

Fall Protection Plan for Fortress Roofing: Residential Construction Projects

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I. Statement of Company Policy

Fortress Roofing is dedicated to the protection of its employees from on-the-job injuries. All employees of Fortress Roofing have the responsibility to work safely on the job. The purpose of the plan is to supplement our existing safety and health program and to ensure that every employee who works for Fortress Roofing recognizes workplace fall hazards and takes the appropriate measures to address those hazards.

This Fall Protection Plan addresses the use of conventional fall protection at a number of areas on the project, as well as identifies specific activities that require non-conventional means of fall protection. During the construction of residential buildings under 48 feet in total height with a fall distance from the lowest level of 25 ft or less, it is sometimes infeasible or it creates a greater hazard to use conventional fall protection systems at specific areas or for specific tasks. The areas or tasks may include, but are not limited to:

- a. Installation of floor sheathing and joists;
- b. Roof sheathing operations; and
- c. Final roof installation.

In these cases, conventional fall protection systems may not be the safest choice for builders. This plan is designed to enable employers and employees to recognize the fall hazards associated with this job and to establish the safest procedures that are to be followed in order to prevent falls to lower levels or through holes and openings in walking/working surfaces.

Each employee will be trained in these procedures and will strictly adhere to them except when doing so would expose the employee to a greater hazard. If, in the employee's opinion, this is the case, the employee is to notify his supervisor of their concern and have the concern addressed before proceeding. It is the responsibility of the foreman, the superintendent and the safety consultant to implement this Fall Protection Plan. Continual observational safety checks of work operations and the enforcement of the safety policy and procedures shall be regularly enforced. The crew supervisor or foreman is responsible for correcting any unsafe practices or conditions immediately.

It is the responsibility of the employer to ensure that all employees understand and adhere to the procedures of this plan and to follow the instructions of the crew supervisor. It is also the responsibility of the employee to bring to management's attention any unsafe or hazardous conditions or practices that may cause injury to either themselves or any other employees. Fortress Roofing management must approve any changes to the Fall Protection Plan.

II. Fall Protection Systems To Be Used

Installation of roof sheathing, roof underlayment and final roof installation will be conducted by employees who are specifically trained to do this type of work and are trained to recognize the fall hazards. The nature of such work normally exposes the employee to the fall hazard for a short period of time. These methods of fall protection will be utilized when the slope is 8 / 12 or less and the fall distance from the lower level is 25 ft. or less. This Plan details how Fortress Roofing will address these situations. When these limits are exceeded the conventional fall protection will be utilized.

Roof Sheathing / Decking Operations

Fortress Roofing shall take the following steps to protect workers who are exposed to fall hazards while installing roof sheathing:

- To minimize the time workers must be exposed to a fall hazard, materials will be staged to allow for the quickest installation of sheathing.
- The employer shall have roof surfaces inspected for slipping hazards and shall either eliminate any such hazards or take effective measures to have workers avoid them;
- All workers will ensure that they have secure footing before they attempt to walk on the sheathing, including cleaning shoes/boots of mud or other slip hazards
- The employer shall have any damaged portions of the roof deck repaired as soon as practicable, and any holes (including skylight openings) or other areas where employees would not have safe footing shall be covered or surrounded by guardrails that comply with the requirements of 1926.502);
- Once roof sheathing installation begins, workers not involved in that activity shall not stand or walk below or adjacent to the roof opening or exterior walls in any area where they could be struck by falling objects;
- The competent person shall determine the limits of this area, which shall be clearly communicated to workers prior to placement of the first piece of roof sheathing;
- The competent person may order work on the roof to be suspended for brief periods as necessary to allow other workers to pass through such areas when this would not create a greater hazard;
- Only qualified workers shall install roof sheathing;
- The bottom row of roof sheathing may be installed by workers standing in truss webs;
- During roofing installation, on roofs where the slope is 4 in 12 or less, or where tile or metal roofing is being installed, the slope is 8 in 12 or less, Fortress Roofing may use a controlled access zone or safety monitoring system (please see below for additional information) in lieu of other methods of fall protection. When these methods are not used roof side guards (roof brackets) will be used.
- On roofs less than or equal to 4 in 12 no slide guards shall be used.
- On roofs with slopes greater than 4 in 12 up to and including 6 in 12, eave slide guards shall be installed
- On roofs with slopes greater than 6 in 12 up to and including 8 in 12, eave slide guards shall be installed and additional slide guards shall be installed below the work area at intervals not to exceed 8 feet.
- For roofs with pitches in excess of 8 / 12, slide guards will be installed at four-foot intervals.
- Workers should install the eave slide guard while standing in truss webs and leaning over the sheathing;

- To install the slide guards, the employee, while standing on the plank below, shall secure the roof jacks with nails and then install the planks. The employee then can climb up to the plank and continue to install the roof. Although the eave slide guards must run the entire eave's length, and must be at approximately a 90 degrees angle (plus or minus 10 degrees) to the roof, higher slide guards need only be long enough to provide protection below the area of the roof where work is being performed and may be more level, if desired. Once the roof is installed to the ridge, the employee will climb down to the lower plank and remove the planks and roof jacks from the higher level. The employee shall continue this process down the roof until all planks and roof jacks are removed. Only when the job is completed can the remaining eave planks and roof jacks be removed.
- Not more than three (3) rows of roofing material shall be applied before installing the eave slide guards. Then, the roof jacks (or equivalent supports) shall be installed using nails long enough to hold the slide guard in place should an employee slide down the roof and contact the slide guard.
- Slide guards are to be constructed of no less than with minimum 2"X4"(nominal cut planks) capable of limiting the uncontrolled slide of workers.
- Workers positioned on previously installed rows of sheathing may install additional rows of roof sheathing. A slide guard can be used to assist workers in retaining their footing during successive sheathing operations
- On roofs with slopes greater than 8 in 12 and on roofs with slopes greater than 4 in 12 where the eave to lower level fall distance is more than 25 feet, employers shall have workers use one of the conventional methods of fall protection (i.e., safety nets, guardrails, or personal fall arrest systems), as provided in 1926.502.
- Workers must not ascend or descend the roof slope within 6 feet of the rake edge, except where such a limit on movement would prevent the performance of work.
- When wet weather (rain, snow, or sleet) is present, roof-sheathing operations shall be suspended unless safe footing can be assured for those workers installing sheathing.
- When strong winds (above 40 miles per hour) are present, roof-sheathing operations are to be suspended unless wind-breakers are erected.
- Any workers not assisting in the leading edge construction while leading edges still exist (e.g. cutting the decking for the installers) shall not be permitted within six feet of the leading edge under construction.

Final Roofing Installation

The fall protection requirements for the final roofing installation are almost identical to that for roof sheathing installations except that there is no leading edge work present. Fortress Roofing will utilize all the same requirements for slide guard installation. As for the use of Safety Monitoring Systems / Controlled Access Zones, if the size and the slope of the roof make it possible and since the roof area is now fixed, Safety Monitoring Systems will replace the Controlled Access Zones. All other details will remain consistent. It will still be necessary to limit the access to the areas where the fall hazards are present and Fortress Roofing will take all necessary steps to avoid any fall related incidents.

- Supplies and materials shall not be stored within 6 feet of the rake edge, or three feet where tile roof systems are being installed.
- Once the roofing material is installed to the ridge, the employee is to climb down to the next lower slide guard and remove the upper slide guard. The employee repeats this process down the roof until all the slide guards are removed. Only when the roofing job is completed may the slide guards at the eave be removed.

Controlled Access Zones

When using the Plan to implement the fall protection options available, workers must be protected through limited access to high hazard locations. Before any non-conventional fall protection systems are used as part of the work plan and the roof size and slope make it possible, a controlled access zone (CAZ) shall be clearly defined by the competent person as an area where a recognized hazard exists. The demarcation of the CAZ shall be communicated by the competent person in a recognized manner, either through signs, wires, tapes, ropes or chains. Fortress Roofing shall take the following steps to ensure that the CAZ is clearly marked or controlled by the competent person:

- All access to the CAZ must be restricted to authorized entrants;
- All workers who are permitted in the CAZ shall be listed in the appropriate sections of the Plan (or be visibly identifiable by the competent person) prior to implementation;
- The competent person shall be identified by wearing an orange vest or hardhat. The workers permitted into the CAZ will be identified by a blue armband or hardhat.
- The competent person shall ensure that all protective elements of the CAZ be implemented prior to the beginning of work.
- Control lines shall be erected not less than 6 feet (1.8 m) nor more than 25 feet (7.7 m) from the unprotected or leading edge.
- The control line shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.
- Control lines shall consist of ropes, wires, tapes, or equivalent materials, and supporting stanchions as follows:
 - Each line shall be flagged or otherwise clearly marked at not more than 6-foot (1.8 m) intervals with high-visibility material.
 - Each line shall be rigged and supported in such a way that its lowest point (including sag) is not less than 39 inches (1 m) from the walking/working surface and its highest point is not more than 45 inches (1.3 m) from the walking/working surface.
 - Each line shall have a minimum breaking strength of 200 pounds (.88 kN).

Safety Monitoring System

A safety monitoring system means a fall protection system in which a competent person is responsible for recognizing and warning employees of fall hazards. The duties of the safety monitor are to:

- Warn by voice when approaching the open edge in an unsafe manner.
- Warn by voice if there is a dangerous situation developing which cannot be seen by another person involved with product placement, such as a member getting out of control.
 - Make the designated erectors aware they are in a dangerous area.
 - Be competent in recognizing fall hazards.
 - Warn employees when they appear to be unaware of a fall hazard or are acting in an unsafe manner.
 - Be on the same walking/working surface as the monitored employees and within visual sighting distance of the monitored employees.
 - Be close enough to communicate orally with the employees. Not allow other responsibilities to encumber monitoring. If the safety monitor becomes too encumbered with other responsibilities, the monitor shall (1) stop the erection process; and (2) turn over other responsibilities to a designated erector; or (3) turn over the safety monitoring function to another designated, competent person. The safety monitoring system shall not be used when the wind is strong enough to cause loads with large surface areas to swing out of radius, or result in loss of control of the load, or when weather conditions cause the walking-working surfaces to become icy or slippery

III. Enforcement

Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The crew supervisor or foreman, as well as individuals in the Safety and Personnel Department, reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

IV. Training

Only workers who have been trained to be proficient in the alternative methods of fall protection used to minimize fall hazards shall be allowed onto the roof. In addition, employers shall have each affected employee trained to ensure they have specific awareness of the fall hazards associated with work on roofs with rake edges (the term "rake edges" means roof edges that are inclined such as on the gable end of a building).

V. Accident Investigations

All accidents that result in injury to workers, regardless of their nature, shall be investigated and reported. It is an integral part of any safety program that documentation take place as soon as possible so that the cause and means of prevention can be identified to prevent a reoccurrence. In the event that an employee falls or there is some other related, serious incident occurring, this plan shall be reviewed to determine if additional practices, procedures, or training need to be implemented to prevent similar types of falls or incidents from occurring.

VI. Changes to Plan

Changes to the plan must be approved by Doug Lanier, President of Fortress Roofing, Inc. This plan shall be reviewed by a qualified person as the job progresses to determine if additional practices, procedures or training needs to be implemented by the competent person to improve or provide additional fall protection. Workers shall be notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes shall be maintained at the project office.

Topic: Alternative Fall Protection for Residential Construction

Basis: Falls are the number one cause of fatalities in the construction industry. Most of the fatalities are caused by falls from unprotected sides and edges or through holes. OSHA and this employer believe that the hazards associated with working on elevated work surfaces can be eliminated by implementation of a fall protection policy. This alternative policy has been developed to facilitate work and worker protection that is conducted on residential type structures where finding suitable anchorage is infeasible. The policy is intended to allow access to the work area, allow the work to be performed and to protect the worker as allowed by OSHA Directive Std. 3-0.1A, Plain Language Revision of OSHA Instruction Std. 3.1 Interim Fall Protection Guidelines for Residential Construction, Dated 6/18/1999.

1. ALTERNATIVE PROCEDURES FOR ROOFING WORK (REMOVAL, REPAIR, OR INSTALLATION OF WEATHERPROOFING ROOFING MATERIALS SUCH AS SHINGLES, TILE AND TAR PAPER).

1.1. Restriction on Application for Roofing Work. Fortress shall ensure that the alternative procedures in this policy shall only be used for this work where:

1.1.1. The roof slope is 8 in 12 or less, *and*

1.1.2. The fall distance, measured from the eave to the ground level, is 25 feet or less.

2. General Requirements.

2.1. Only workers who have been trained to be proficient in the alternative methods of fall protection shall be allowed onto the roof.

2.2. Each affected employee shall be trained to ensure specific awareness of the fall hazards associated with work on roofs with rake edges ("rake edges" are inclined roof edges, such as those on the gable end of a building).

2.3. Slip Hazards

2.3.1. The roof surfaces shall be inspected for slipping hazards.

2.3.1.1. Any such hazards shall either be eliminated or effective measures shall be taken to have workers avoid them.

2.3.1.2. Fortress shall ensure that workers wear appropriate footwear to reduce the potential for slipping.

2.4. Bad Weather.

2.4.1. When adverse weather (such as high winds, rain, dew, or ice) creates a hazardous condition, roofing operations shall be suspended until the hazardous condition no longer exists.

2.5. Roof holes/openings.

2.5.1. Fortress shall ensure that any damaged portions of the roof deck are repaired as soon as practicable.

2.5.2. Holes (including skylight openings) or other areas where there is a potential for employees to not have safe footing shall be covered or surrounded by guardrails that comply with the requirements of 1926.502.

2.6. Ladders/Scaffolds.

2.6.1. If ladders or scaffolds are used, they shall be erected and maintained in accordance with the requirements of Subparts X and L of OSHA's construction standards. In addition, employees shall be trained in accordance with the requirements of Subparts X & L.

2.7. Access To Roof.

2.7.1. Fortress shall not allow workers to ascend or descend the roof's slope within 6 feet of the rake edge except where that limitation would prevent the performance of work.

2.8. Location of Materials.

2.8.1. Supplies and materials shall not be stored within 6 feet of the rake edge, or three feet where tile roof systems are being installed.

2.9. Impalement Hazards.

2.9.1. The area below the eaves and rakes shall be kept clear of materials and other objects which could pose impalement or other hazards, or they shall be properly guarded.

2.10. Safety Monitors and Slide Guards (for roofs with an eave height of up to and including 25 feet).

2.10.1. Roof Slope (Any Roof Type): Up to 4 in 12.

2.10.1.1. Fortress shall ensure that either a safety monitoring system that complies with 1926.502, or roofing slide guards are used.

2.10.1.1.1. If slide guards are used, they must be built and installed in accordance with the requirements set out below.

2.10.1.2. Roof Slope (Except Tile or Metal Roofs): Over 4 in 12 (and up to 8 in 12): Slide guards are required.

2.10.1.3. Roof Slope (Tile or Metal Roofs): Up to (and including) 8 in 12: The safety monitoring system may be used instead of slide guards.

2.10.1.4. Roof Slope (Any Roof Type): Over 8 in 12: Alternatives to the requirements of the standards are not available.

2.10.1.5. Eave Height Over 25 feet (Any Slope, Any Roof Type): Alternatives to the requirements of the standards are not available.

2.10.2. Slide Guards: Requirements for Materials, Configuration and Installation.

2.10.2.1. Roof Slope: 6 in 12 or less:

2.10.2.1.1. Material. All slide guards must be constructed of 2"x 6" (nominal) stock.

2.10.2.1.2. Installation. No more than three rows of roofing material (installed across the lower eave) shall be applied before installing the slide guards. The roof jacks (or similar supports) shall be installed using nails long enough to withstand an employee sliding into the guard.

2.10.2.1.3. Configuration. The face of the slide guard must be perpendicular (about 90 degrees) to the surface of the roof. There must be continuous slide guards along the eave.

2.10.2.2. Roof Slope: Over 6 in 12 (up to and including 8 in 12):

2.10.2.2.1. Material: 2"x 6" stock.

2.10.2.2.2. Installation:

2.10.2.2.2.1. Continuous slide guards shall be installed along the eave, as described above.

2.10.2.2.2.2. Additional slide guards shall be installed below each work area at intervals not to exceed eight feet.

2.10.2.2.2.3. They shall be installed using the following procedure: the employee, while standing on the slide guard below, secures the roof jacks for the next slide guard with nails and then installs the planks.

2.10.2.2.2.4. The employee then climbs up to the new slide guard to continue the roofing work. This sequence is repeated as work proceeds up the roof.

2.10.2.2.3. Configuration:

2.10.2.2.3.1. The continuous slide guards at the eave must be at about 90 degrees to the roof surface, as described above.

2.10.2.2.3.2. The additional slide guards need not be continuous -- but they must be long enough to protect the work area. They do not have to be at 90 degrees to the roof surface.

2.10.2.2.4. Removal:

2.10.2.2.4.1. Once the roofing material is installed to the ridge, the employee is to climb down to the next lower slide guard and remove the upper slide guard.

2.10.2.2.4.2. The employee repeats this process down the roof until all the slide guards are removed.

2.10.2.2.4.3. Only when the roofing job is completed may the slide guards at the eave be removed.

3. Fall Protection Plan

See next page

FORTRESS ROOFING COMPANY

FALL PROTECTION PLAN

Job Name: Address: _____

City: Contact:

Date: Fortress Employee: _____

This alternative fall protection plan is developed for the above listed job site in accordance with the provisions of OSHA Directive, 3-0.1 A, Plain Language Revision of OSHA Instruction Std. 3.1. To determine the proper application of the provisions of Std. 3-0.1A you must complete this form.

1. Are you a OSHA defined competent person relative to fall protection?

Yes No

If yes proceed to question 2. If you answer no, you may not apply provisions of OSHA Directive, 3-0.1 A.

2. Does this structure meet the OSHA definition of residential construction?

Yes No

If yes proceed to question 3. If you answer no, you may not apply provisions of OSHA Directive, 3-0.1 A.

3. Are all workers trained in the provisions of the Fortress Alternative Fall Protection Policy? Yes No

If yes proceed to question 4. If you answer no, you may not apply provisions of OSHA Directive, 3-0.1 A.

4. Is the eave height 25 feet or less?

Yes No

If yes proceed to question 5. If you answer no, you may not apply provisions of OSHA Directive, 3-0.1 A.

5. Is the roof slope 4 in 12 or less?

Yes No

If yes, you may use a Safety Monitor System or slide guards, you must determine the best application to protect workers and that is feasible. If you answer no, you may not apply provisions of OSHA Directive, 3-0.1 A.

5a. Is the roof material tile or metal?

Yes No

If yes you may use a safety monitor only. If your answer is no, you must use slide guards.