National Renewable Energy Laboratory

# CONSTRUCTION FALL HAZARD ANALYSIS

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| COMPETENT PERSON INSTRUCTIONS | | |
| This Construction Fall Hazard Analysis form, or an NREL environment, safety, and health point of contact-accepted equivalent, must be completed by the construction subcontractor fall protection competent person (CP) prior to allowing workers to be exposed to specific fall hazards. | | |
| At a minimum a Construction Fall Hazard Analysis must be completed when: | | |
| 1. An authorized worker is using an active fall protection system (arrest, restraint, or travel restriction) | | |
| **Exceptions:** | | |
| * Work performed from aerial lifts, scissor lifts, mobile vertical lifts, or elevating (work) platforms do not require a Construction Fall Hazard Analysis provided (1) the integrity of the guardrail system is maintained and not compromised, (2) workers maintain their footing on the platform floor, and (3) workers do not transition in or out of an elevated work platform or basket. | | |
| * Ascending or descending a fixed ladder more than 20 feet in height while using an installed ladder safety device or personal fall-arrest system (PFAS) system does not require a Construction Fall Hazard Analysis. | | |
| 1. An authorized worker is using either a fixed ladder or a portable ladder in an application that does not meet the (fixed or portable) ladder general requirements and exceptions (see below). | | |
| Maintain the completed form in the work area for the duration of the activity and submit a copy with the project closeout documents. The Construction Fall Hazard Analysis must be site- and activity-specific and may not exceed 30 days in duration. Complete the analysis at least weekly and review daily with the affected workers prior to the start of work for each definable activity. Authorized issuers are limited to NREL-accepted CPs. | | |
| **LADDER EXCEPTIONS:** | | |
| A Construction Fall Hazard Analysis is not required for the use of fixed ladders under these provisions: | | |
| * The authorized worker is only ascending or descending the ladder | | |
| * The authorized worker maintains three points of contact with the ladder | | |
| * The authorized worker's body is positioned between the rails | | |
| * The ladder is not located next to an opening or edge, thus exposing the worker to a fall hazard greater than the distance to the base of the ladder, and the worker's elevated position does not expose them to other hazards including impalement, mechanical, electrical, chemical, or environmental. | | |
| A Construction Fall Hazard Analysis is not required for the use of portable ladders under these provisions: | | |
| * Portable ladders must be set up and used in compliance with PROC 600-31 [Fall Protection](https://ppf.thesource.nrel.gov/procedure/600-31), Appendix C, Ladder Safety Requirements, and manufacturer requirements. Additionally, the portable ladder must be a minimum Type I (250 pounds) Heavy Duty classification. The capacity rating must not be exceeded. Light duty, medium duty, and wooden ladders are prohibited. | | |
| * The portable ladder is 20 feet or less in working length and the worker maintains three points of contact (when ascending or descending) with their body position centered between the ladder rails. | | |
| * The ladder is not positioned next to an opening or edge, thus exposing the worker to a fall hazard greater than the distance to the base of the ladder, and the worker's elevated position does not expose them to other hazards including impalement, mechanical, electrical, chemical, or environmental. | | |
| * Extension ladders must be tied or secured to prevent displacement | | |
| INTRODUCTION | | |
| Construction subcontractors should conduct elevated work at the lowest risk attainable by complying with the most stringent regulations and industry standards when selecting methods to eliminate or mitigate fall hazards. Refer to the fall protection hierarchy and mitigation methods provided in the [Construction Environment, Safety, and Health Manual](https://www.nrel.gov/about/assets/pdfs/construction-ehs-manual.20190513.pdf). Direct questions regarding the safe conduct of elevated work to the CP prior to starting work. | | |
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| COMPETENT PERSON EVALUATION/PROJECT INFORMATION | | |
| **Evaluation Conducted By** | **Project** | **Date Issued** |
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| **Subcontractor** | | **Subcontractor Phone** |
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| **Location of Activity** | | **End Date (30 Day Maximum)** |
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| SCOPE OF WORK/DESCRIPTION OF ACTIVITY | | |
| What tasks and work areas are associated with the hazards? Identify the equipment, materials, and processes addressed by this analysis. | | |

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| HAZARDS AND CONTROLS |
| **Hazards.** What is the fall distance/exposure to the next lower level? What is the maximum swing fall? Identify additional hazards associated with the elevated work activity and location. Examples include, but are not limited to, impalement, mechanical, electrical, chemical or environmental. |

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| **Controls.** Describe the controls that have been established to maintain a low or routine level of risk. Identified controls must remain in effect for the duration of this evaluation. |

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| If work cannot be performed as defined in this analysis, or if unexpected conditions are encountered, stop work and review with the CP. Additional hazard controls may be warranted. | | | | | | | | | | | | | | |
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| FALL HAZARD ANALYSIS CHECKLIST INSTRUCTIONS | | | | | | | | | | | | | | |
| Use this checklist in your evaluation and as the talking points in the daily briefing to identify the controls established for the elevated work. The checklist requirements must be reviewed, verified, and communicated to the workers daily prior to the start of the work activity. | | | | | | | | | | | | | | |
|  | Identify the fall hazards: | | | | | | | | | | | | | |
|  | Roof work (within 15 feet of edge) | | | | |  | Unprotected stairways | | | | |  | Portable or fixed ladders |
|  | Roof penetration or skylight (work within 15 feet of an unprotected opening | | | | |  | Wall or floor openings (work within six feet of an unprotected wall or floor opening | | | | |  | Aerial lifts, scissor lifts, and elevating aerial (work) platforms |
|  | Scaffold erection/disassembly | | | | |  | Leading edge | | | | |  | Steel erection |
|  | Other. **Describe.** | |  | | | | | | | | | | |
|  | Method of fall protection to be provided: | | | | | | | | | | | | | |
|  | Passive (guardrail or hole cover) | | | |  | | Fall restraint | | | |  | | Ladder safety device |
|  | Positioning system | | | |  | | PFAS | | | |  | | Warning lines or controlled-access zones |
| **NOTE:** A buddy (second authorized worker) is required when an authorized worker is required to use an active fall protection system. | | | | | | | | | | | | | |
|  | Fall protection equipment required (Occupational Safety and Health Administration and American National Standards Institute compliant): | | | | | | | | | | | | | |
|  | Anchorage connector | | | |  | | Full-body harness | | | |  | | Restraint lanyard |
|  | Shock-absorbing lanyard | | | |  | | Self-retracting lanyard (SRL) | | | |  | | Leading-edge SRL |
|  | Twin-leg lanyard | | | |  | | Rope grab | | | |  | | Safety net systems |
| **NOTE:** The CP must confirm system selection and compatibility. | | | | | | | | | | | | | |
|  | Identify the specific anchorage type, location(s), and connecting means. Identify the method used to determine the adequacy of anchorage: | | | | | | | | | | | | | |
|  | Manufacturer’s data or pre-engineered system | | | | | | |  | Existing engineering/design documents or certified anchorage | | | | |
|  | Evaluation by CP required for non-certified anchorages. | | | | | | |  | Evaluation by qualified person (QP) required for horizontal and vertical lifelines. | | | | |
| **Name of CP:** |  | | | | | | **Name of QP:** | |  | | |
| **Date:** |  | | | | | | **Date:** | |  | | |
|  | Identify the method of falling object protection below the elevated work: | | | | | | | | | | | | | |
|  | Guardrails/barricades | | | |  | | Snow fence or mesh | | | |  | | Toeboards |
|  | Hard hats required | | | |  | | Tool tethers or lanyards | | | |  | | Danger tape |
|  | Warning signs | | | |  | | Attendant posted | | | | | | |
|  | Other. **Describe.** | |  | | | | | | | | | | |
|  | Describe the method for prompt, safe rescue/retrieval of a fallen worker. Consider automatic rescue, self-rescue, assisted rescue, and professional rescue. Emergency response must be initiated in a fall event. A professional rescue is required for a scenario involving suspended rescuers. | | | | | | | | | | | | | |
|  | Initiate emergency response by calling x1234, using a red phone, or calling 303-384-6811. From the Flatirons Campus call 9-911, or 911 from a cell phone, and ask for Boulder County. Then call x1234 or 303-384-6811. | | | |  | | Provide suspension trauma straps (combined with rescue method) | | | |  | | Use a rescue/retrieval system (typical for permit-required confined space entry) |
|  | Use portable stairs or a portable ladder | | | |  | | Use an aerial lift, scissor lift, or aerial (work) platform | | | | | | |
|  | Use a rescue ladder | | | |  | | Use a self-rescue device | | | |  | | Use an SRL with “rescue mode” |
|  | Other. **Describe.** | |  | | | | | | | | | | |
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| SIGNATURES | | | | | | | | | | | | | | |
| The CP is responsible for implementing and monitoring the managed fall protection program. They must conduct a fall hazard survey to identify the fall hazards before authorized workers are exposed to those hazards. Additionally, the CP must identify, evaluate, and impose limits on the workplace activities to control fall hazard exposures and swing falls. By signing below, the CP acknowledges that they have fulfilled this responsibility and have communicated the requirements and instructions to the authorized workers. While the Construction Fall Hazard Analysis can be valid for 30 days, briefings with authorized workers must occur daily. | | | | | | | | | | | | | | |
| **CP and Company Name** | | | | | **Signature** | | | | | | **Date** | | | |
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| The authorized worker must adhere to the controls and instructions provided by the CP. The authorized worker must properly use, inspect, maintain, store, and care for their fall protection and systems. Additionally, they must immediately notify the CP of defects or damage to equipment and unsafe or hazardous conditions or actions that may cause injury to themself or other authorized workers. | | | | | | | | | | | | | | |
| **Authorized Worker and Company Name** | | | | | **Signature** | | | | | | **Date** | | | |
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