



Prevent Construction Falls from Roofs, Ladders, and Scaffolds

Falls are the leading cause of construction worker deaths on the job.¹ This fact sheet gives recommendations, reports, and resources to help employers, safety professionals, and workers prevent fall injuries and deaths from roofs, ladders, and scaffolds.



Each year in the U.S. more than **310** construction workers are killed and more than **10,350** are seriously injured by falls from heights.^{1,2}

Roofs



124 deaths in 2016²

[Recommendations](#)
[FACE Reports](#)
[Resources](#)

Ladders



104 deaths in 2016²

[Recommendations](#)
[FACE Reports](#)
[Resources](#)

Scaffolds



60 deaths in 2016²

[Recommendations](#)
[FACE Reports](#)
[Resources](#)

¹ US Department of Labor, Bureau of Labor Statistics Occupational Injuries/Illnesses and Fatal Injuries Profiles-Case and Demographic Numbers. Date accessed: November 14, 2018. <https://data.bls.gov/gqt/InitialPage>

² US Department of Labor, Bureau of Labor Statistics Occupational Injuries/Illnesses and Fatal Injuries Profiles-Fatal Injuries Numbers. Date accessed: April 6, 2018. <https://data.bls.gov/gqt/InitialPage>

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National Institute for Occupational Safety and Health





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Roof Falls in Construction



81% of deaths from roofs occur in the construction industry²

Some factors that contribute to falls from roofs:

- Worker inexperience or lack of training
- No fall protection program or a personal fall arrest system
- No personal fall protection used
- Incorrect fall arrest system anchorage method
- Lack of fall arrest system lanyard connection point
- Incorrect working length of fall arrest system lifeline
- Working alone when working at elevations
- Working during inclement weather (e.g., wind, rain)

Read some of our FACE reports on roof falls:

[Roofer Dies After Gust Of Wind Knocks Him and Co-Worker Off Roof – Kentucky \(Report #13KY059\)](#)

A roofer and a co-worker arrived at the construction site to put a roof on a building. The roofer and co-worker climbed an extension ladder to get on top of the roof to determine where they were going to place their anchors to tie off. While reviewing the structure, a gust of wind caused both workers to fall off the roof, and one roofer died.

[Hispanic Worker Falls From Residential Roof – North Carolina \(Report NIOSH FACE #2012-02\)](#)

A laborer fell from a residential roof to a concrete driveway and died from his injuries. The laborer was replacing shingles on a roof. While working on the roof, he was wearing his fall protection incorrectly.

Some recommendations to prevent falls from roofs:

- Implement a fall protection program
- Wear fall protection, and use correctly
- Get training on fall protection
- Train and assign a person to inspect fall protection equipment before each use
- Use correct anchorage for fall arrest systems
- Extend the side rails of the ladder 3 feet above the roof edge
- Use a buddy system when working at heights
- Monitor weather conditions

For more reports on falls from roofs, visit:

² US Department of Labor, Bureau of Labor Statistics Occupational Injuries/Illnesses and Fatal Injuries Profiles-Fatal Injuries Numbers. Date accessed: April 6, 2018. <https://data.bls.gov/gqt/InitialPage>

www.cdc.gov/niosh/face/



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Ladder Falls in Construction



57% of deaths from ladders occur in the construction industry²

Some factors that contribute to ladder falls:

- Worker inexperience or lack of training
- Improper ladder selection
- Improper use of a ladder
- Ladder overloading
- Ladder not set up on a flat, level surface or at a proper angle
- Not extending the ladder above the roof line
- Lack of safe access

Read some of our FACE reports on ladder falls:

[Carpenter Injured After Falling From An Extension Ladder \(Report #15MA037\)](#)

A carpenter was killed after falling from an extension ladder. The carpenter and a co-worker were onsite to do gutter work on a house. The carpenter was climbing an extension ladder that was set up on stone pavers to access the roof. While climbing the ladder, he fell when the ladder slipped out from under him. The carpenter died 16 days later.

[Hispanic Worker Dies After Fall From Step Ladder While Cleaning Windows – North Carolina \(Report NIOSH FACE #2009-01\)](#)

A worker died after a fall from an 8-foot step ladder. A bucket partially filled with a cleaning solution was tied with a rag to the top of the ladder. The worker was on a ladder cleaning windows. While cleaning, he did not maintain 3 points of contact with the ladder and he fell and hit his head.

Some recommendations to prevent ladder falls:

- Get training on how to properly use ladders
- Choose the right ladder for the job
- Inspect ladders regularly and ensure they are in good working order
- Use ladder on flat and level ground
- Secure and position the ladder in the safest location possible
- Extend the side rails of the ladder 3 feet above the roof edge
- Face the ladder at all times when climbing
- Maintain 3 points of contact with the ladder at all times
- Don't overload a ladder
- Use the [NIOSH Ladder Safety App](#) to set proper ladder angle

For more reports on ladder falls, visit:

² US Department of Labor, Bureau of Labor Statistics Occupational Injuries/Illnesses and Fatal Injuries Profiles-Fatal Injuries Numbers. Date accessed: April 6, 2018. <https://data.bls.gov/gqt/InitialPage>

www.cdc.gov/niosh/face/



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Scaffold Falls in Construction



86% of deaths from scaffolds occur in the construction industry²

Some factors that contribute to scaffold falls:

- No fall protection program
- Worker inexperience or lack of training
- Workers not trained to identify, understand, and control fall hazards
- Lack of fall protection or fall arrest system
- Unstable work surface
- Improper scaffold construction, selection, or use
- No use of guardrails
- Wheels are unlocked before mounting the work platform
- Working alone from heights during off hours

Read some of our FACE reports on scaffold falls:

[Municipal Lead Custodian Dies In Fall From Mobile Scaffolding \(Report #11MA008\)](#)

A municipal custodian died while painting the inside of a school lobby. The custodian went to the school alone to finish painting. The custodian was on a mobile scaffold that was improperly set up, and he fell onto the lobby floor.

[Construction Worker Died After Falling 20-25 Feet From a Pump-jack Scaffold \(Report #15OR12\)](#)

An owner of a residential siding company sustained injuries when he fell from a pump-jack scaffold platform onto a concrete slab. While working on the scaffold, the owner was not wearing fall protection. The owner died the following day.

Some recommendations to prevent scaffold falls:

- Train and assign a person to supervise scaffold setup
- Place on stable ground/surface
- Set up scaffolds per the manufacturer guidelines and Occupational Safety and Health Administration standards
- Use guardrails or a fall arrest system when more than 10 feet above a lower level
- Inspect scaffolds and scaffold parts before each use
- Ensure scaffolds are fully planked
- Secure scaffold (e.g., lock wheels on mobile scaffolds)
- Provide proper scaffold access

For more reports on scaffold falls, visit:

www.cdc.gov/niosh/face/

² US Department of Labor, Bureau of Labor Statistics Occupational Injuries/Illnesses and Fatal Injuries Profiles-Fatal Injuries Numbers. Date accessed: April 6, 2018. <https://data.bls.gov/gqt/InitialPage>



 Use these resources to prevent falls and keep construction workers safe on the job.

Construction Falls Resources

NIOSH Construction Program

<https://www.cdc.gov/niosh/programs/construction/>

This website provides program goals and resources.

NIOSH FACE Program

<https://www.cdc.gov/niosh/face/>

This website provides NIOSH FACE and State FACE reports.

NIOSH Falls in the Workplace

<https://www.cdc.gov/niosh/topics/falls/>

This website provides information about projects and resources available to prevent work-related falls.

NIOSH FACE Program: A Five Year Look-Back

<https://www.youtube.com/watch?v=OONUcRmoaQQ>

This video highlights the NIOSH FACE Program and the role the FACE states have in promoting the National Campaign to Prevent Falls in Construction.

Stop Construction Falls Campaign Websites and Materials

Campaign Websites

<https://stopconstructionfalls.com/>

<https://www.cdc.gov/niosh/construction/stopfalls.html>

<https://www.osha.gov/stopfalls/>

Get information to prevent falls and participate in the National Safety Stand-Down event.

Fall Prevention Fact Sheet

<https://www.cdc.gov/niosh/docs/2012-142/pdfs/2012-142.pdf>

This fact sheet provides information to PLAN ahead to get the job done safely. PROVIDE the right equipment. TRAIN everyone to use the equipment safely.

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Ladder Resources

NIOSH Ladder Safety App

<https://www.cdc.gov/niosh/topics/falls/mobileapp.html>

Download and use the free NIOSH Ladder Safety app to prevent extension and step-ladder fall injuries and deaths.

Ladder Safety: There's an App for That

<http://blogs.cdc.gov/niosh-science-blog/2013/08/27/ladder-safety/>

This NIOSH Science Blog shares information about development of the app and its use among workers.

About the FACE Program

The National Institute for Occupational Safety and Health's (NIOSH) Fatality Assessment and Control Evaluation (FACE) Program, along with its State FACE partners, study fatal workplace injuries and prepare reports with recommendations to prevent similar deaths.

This national research program aims to prevent job-related injuries and deaths by:

- Investigating select deaths
- Identifying hazards
- Developing workplace prevention recommendations
- Sharing recommendations with employers, safety professionals, and workers

See our [Fatality Assessment and Control Evaluation \(FACE\) Program flyer](#) for more information.