

Portable Ladder Safety

Incidents reported to the Houston OSHA Area Offices with ladders involved serious injuries and in some cases death. From FY 2009 through FY 2015 there were 15 fatalities involving ladders*. **In FY 2016 there were three fatalities and 22 reported ladder incidents resulting in hospitalization with injuries ranging from internal bleeding in the brain to fractured bones.** Ladders are important to help workers access elevated heights, however, they present a serious fall hazard when used incorrectly.



Ladder Related Fatalities in Fiscal Year 2016

- Employee coming down from an attic using the attic stairwell ladder when he slipped and fell. The employee hit his head on the tile floor in the laundry room and later died at the local hospital.
- Employee ascended a ladder to bring his boss some equipment on the roof and while descending fell off the ladder and died.
- Employee died after falling off a ladder while attempting to install a rain gutter when he came into contact with an electrical power line.

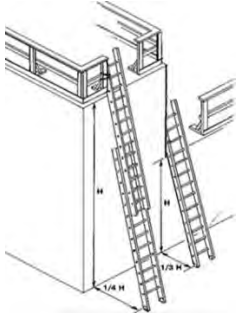
Ladder Related Incident Reports FY 16

- Employee went to check wires on a pull box and touched live wires. He got shocked and fell **4'** off the ladder landing on his back and hit his head on the ground which caused internal bleeding on his brain.
- Worker lost his footing while descending a fixed cage ladder and fell **10'** fracturing both ankles.
- Employee coming down a ladder slipped on the bottom rung and fell fracturing his hip
- Employee installing a wood beam as part of the framing for a garage of a new home. While carrying a beam up the A-frame ladder he lost his balance and fell and the beam fell on top of him resulting in head injuries and right eye came out of its socket.
- Painter got down off of the ladder to move it and pulled the ladder towards himself and the ladder hit his right shin causing contusions
- Employee descending ladder lost his footing and fell **12'-15'**. Broken left wrist, right dislocated shoulder, and facial fractures on the right side of face and jaw.
- Employee standing **10'** high on a 16' A-frame ladder replacing an insulated glass unit a home when a gust of wind caused him to lose his balance and fall breaking two bones in his left leg.
- Employee placed a ladder on communication strands and climbed the ladder. Strand broke and he fell breaking three vertebra in his back.
- Technician on a ladder inside of a trailer correcting the door tension. He released the tension the door knocked him off of the ladder fractured ribs.
- Worker on an 18' extension ladder working on a railcar. While descending the ladder it slid down and he struck the floor suffering bilateral heel fractures and a compression fracture of a vertebra.

Ladder Related Incident Reports FY 16 Cont...

- Employee was injured when the extension ladder he was using slipped and came loose from a rope connection and fell. The employee fell approximately **9'** to the next level and suffered three fracture ribs and a dislocated shoulder.
- The employee had been hanging pipe and while descending a step ladder fell approximately **10'** to the ground losing consciousness and suffering contusions to head and face.
- Installing home electrical fixture under construction electrician fell off **16'** fiberglass A-frame ladder to concrete floor below hitting his head on the floor.
- Employee tightening bolts on a fire sprinkler system when a gasket ruptured causing water under pressure to flow out striking the employee and causing him to fall from his ladder **16.5'** to the concrete floor below. Bone fractures of left eye, shoulder, rib and sacrum bone, collapsed left lung and loss consciousness.
- An employee was climbing down a ladder and blacked out falling to the ground **8'**. The employee was diagnosed with heat exhaustion and also broke his shoulder from falling from the ladder.
- The injured worker descending ladder felt faint and fell from the bottom second ladder hitting his head.
- Injured employee had attached braces to a tank on a ladder, he started to climb down and fell **7-8'** to the ground. Fractured skull and fractured ribs
- Employee climbed up a ladder to cover a trailer with a tarp. When employee was climbing back down he lost his balance and fell approximately **4'** and suffered a fractured hip.
- Employee climbing down a ladder with tool in his hand when his right foot slipped and he fell from the 3rd step (**2'-3'**) from the bottom of the ladder breaking his right hip.
- Injured worker screwing fasteners into duct work on a ladder when he lost his balance and fell off of the ladder at approximately 11 feet. Cracked rib and broken right heel of foot.
- Worker changing a light bulb 20' up on an extension ladder when he fell onto the cement floor suffering a broken shoulder and possible brain injuries.

Common Ladder Safety Rules



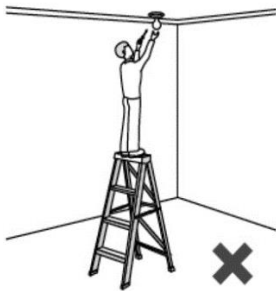
Maintain a $\frac{1}{4}$ Ratio



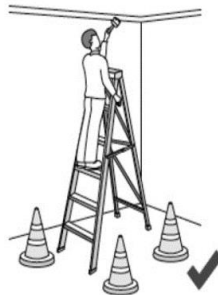
Don't Carry Tools and Equipment While Climbing



Maintain 3 Points of Contact



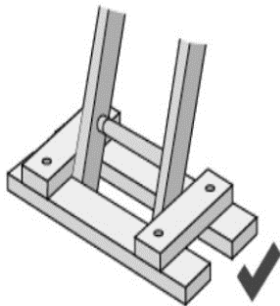
Don't Use the top Step of the Ladder



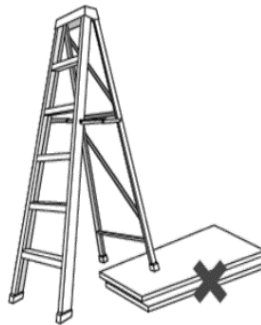
Prevent Passersby From Going under the Ladder



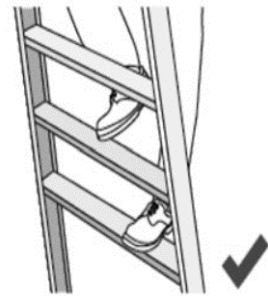
Don't Use Damaged Ladders. Inspect for Damage



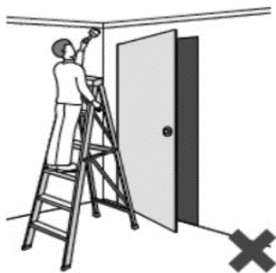
Secure the Base of the Ladder



Don't Place on Uneven Unstable Ground



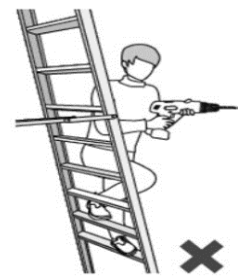
Wear Proper Footwear



Don't Use Near Doorways. Lock the Door if Necessary. Beware locking exit routes!



Secure the Top of the Ladder



Don't Lean Away from the Ladder. Stay Centered Between the Rails

There are many resources available on ladder safety that can be used for tool box talks, ladder safety training (e.g. 1926.1060 and 1910.23), safety stand downs, and group discussions. An effective ladder safety program has safety procedures, training on those safety procedures, inspection that the procedures are being followed, and disciplinary action when they are not. Also consider a Job Safety Analysis to ensure the proper ladder is provided. A worker provided a 6' ladder when an 8' ladder is needed to access the work sets up an unsafe condition and presents a potential fall hazard.



Ladder Safety Resources**

OSHA FactSheets

- Ladder Safety QuickCard™
 - Ladder Safety: Falling Off Ladders Can Kill: Use Them Safely
 - Ladder Safety: Reducing Falls in Construction: Safe Use of Extension Ladders Fact Sheet
 - Ladder Safety: Reducing Falls in Construction: Safe Use of Job-made Wooden Ladders Fact Sheet
 - Ladder Safety: Reducing Falls in Construction: Safe Use of Stepladders Fact Sheet
- <https://www.osha.gov/pls/publications/publication.html>



OSHA Alliance Products

- Choosing the Right Ladder
 - Inspect Ladders Carefully!
 - Do's and Don'ts of Using a Ladder
 - Set Up and Use of a Ladder
 - Extension Ladder Safety English
 - Using a Stepladder Safely
- https://www.osha.gov/dcsp/alliances/alliance_products.html#Ladder



OSHA Fall Prevention Campaign Webpage

- Ladders
- <https://www.osha.gov/stopfalls/trainingresources.html>



NIOSH

- NIOSH Ladder Safety App
<https://www.cdc.gov/niosh/topics/falls/mobileapp.html>
- A Guide to Training Site Supervisors
<http://stopconstructionfalls.com/wp-content/uploads/2012/03/Preventing-Falls-from-Ladders-in-Construction-A-Guide-to-Training-Site-Supervisors.pdf>



American Ladder Institute's Ladder Safety Training

- Ladder safety training (registration required)
<https://www.laddersafetytraining.org/>



Texas OSHCON

- Ladder Safety - Take 5 for Safety
<http://www.tdi.texas.gov/wc/safety/videoresources/index.html>



*Disclaimer: Fatalities, catastrophes, serious incident reports are generated using various sorting criteria. Houston specific data is edited to determine a count of fatalities/catastrophes or Serious Incident Reports (SIRs) under OSHA jurisdiction and may change over time as records are updated. Narratives are generally based on the first report of the incident and are rewritten and edited for brevity and/or readability and may not reflect the final results of an investigation. The incidents are a snap shot in time and may not be an exact count and are provided for accident prevention purposes, trending, and educational purposes and is not intended to be a statistical study or evaluation

**These links were compiled by an OSHA Compliance Assistance Specialist and is intended to assist employers, workers, and others as they strive to improve workplace health and safety. While we attempt to thoroughly address specific topics [or hazards], it is not possible to include discussion of everything necessary to ensure a healthy and safe working environment in a presentation of this nature. Thus, this information must be understood as a tool for addressing workplace hazards, rather than an exhaustive statement of an employer's legal obligations, which are defined by statute, regulations, and standards. Likewise, to the extent that this information references practices or procedures that may enhance health or safety, but which are not required by a statute, regulation, or standard, it cannot, and does not, create additional legal obligations. Finally, over time, OSHA may modify rules and interpretations in light of new technology, information, or circumstances; to keep apprised of such developments, or to review information on a wide range of occupational safety and health topics, you can visit OSHA's website at www.osha.gov.

If you're interested in a presentation to your group or association, have questions on the materials, or would like to be notified of free workshops conducted periodically by the Houston North OSHA Office contact Jim Shelton, CAS, at shelton.james@dol.gov