

PLANNING A MULTI-LAYERED APPROACH TO FALL PREVENTION AND PROTECTION



A recent CPWR survey identified **insufficient or ineffective planning as the number one underlying cause of falls from heights**. A lack of preparation can lead to a reliance on PPE as the only protective measure, but the survey also found that when employers didn't do any planning, **the odds of workers using their fall protection equipment were 71% lower**.¹

The table below is based on the [hierarchy of controls](#). The top of the table represents approaches that result in the most risk reduction and the bottom represents approaches that result in the least risk reduction. Contractors, owners, designers, and others should use this chart, beginning at the top and incorporating controls as feasible to prevent falls.^{2,3}

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|---------------------------------------|--|--|---|
| Eliminate or minimize the fall hazard | Elimination | Plan, design, install, or move equipment to eliminate or minimize hazards associated with working at heights. Use Prevention Through Design measures. Inspect and maintain equipment regularly to prevent failure. | <ol style="list-style-type: none"> 1. Adopt a building design with a single level at grade rather than multiple levels at elevations. 2. Use parapet walls or permanent guardrails at least 39 inches high. |
| | Substitution | Change the method of work to reduce the risk of falling. | <ol style="list-style-type: none"> 1. Move equipment or work to a lower height. 2. Use safer equipment, for example replace ladders with aerial lifts, |
| Prevent the fall | Passive Engineering Controls | Use passive fall prevention. | Install temporary guardrails or barriers, including around skylights and holes. |
| | Active Engineering Controls | Use active fall prevention. | Use fall restraint systems that secure workers via an anchor point, connector, lanyard, and harness to prevent the worker from reaching the fall hazard. |
| | Administrative Controls | Establish and use safe operating procedures when working at heights and provide comprehensive training in a language understood by workers. | <ol style="list-style-type: none"> 1. Make sure a competent/qualified person is present on the job site. 2. Train workers for the specific task and unique fall hazards faced. |
| Minimize the impact of the fall | Personal Protective Equipment & Other Protective Measures | <p>Supply and use personal protective equipment (PPE) such as a personal fall arrest system.²</p> <p>Plan ahead to reduce the risk of injury or death if a fall does occur.</p> | <ol style="list-style-type: none"> 1. Make sure fall harnesses fit workers properly. 2. Plan ahead with input from the competent or qualified person to ensure certified anchor points, lanyard type and length, etc. 3. Provide rescue equipment and training 4. Make sure the fall clearance is sufficient to avoid both swing hazards and the ground or nearest obstruction below. 5. Select PPE that includes trauma straps or loops or a personal rope ladder to avoid suspension trauma. 6. Provide hard helmets with chinstraps. 7. Have a trained first aider on site when possible. |



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¹CPWR (2022). "Underlying Causes of Falls from Heights." https://www.cpwr.com/wp-content/uploads/RR-falls_experience_survey.pdf
² Adapted from NIOSH's hierarchy of hazard controls for falls. NIOSH (2021). "Slip, Trip, and Fall Prevention for Mining." <https://www.cdc.gov/niosh/mining/content/STFprevention.html>
³ Adapted from OSHA 10-Hour Outreach Training. OSHA (2017). "OSHA 10-Hour Outreach Training General Industry." <https://www.osha.gov/training/outreach/general-industry/presentations>

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