

Work at Heights: Falling Object Struck-by Hazards

Objects that fall from heights include tools, equipment, materials, and debris. Workers can be injured or killed by a falling or dropped object.

Protect workers by:

- Having them secure tools and materials to prevent them from falling. Small tools (less than 5lbs) can be tethered to the worker.
- Using measures such as toeboards, screens, guardrails, debris nets, catch platforms, or canopies to prevent, catch, or deflect falling objects.
- Barricading hazard areas and posting warning signs.
- Requiring use of helmets or hard hats and routinely inspecting them for damage.
- Inspecting all tools and equipment before use. Hand tools with loose or cracked handles should not be used.
- Keeping materials away from floor openings or leading edges.
- Training workers on hazards and ways to prevent an incident.


Planning Resources

- [Job Hazard Analysis](#)
- [Building Information Modeling \(BIM\) for Safety Planning](#)
- [Using Debris Nets](#)
- [Using Tool Lanyards, Connection and Anchorage Points](#)
- [CPWR's Head Protection Webpage](#)
- [OSHA Competent Person Resources](#)
- Preventing Struck-by Incidents from Dropped Tools & Other Objects: [Play Recording](#); [PDF of Slides](#)

Training Resources

- Toolbox Talks:
 - [Preventing Falling Objects](#)
 - [Challenges Preventing Falling Objects](#)
 - [Solutions for Falling Objects and Dropped Tools](#)
 - Equipment: Falling Objects ([English](#), [Spanish](#))
 - Head Protection ([English](#), [Spanish](#))
- Hazard Alert Cards:
 - Preventing Head Injuries ([English](#), [Spanish](#))
- Posters/Infographics:
 - Stop the Drop (English [PDF](#) & [JPEG](#))
 - How Heavy is Deadly? (English [PDF](#) & [JPEG](#))
 - Head Protection (English [PDF](#) & [JPEG](#))
 - In 1 Strike You Could Be Out (English [PDF](#) & [JPEG](#))
- Webinars:
 - Preventing Struck-by Incidents from Dropped Tools & Other Objects: [Play Recording](#); [PDF of Slides](#)
 - Prevención de Incidentes por Atropellos: Zonas de Trabajo, Equipos Pesados e Impacto de Objetos: [ver video](#); [descargar presentación](#)

The greater the drop height, the greater the landing force.



Height	1 pound	2 pounds	5 pounds	10+ pounds
300 feet	Serious to Severe	Severe	Deadly	Deadly
200 feet	Serious to Severe	Severe	Severe to Deadly	Deadly
150 feet	Serious	Severe	Severe to Deadly	Deadly
100 feet	Serious	Severe	Severe	Deadly
50 feet	Serious	Serious to Severe	Severe	Severe to Deadly
20 feet	Serious	Serious	Severe	Severe to Deadly
10 feet	Serious	Serious	Serious to Severe	Severe
6 feet	Serious	Serious	Serious	Severe

Relevant Standards

- OSHA Standard 29 CFR - <https://www.osha.gov/laws-regs/regulations/standardnumber/1926>
 - [1926 Subpart C - General Safety and Health Provisions](#)
 - [1926.20 - General safety and health provisions.](#)
 - [1926.21 - Safety training and education.](#)
 - [1926.22 - Recording and reporting of injuries.](#)
 - [1926.23 - First aid and medical attention.](#)
 - [1926.25 - Housekeeping.](#)
 - [1926.26 - Illumination.](#)
 - [1926.28 - Personal protective equipment.](#)
 - [1926.29 - Acceptable certifications.](#)
 - [1926 Subpart E - Personal Protective and Life Saving Equipment](#)
 - [1926.95 - Criteria for personal protective equipment.](#)
 - [1926.96 - Occupational foot protection.](#)
 - [1926.100 - Head protection.](#)
 - [1926.102 - Eye and face protection.](#)
 - [1926.104 - Safety belts, lifelines, and lanyards.](#)
 - [1926.105 - Safety nets.](#)
 - [1926 Subpart G - Signs, Signals, and Barricades](#)
 - [1926.200 - Accident prevention signs and tags.](#)
 - [1926.201 - Signaling.](#)
 - [1926 Subpart H - Materials Handling, Storage, Use, and Disposal](#)
 - [1926.250 - General requirements for storage.](#)
 - [1926.251 - Rigging equipment for material handling.](#)
 - [1926.252 - Disposal of waste materials.](#)
 - [1926 Subpart N - Helicopters, Hoists, Elevators, and Conveyors](#)
 - [1926.551 - Helicopters.](#)
 - [1926.552 - Material hoists, personnel hoists, and elevators.](#)
 - [1926.554 - Overhead hoists.](#)
 - [1926.555 - Conveyors.](#)
 - [1926 Subpart Q - Concrete and Masonry Construction](#)
 - [1926.701 - General requirements](#)
 - [1926.705 - Requirements for lift-slab construction operations.](#)
 - [1926.702 - Requirements for equipment and tools.](#)
 - [1926.703 - Requirements for cast-in-place Concrete.](#)
 - [1926.703 App - General Requirements for Formwork](#)
 - [1926.704 - Requirements for precast concrete.](#)
 - [1926 Subpart R Steel Erection](#)
 - [1926.759 - Falling object protection.](#)
 - [1926.761 - Training.](#)
 - [1926 Subpart T - Demolition](#)
 - [1926.850 - Preparatory operations.](#)
 - [1926.852 - Chutes.](#)
 - [1926.853 - Removal of materials through floor openings.](#)
 - [1926.854 - Removal of walls, masonry sections, and chimneys.](#)
 - [1926.855 - Manual removal of floors.](#)
 - [1926.856 - Removal of walls, floors, and material with equipment.](#)
 - [1926.857 - Storage.](#)
 - [1926.858 - Removal of steel construction.](#)
 - [1926.859 - Mechanical demolition.](#)

- [1926.860 - Selective demolition by explosives.](#)
 - [1926 Subpart W - Rollover Protective Structures; Overhead Protection](#)
 - [1926.1003 - Overhead protection for operators of agricultural and industrial tractors used in construction.](#)
 - [1926 Subpart CC - Cranes and Derricks in Construction](#)
 - [1926.1424 - Work area control.](#)
 - [1926.1425 - Keeping clear of the load.](#)
 - [1926.1426 - Free fall and controlled load lowering.](#)
 - [1926.1427 - Operator training, certification, and evaluation.](#)
 - [1926.1428 - Signal person qualifications.](#)
 - [1926.1429 - Qualifications of maintenance & repair employees.](#)
 - [1926.1430 - Training.](#)
 - [1926.1431 - Hoisting personnel.](#)
 - [1926.1441 - Equipment with a rated hoisting/lifting capacity of 2,000 pounds or less.](#)
- American National Standards Institute (ANSI):
 - [ANSI/International Safety Equipment Association \(ISEA\) 121-2018 - Dropped Object Prevention](#)
 - [ANSI/ISEA Z89.1-2014 \(R2019\) – Head Protection](#)

Nudges to Improve Planning

- Job Site Posters: *see Training Resources above*
- Text Messages

Target Audience	Texts: General	Texts: Specific
Supervisors and Workers	<ul style="list-style-type: none"> • Stop the Drop: Keep you and your co-workers safe by planning to prevent dropped tools. • Stop the Drop: Follow the plan to prevent struck-by incidents to keep you and your co-workers safe. • Stop the Drop: Follow the plan to secure tools and materials to prevent them from falling on people below. 	<ul style="list-style-type: none"> • Planning to prevent struck-by incidents from dropped tools should include training workers on the hazards and how to prevent an incident. (Supervisors) • When working at heights, plan to prevent tools and materials from falling on people below by barricading fall zones and using measures such as tethers, toeboards, and debris nets.

- Email Messages

Example:

Dear [],

Safety is everyone’s responsibility – especially those who supervise others. If your employees are working at heights, it’s important to remember that tools, equipment, materials, and other objects that are dropped or fall can cause serious injury to coworkers or others below. Create a plan before work begins using CPWR’s Struck-by Planning Program and communicate it with your workers to prevent injuries caused by dropped objects. As part of your plan, you should:

- Have workers secure tools and materials to prevent them from falling. Small tools (less than 5lbs) can be tethered to workers.
- Use measures such as toeboards, screens, guardrails, debris nets, catch platforms, or canopies to prevent, catch, or deflect falling objects.
- Barricade hazard areas and post warning signs.

- Wear a helmet or hard hat and routinely inspect it for damage.
- Inspect all tools and equipment before use. Hand tools with loose or cracked handles should not be used.
- Keep materials away from floor openings or leading edges.
- Train workers on hazards and ways to prevent an incident.

Please reach out if you have any safety concerns or questions. Stay safe!

[Name]

- Stickers



CPWR has a simple “Sphere of Safety” hardhat sticker design that can be downloaded and printed. We also have limited supplies available for free, which can be ordered by contacting Grace Barlet at gbarlet@cpwr.com.

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