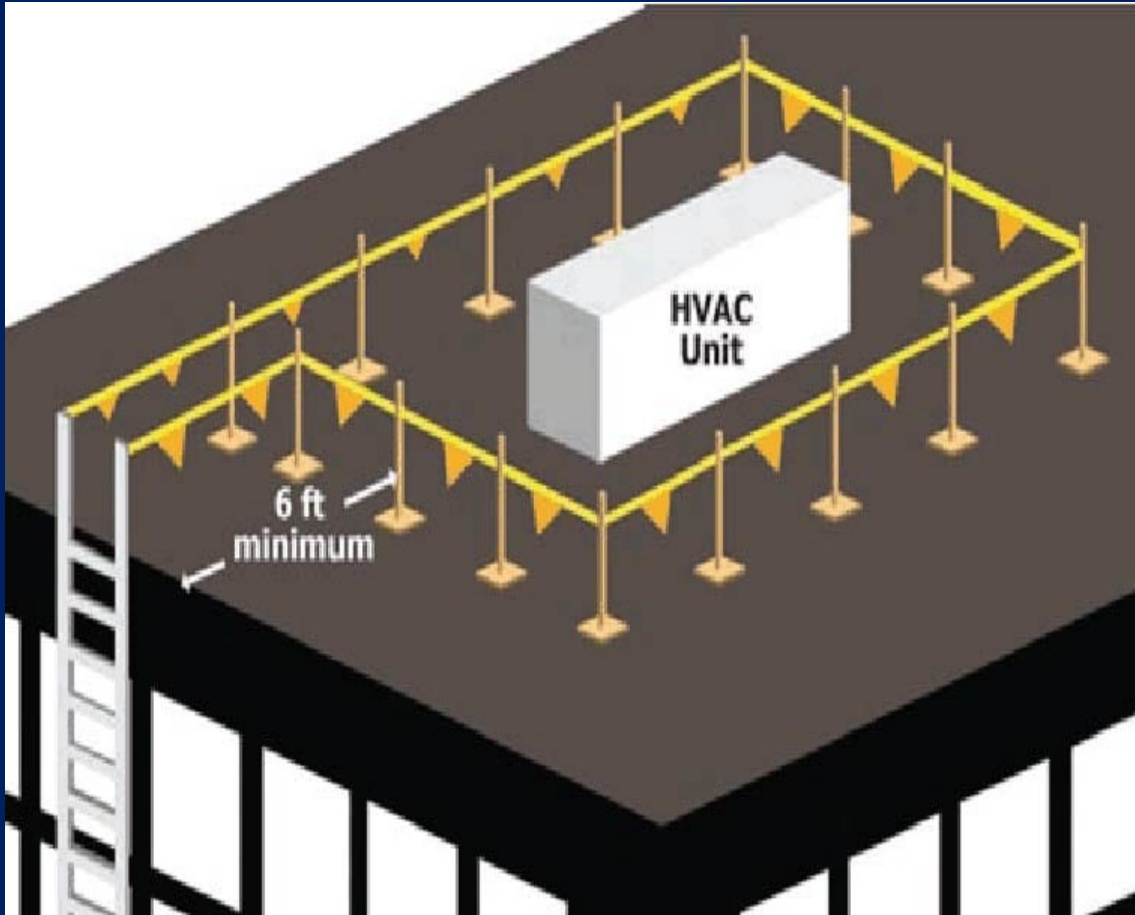
- A body belt or body harness rigged to allow a worker to be supported on an elevated vertical service
- Allows to work with both hands free while leaning
- Limit free fall no farther than 2 feet
- Anchorage capable of supporting at least twice the impact load of a worker's load or 3K lbs, whichever is greater
- Connecting assembly tensile strength of 5K lbs (D-ring, snaphook)

Safety Net System



- Shall be provided when work surfaces are 25' above the ground or water or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety belts is impractical
- Operations shall not be undertaken until the net is in place and has been tested
- Shall extend 8 feet beyond the edge of the work surface
- Installed as close under the work surface as practical but in no case more than 25' below such work surface
- Mesh size of nets shall not exceed 6" by 6"; 17,500 foot-pounds minimum impact resistance and shall bear a label of proof test
- Edge ropes shall provide a min breaking strength of 5K lbs
- Forged steel safety hooks or shackles shall be used to fasten the net to its supports
- Connections between net panels shall develop the full strength of the net

Warning Line System



- Warning lines shall consist of ropes, wires, or chains, and supporting stanchions
- Erected on all sides of roof work and flagged every 6'
- The warning line shall be erected not less than 6' (1.8 m) from the roof edge
- Not less than 10' (3.1 m) from the roof edge which is perpendicular to the direction of mechanical equipment operation
- Sag of no less than 34" (.9 m) and highest point of 39" from walking/working surface
- Capable of resisting, without tipping over, a force of at least 16 lbs (71 N) applied horizontally against the stanchion
- The rope, wire, or chain shall have a minimum tensile strength of 500 lbs

Controlled Access Zone



- Used to control access to areas where leading edge and other operations are taking place
- Authorized workers only
- Defined by control lines, barriers, markers
- Control lines are rope, wire, or tape
- Flagged at every 6' or less
- Lines 39" to 45" high
- Minimum breaking strength 200 lbs
- Must extend length of unprotected edge and be parallel with edge
- Must connect with guardrail system or wall
- Erected not less than 6' or not greater than 25' from the unprotected or leading edge, except when erecting precast concrete, than no greater than 60' from the leading edge

Safety Monitoring System

WARNING LINES SAFETY MONITOR



Requires a competent person who shall:

- Warn employees when it appears employee is unaware of fall hazard or acting unsafely
- Be on the same working/walking surface
- Be within sight
- Be close enough to communicate orally with employees
- Have no other responsibilities that could distract from monitoring

Walking/Working Surface integrity



Walking/Working Surface integrity



Walking/Working Surface integrity

1926.501(a)(2)

The employer shall determine if the walking/working surfaces on which its employees are to work have the strength and structural integrity to support employees safely. Employees shall be allowed to work on those surfaces only when the surfaces have the requisite strength and structural integrity.

Covers

1926.502(i)(2)

All other covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.

1926.502(i)(3)

All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.

