

1  **Construction Safety**
Top Ten OSHA Citations for Construction

Presented by:
 Curt Mott, CSP, ARM
 WCF Safety

2  **Most Frequently Cited Serious Violations**
in Construction – FY 2007

3  **OSHA**

- Occupational Safety and Health Act
- Occupational Safety and Health Administration
- Federal OSHA
 - www.osha.gov
- States can have their own OSHA as long as they are as strict as Federal OSHA
- About half the states have a state OSHA program
-

4 

5  **Utah OSHA**

- Generally follows the Federal OSHA regulations
- www.uosh.utah.gov
- Enforcement (801) 530-6901
- Consultation (801) 530-6855
 - Provides at the employers request a non-penalty approach to safety and health concerns in the workplace, at no charge

6  **OSHA Inspection Priorities**

- Imminent Danger
- Catastrophes and Fatalities
- Employee Complaints
- Programmed High Hazard Inspections
- Follow-up Inspections

7  **OSHA Inspection Process**

- Compliance officer displays credentials
- Opening Conference
 - Explains why facility was selected
 - Explains purpose of visit
- Inspection Tour
 - Unsafe conditions or practices pointed out
- Closing Conference
 - Reviews inspection findings, possible citations, time needed for abatement
-

8  **Citations**

- Area Director (not the compliance officer) may issue citations and penalties after reviewing the inspection report
- Citation letter sent by certified mail
- 6 month limit from inspection to issue citations
- Specific violations and applicable standard cited
- Proposed penalties determined by size of business, good faith of employer, seriousness of violation, history of previous violations

9  **Violation Types**

- Serious – high probability of death or serious harm
 - Fine up to \$7000
 - Willful – employer knowingly commits a violation
 - Fine up to \$70,000
 - Repeat – up to \$70,000 fine
 - Failure to abate – up to \$7000 per day
 - Other than serious – probably wouldn't cause death or serious harm
- 10  **Contesting the Citation**
- Employer has 15 working days upon receipt of the citation to contest the citation, proposed penalty, or the abatement timeline
 - Must notify the Area Director in writing
 - Contested citations are then forwarded to the Occupational Safety and Health Review Commission (OSHRC)
 - Citations must be posted for 3 working days or until violation is abated (whichever is longer)
- 11  **OSHA Recordkeeping Requirements**
- Employers with 10 or more employees at any time throughout the year are required to keep the OSHA 300 log
 - Some low hazard industry exceptions
 - All cases requiring medical treatment require recording on the log (7 days)
 - The OSHA summary log (300A) is required to be posted in the workplace from Feb 1 through April 30 for prior year
- 12  **UOSHA Reporting Requirements**
- Each employer shall within 8 hours of occurrence notify UOSHA of any work related fatalities, of any disabling, serious, or significant injury and of any occupational disease incident
 - (Utah Administrative Code R614-1-5C)
 - UOSHA Enforcement (801) 530-6901
- 13  **Most Frequently Cited Serious Violations in Construction – FY 2007**
- 14  **Subpart M - Fall Protection (1926.500 - 503)**
- 15  **Hoover Dam Construction Facts - 1936**
- ¹ • 5 years to construct
 - Height – 726 feet
 - # of work related deaths = 104
- 16  **Hoover Dam Bypass Bridge - 2004**
- Began in 2004
 - Longest concrete arch in North America
 - # of work related deaths = 0
- 17  **29 CFR 1926 Subpart M**
- Duty to have fall protection – 1926.501
 - 1926.501(a)(1): This section sets for the requirements for employers to provide Fall Protection Systems.
 - Guardrails
 - Safety Nets
 - Personal Fall Arrest Systems
 - Fall Restraint
 - Positioning devices
 - Suspension

– Retrieval / rescue

18  **1926.501(b)**

Specific locations where Fall Protection is required:

- 1
 - Unprotected sides and edges
 - Leading edges
 - Hoist areas
 - Holes
 - Formwork and reinforcing steel
 - Ramps/runways
 - Excavations
-
- 2
 -
 - Overhand bricklayer and related work
 - Roofing work on Low-sloped roofs
 - Steep roofs
 - Precast steel erection
 - Residential construction
 - Wall openings
 - Other surfaces not addressed.

19  **Guardrail System**

Definition: A barrier erected to prevent employees from falling to lower levels.

The top rails of guardrail systems shall be 39" to 45" in height; midrails shall be installed midway between the top edge of the guardrail system and the walking surface. The system shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any downward or outward direction, at any point along the top edge.

20  **Personal Fall Arrest System**

- Consists of :
 - Full body harness
 - Shock absorbing or retractable lanyard
 - Anchorage point & connector must support 5,000 lb. Impact force per person

21  ***Harness and Belts***

- Body belts are not permissible for use in fall arrest systems

Harness

- Distributes the impact through the body - lessens impact on any individual part
- Allows for better circulation
- Keeps the body suspended upright
- Normally, a maximum rating 310 lbs (including tools)

22  ***Lanyards***

- *Two styles:*
 - Shock absorbing for fall arrest
 - Straight lanyard for fall restraint
- Inspect before each use
- Connects the harness to deceleration device or anchorage point.
- Rope, high-tensile strength webbing, or steel cable.

- Maximum free fall = 6 feet for fall arrest.

-

23 24 

D-rings and snaphooks

- 5000 lb. Tensile strength
 - Proof tested to 3600 lbs.
 - Snap hooks must be only double locking to prevent rollout

25 

Lifelines

- Designed by a qualified person.
- Free fall maximum = 6 feet.
- Harness arrest force maximum 1,800 lb.
- No contact of lower level.
- Inspect prior to use.

26 27 28 29 30 31 32 33 34 35 36 37 

Fall Protection Plan

- Can only be used in:
 - Leading edge work
 - Precast concrete erection
 - Residential construction
- Must identify areas where conventional fall protection is not feasible.
 - CAZ
 - Safety Monitor

38 

Training – 1926.503

- Training program
- Trained by competent person
 - Nature of fall hazards
 - Erection and use of all fall protection controls.
 - Their part in the Fall Protection Plan
 - Fall protection standards
- Re-training
- Certification

39 

Subpart E - Personal Protective & Life Saving Equipment (1926.95 - 107)

40 41 

Training to Include:

- when PPE is necessary
- what PPE is necessary
- how to don, doff, adjust, and wear PPE
- limitations of PPE

- proper care, maintenance, useful life and disposal of PPE
- 42  **Subpart L - Scaffolds (1926.450 - 454)**
Scaffolds above 10 ft. - Fall protection
- 43  **What is a Scaffold**
An elevated, temporary work platform
- Three basic types:
- Supported scaffolds -- platforms supported by rigid, load bearing members, such as poles, legs, frames, & outriggers
 - Suspended scaffolds -- platforms suspended by ropes or other non-rigid, overhead support
 - Aerial Lifts -- such as "cherry pickers" or "boom trucks"
-
- 44  **Hazards**
- Employees working on scaffolds are exposed to these hazards:
 - Falls from elevation – caused by slipping, unsafe access, and the lack of fall protection
 - Struck by falling tools / debris
 - Electrocutation – from overhead power lines
 - Scaffold collapse - caused by instability or overloading
 - Bad planking giving way
-
- 45  **Fall Hazards**
- Falls may occur:
 - While climbing on or off the scaffold
 - Working on unguarded scaffold platforms
 - When scaffold platforms or planks fail
- 46  **Protecting Workers From Falls**
- If a worker on a scaffold can fall more than 10 feet, protect them by:
 - Guardrails, and/or
 - Personal Fall Arrest Systems (PFAS)
- 47  **Guardrails**
- Install along open sides & ends
 - Front edge of platforms not more than 14 inches from the work, unless using guardrails and/or PFAS

- Top rails - 38 to 45 inches tall
- Midrails halfway between toprail and platform
- Toeboards at least 3-1/2 inches high
-

48 **Anything Missing?**49 **Personal Fall Arrest System (PFAS)**

You must be trained how to properly use PFAS

PFAS include anchorage, lifeline and body harness.

50 **Fall Protection Requirements**

- Can use PFAS instead of guardrails on some scaffolds
- Use PFAS & guardrails on suspension scaffolds
- Use PFAS on erectors and dismantlers where feasible

Anything missing in the picture?

51 **Falling Object Protection**

- Wear hardhats
- Barricade area below scaffold to forbid entry into that area
- Use panels or screens if material is stacked higher than the toeboard
- Build a canopy or erect a net below the scaffold that will contain or deflect falling objects

52 **Overhead Power Lines**53 **Scaffold Support Examples**54 **Essential Elements of Safe Scaffold Construction**55 **Scaffold Platform Construction**56 **Scaffold Platform Construction**57 **Scaffold Platform Construction**58 **Scaffold Height**59 **Platform Ends**60 **Supported Scaffolds**61 **Proper Scaffold Access**62 **Scaffold Access**63 **Suspension Scaffolds**

- Platforms suspended by ropes or wires. Rope must be capable of supporting 6 times the load

Train employees to recognize hazards

Secure/tie to prevent swaying

Support devices must rest on surfaces that can support four times the load

Competent person:

- evaluate connections to ensure the supporting surfaces can support load
- inspect ropes for defects before shift

PFAS must have anchors independent of the scaffold support system

•

64 **Moving Scaffolds**

- Employees can't be on a moving scaffold unless:
 - Surface is level
 - Height to base ratio is 2 to 1
 - Outriggers are installed on both sides of scaffolds
-
- Employees can't be on scaffold part beyond the wheels
-
- Competent person must be on site to supervise
-

65 **Fall Protection in Boom Lifts/ Buckets**

66 **Fatal Fact- Moving a Lift**

- Employee was operating an aerial lift, with an extendable boom rotating work platform
-
- The boom was fully extended and the machine apparently ran over some bricks, causing the boom to flex or spring, throwing the employee from the basket
-
- The employee fell 37 feet to a concrete surface
-

67 **Using Scaffolds**

- Don't work on snow or ice covered platforms or during storms or high winds
- Use tag lines on swinging loads
- Protect suspension ropes from heat & acid
-

68 **Fatal Fact- Ice & No Guardrails**

- Laborer was working on the third level of a

tubular welded frame
scaffold which was
covered with ice and snow

-
- The scaffold was not fully decked, there was no guardrail and no access ladder
-
- The worker slipped and fell head first 20 feet to the pavement below
-

69  **Competent Person**

Person capable of identifying and promptly correcting hazards

Determines if it's safe to work on a scaffold during storms or high winds

Trains workers to recognize hazards

Selects qualified workers to conduct work

70  **Scaffold Inspection**

Competent person inspects scaffolds for visible defects before each shift and after any alterations

Defective parts must be immediately repaired

71  **Scaffold Erection**

Scaffolds can only be erected, moved, dismantled or altered under the supervision of a competent person

Competent person selects & directs these workers and determines the feasibility of fall protection

72  **Training Requirements**

Train employees on scaffold hazards and procedures to

control the hazards

The training must include:

- Nature of electrical, fall, and falling object hazards
- How to deal with electrical hazards and fall protection systems
- Proper use of the scaffold
- Scaffold load capacities

Retrain as necessary

•

73  **Avoid the Main Hazards of Scaffolds**

- Falls From Elevation
- Bad Planking
- Scaffold Collapse
- Getting Struck by Falling Tools or Debris
- Electrocutation

•

74  **Subpart X – Stairways & Ladders (1926.1050 - 1060)**

Stairrails & handrails

75  **General Requirements 1926.1051(a)**

(a) A stairway or ladder shall be provided at all personnel points of access where there is a break in elevation of 19 inches or more, and no ramp, runway, sloped embankment, or personnel hoist is provided.

76  **Ladders 1053 (b) Use**

- (1) When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet above the upper landing surface.....
- Grab-rails may be used in lieu of this extension provided top is rigidly secured with no deflection

77  **LADDERS & STAIRS**

–

–

78  **LADDERS & STAIRS**

–

–

79  **Ladders 1053 (b) Use**

- (5)(i) Proper angle (4 to 1)
- (6) Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement.
- (15) Inspected by competent person
- (20) User faces the ladder when ascending or descending
- (21,22) User shall use at least one hand to grasp the ladder...shall not carry any object

80 

81  **STAIRWAYS & LADDERS**

-
-
-
-
-

82  **(c) Stairrails and handrails**

- (1) Stairways having FOUR or more risers or rising more than 30 inches, whichever is less, shall be equipped with:
 - (i) At least one handrail; and
 - (ii) One stairrail system along EACH unprotected side or edge.

83  **Stairways and Ladders**

1060 Training Requirements

- (a) Recognize and minimize hazards
- (1) Trained by competent person
 - (i) Nature of fall hazards
 - (ii) Correct procedures for erecting, maintaining, and disassembling the fall protection to be used
 - (iii) Proper construction, use, placement and care in handling all stairways and ladders

84  **1060 Training Requirements**

- (iv) The maximum intended load-carrying capacities of ladders used; and
- (v) The standards contained in this subpart
- (b) Retraining shall be provided for each employee as necessary.....