Toolbox Talk Training: Ladder Safety – Portable Extension Ladders: Safety DOs and DON'Ts

Falls from portable extension ladders can cause serious injuries, and many can be prevented. This free portable extension ladder toolbox talk reviews practical steps for inspecting, setting up, climbing and using an extension ladder, with references to OSHA ladder rules (29 CFR 1910.23 for general industry and 1926.1053 for construction). Always check your employer's rules and the ladder manufacturer's instructions.

This extension ladder safety toolbox talk covers practices workers should follow before, during, and after using a portable extension ladder. Understanding these practices helps reduce fall hazards and protect everyone working at height.

Important Safety Reminder: Falls from ladders can cause serious injuries. Select, inspect, set up, and use the ladder as the manufacturer and OSHA require.

This talk summarizes OSHA ladder requirements. Confirm all requirements with your employer, the manufacturer's instructions, and OSHA.

Extension ladder setup affects stability. For nonself-supporting ladders such as extension ladders used in construction, OSHA sets the working angle at one-quarter of the working length of the ladder, the 4 to 1 rule (29 CFR 1926.1053(b)(5)(i)). The portable ladder paragraphs of the general industry rule (29 CFR 1910.23) do not state this 1:4 formula, so follow the manufacturer's instructions.

Correct Extension Ladder Setup

- On construction work, place the base about 1 foot away from the support for every 4 feet of working length, measured along the ladder from the base to the point where it rests against the support. This 1:4 rule is a construction requirement (29 CFR 1926.1053(b)(5)(i)); in general industry follow the manufacturer's instructions.
- Set both side rails so they rest evenly on the supporting surface, unless the ladder has a single support attachment.
- When the ladder is used to reach a roof, platform, or other landing, extend the side rails at least 3 feet above the landing surface (1910.23(c)(11); 1926.1053(b)(1)). In construction, when such an extension is not possible because of the ladder's length, the ladder must instead be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, must be provided to assist employees in mounting and dismounting the ladder. In no case may the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support (29 CFR 1926.1053(b)(1)).
- Place the ladder on a stable, level surface (1910.23(c)(4); 1926.1053(b)(6)).

01. Inspect the ladder before each use

Check for visible defects such as cracked or bent side rails, missing or damaged rungs, loose hardware, broken lock mechanisms, and worn or missing feet. In general industry, a ladder with structural or other defects must be immediately tagged "Dangerous: Do Not Use" or with similar language and removed from service until repaired (1910.23(b)(10)). In construction, a portable ladder with structural defects must be immediately marked as defective or tagged "Do Not Use" or similar language and withdrawn from service until repaired (1926.1053(b)(16)). In construction, repairs must restore the ladder to its original design (1926.1053(b)(18)).

02. Set the ladder on a stable, level surface

Place the ladder on a stable, level surface (1910.23(c)(4); 1926.1053(b)(6)). In general industry, a ladder on a slippery surface must be secured and stabilized (1910.23(c)(9)). In construction, ladders must not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement (1926.1053(b)(7)). In general industry, ladders must not be placed on boxes, barrels, or other unstable bases to obtain additional height (1910.23(c)(13)).

03. Protect the ladder in high-traffic areas

When a ladder is placed in a doorway, passageway, walkway, or driveway, secure it so it cannot be displaced, or use a barricade to keep traffic away (1910.23(c)(7); 1926.1053(b)(8)). Keep the area around the top and bottom clear (1926.1053(b)(9)).

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04. Support both side rails fully

Position the ladder so both side rails are supported at the top (1910.23(c)(10); 1926.1053(b)(10)). Use a single support attachment only if the ladder is made for it.

05. Set the ladder angle

For nonself-supporting ladders on construction work, position the base about one foot out for every four feet of working length, measured from the base to the point of support (1926.1053(b)(5)(i)). In general industry, follow the manufacturer's instructions.

06. Extend the ladder at least three feet above the landing

When the ladder is used to reach an upper landing, the side rails must extend at least 3 feet above the landing surface (1910.23(c)(11); 1926.1053(b)(1)). In construction, when such an extension is not possible because of the ladder's length, the ladder must instead be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, must be provided to assist employees in mounting and dismounting the ladder. In no case may the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support (29 CFR 1926.1053(b)(1)).

07. Maintain electrical clearance

Look up before you set up. Do not place a ladder where it, you, or your materials can touch overhead power lines or energized equipment. In general industry, an unqualified person working in an elevated position near overhead lines must stay so that the person and the longest conductive object they may contact cannot come closer to any unguarded, energized overhead line than 10 feet for voltages to ground of 50 kV or below, and 10 feet plus 4 inches for every 10 kV over 50 kV for voltages over 50 kV (29 CFR 1910.333(c)(3)(i)). Construction work has its own requirements, including 29 CFR 1926.416. In construction, where a ladder could contact exposed energized parts, OSHA requires ladders with nonconductive side rails (1926.1053(b)(12)). Ask your supervisor for the required distance for your site.

08. Maintain a firm grip on every rung or rail

On construction work, face the ladder when climbing up or down and keep at least one hand on the ladder (29 CFR 1926.1053(b)(20)-(21)). Follow the manufacturer's instructions and your employer's rules.

09. Follow the manufacturer and employer rules when working from the ladder

Follow the manufacturer's instructions and your employer's rules when working from a ladder. A ladder must not be moved, shifted, or extended while occupied (1926.1053(b)(11)).

Do not use a ladder for unintended purposes. Use ladders only for the purposes for which they were designed (1910.23(b)(8); 1926.1053(b)(4)).

- Do not use a ladder with conductive side rails where it could touch exposed energized parts. In construction, OSHA requires nonconductive side rails where the ladder could contact exposed energized parts (1926.1053(b)(12)).
- Do not carry loads that cause you to lose balance while climbing. OSHA says no employee may carry any object or load that could cause the employee to lose balance and fall while climbing the ladder (1910.23(b)(13); 1926.1053(b)(22)).
- Do not move, shift, or extend a ladder while someone is on it. In construction, ladders must not be moved, shifted, or extended while occupied (1926.1053(b)(11)).
- Do not exceed the maximum intended load. This includes the worker plus tools, equipment, and materials being carried (1910.23(c)(3) and its Note). In construction, do not exceed the manufacturer's rated capacity (1926.1053(b)(3)).

Before leaving today's safety meeting: Please sign the attendance record (sign-in form) on the back of the printed handout. The form records who attended this portable extension ladder talk. Signatures record attendance only, not certification or completion of required training. Keep the completed record with your site's training files.

General safety information only. This material does not replace required training, a site-specific hazard assessment, or professional safety advice. Before using it, verify current requirements with OSHA (osha.gov) and your employer. Follow applicable regulations, equipment manufacturers' instructions, and your employer's safety procedures.

Sources: OSHA 29 CFR 1910.23 (b)(8), (b)(10), (b)(13), (c)(3), (c)(4), (c)(7), (c)(9), (c)(10), (c)(11), (c)(13); 1926.1053 (b)(1), (b)(3), (b)(4), (b)(5)(i), (b)(6), (b)(7), (b)(8), (b)(9), (b)(10), (b)(11), (b)(12), (b)(16), (b)(18), (b)(20)-(21), (b)(22); 1910.333 (c)(3)(i); 1926.416. Cited paragraphs only. Discussion aid.

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TOOLBOX TALK TRAINING SIGN-IN FORM

Topic discussed: Ladder Safety - Portable Extension Ladders: Safety DOs and DON'Ts

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Discussion led by:_____

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