



Fatality Investigation Report

OR 2015-12-1

SPECIAL ALERT – Falls in construction are a recurring contributing factor to occupational fatalities in Oregon.

Construction worker died after falling 20-25 feet from a pump-jack scaffold

SUMMARY

A 46-year-old owner of a small residential siding company died from injuries sustained when he fell approximately 20-25 feet from a pump-jack scaffold platform onto a concrete slab. The company was a subcontractor hired to install siding on a newly constructed apartment building. The work was being performed using pump-jack scaffolding. On the day of the incident, the siding subcontractor was installing siding in a breezeway. He and his crew erected the scaffold. However, to work around the concrete stairs and related structures in the breezeway, they used only one pump-jack pole and used the stair landing to support the other end of the scaffold platform. To raise the platform above landing height they placed a stepladder on the landing, and would raise the pump-jack pole on the other side. The siding company owner was working alone at the time of the incident. He apparently was attempting to use a second stepladder placed on top of the scaffold platform to access a high peak above a 3rd floor landing, when he fell to the concrete slab at the bottom of the breezeway. A nearby worker called 911. Emergency responders arrived minutes later and transported the injured siding company owner to a hospital trauma center, where he died the following day.

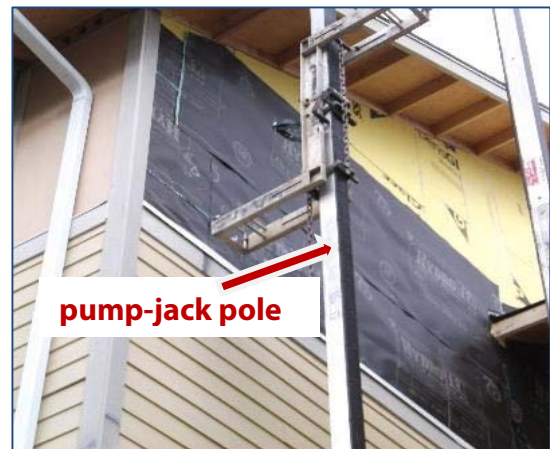
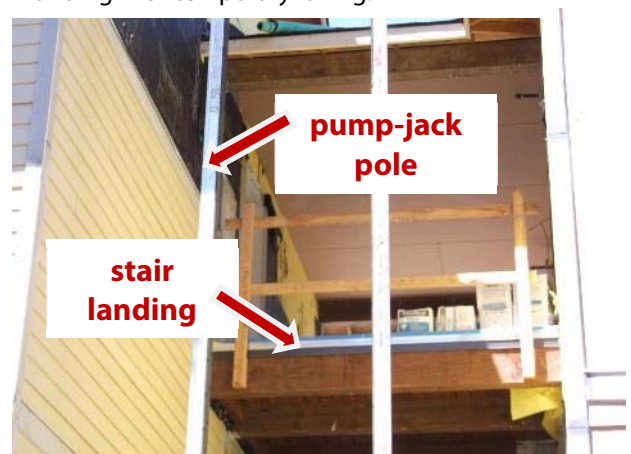


Figure 1 (above). Breezeway, pump jack pole.
Figure 2 (below). Breezeway, 3rd floor stair landing with temporary railing.



RECOMMENDATIONS

- **For any project requiring access to a height, employers should evaluate site-specific conditions to determine the most appropriate means of safely accessing the work area.**
- **General contractors and sub-contractors should require and ensure the use of fall protection appropriate for task and site conditions.**
- **If obstacles are encountered that may prevent safe or effective use of a conventional method for accessing a height, determine an appropriate alternative method that will enable safe completion of the work. Do not take shortcuts.**
- **Employers should establish a program that includes provisions for qualified persons to conduct regular and frequent inspections.**
- **Employers should develop a site-specific safety plan that addresses any particular site conditions that may affect safety or affect use of conventional safety equipment.**
- **Employers should develop and maintain a safety culture where employees are encouraged to voice concerns about unsafe work conditions.**

OR-FACE supports the prioritization of safety interventions using a hierarchy of safety controls, where top priorities are hazard elimination or substitution, followed by engineering controls, administrative controls (including training and work practices), and personal protective equipment.

INTRODUCTION

On July 1, 2015, a 46-year-old construction worker died the day after he sustained injuries from falling approximately 20-25 feet while installing siding on a newly constructed apartment building. OR-FACE received notification of the incident from OR-OSHA; OR-FACE accompanied the investigator during investigation interviews. This report is based on review of investigation documents from OR-OSHA, information obtained during interviews, and follow-up discussions with the OR-OSHA investigator.

The worker who died was the owner of a small siding company. He had three workers assisting him on this project, two of whom had been working for him on various projects for about a year.

The site was a multi-employer construction worksite consisting of four, three-story apartment buildings. The general contractor had hired various sub-contractors, including a siding contractor who

in turn hired several siding companies (including the company owned by the deceased) to perform the work over the course of the project. Construction work at the site had begun about nine months prior to the incident. The worker who was fatally injured had been working daily at this site for approximately two months at the time of the incident. Building and roofing construction was complete. Interior work was still underway in various stages of completion, and several specialty trades were working inside the buildings at the time of the incident.

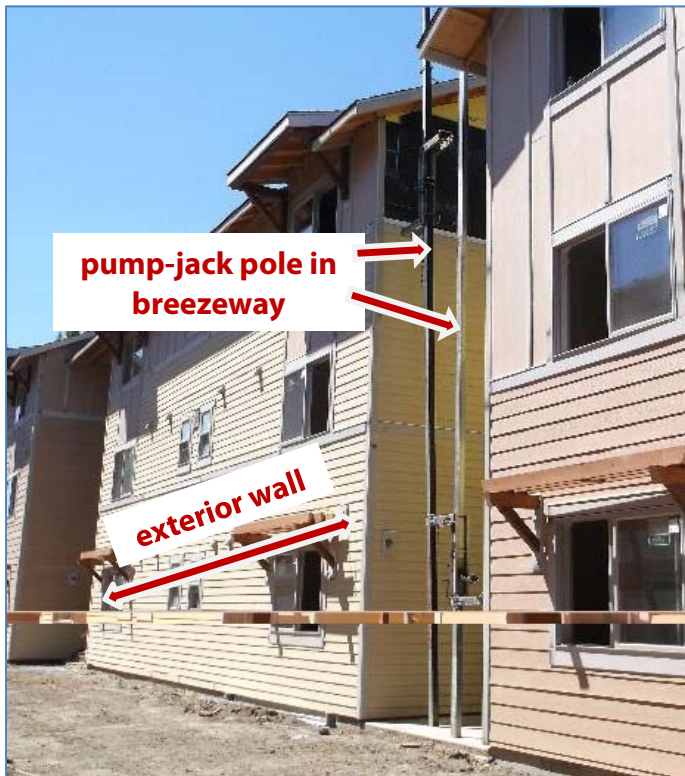


Figure 3. Exterior wall and breezeway.

The incident occurred at the last of the four buildings to be sided and painted. The siding work included applying and attaching building wrap and then installing siding boards. The victim and his crew of three workers had completed siding work on the exterior walls, then began work in the breezeway. Information obtained during interviews indicated that for work on the exterior walls the crew had set up a standard pump-jack scaffolding system. This included a minimum of three pump-jack poles to support scaffold platforms, and personal fall arrest. Specifically, the workers reported tying off to manufactured anchors that they installed on the roof. Given that fall protection equipment was available on site, it is not known why they were not used for the work in the breezeway where the incident occurred. The siding crew indicated there had been some discussion of using a beam under a sub-roof for a tie-off point in a previous breezeway. However, it is not known whether any fall protection system had been used in the previously sided breezeways.

The deceased was an experienced construction worker, although the specific number of years he had worked in the industry is not known. The site general contractor described him as experienced, efficient, and reliable. The siding subcontractor who contracted with him reported that they had a long-term working relationship and had worked together many times.

INVESTIGATION

On the day of the incident, a four-person crew consisting of the siding company owner and three employees set up scaffolding in the breezeway of one of the buildings to install siding on the wall within the breezeway of the last of the four buildings to be sided and painted. They arrived on site around 8:30 or 9:00 AM, their normal start time, and began their work. Reportedly, the concrete stairs,

stair landings, and related structures in the breezeway had hindered the ability to set up a standard scaffold system. This resulted in an incomplete scaffold system set-up around the stairs, with not all of the standard scaffold system components used. Instead they used only one pump-jack pole, supporting one end of the scaffold platform, and used the stair landing to support the other end of the platform. To raise the platform above stair landing height, an 8-foot step ladder was placed on the landing to support that end of the platform and the pump-jack pole was raised on the other side. No fall protection was used during siding work in this breezeway.

According to OR-OSHA observations and information obtained through interviews, building wrap and siding had been installed on two lower levels. The crew recalled seeing that the platform was level as the work progressed to the third level. To complete the top section siding required gaining additional height to reach the triangle shaped roof peak area above the third level landing (see Figure 4). It was assumed that to do this, the victim had placed a 6-foot step ladder on top of the scaffold platform. The victim was working alone at the time of the incident, and was not using fall protection. The three siding crew members who been assisting earlier in the day had been asked by a jobsite superintendent to perform a task on another building. Thus, they were not in the immediate vicinity at the time of the incident, nor were any other workers in the immediate vicinity. Therefore, no witnesses directly observed the specific configuration of the scaffold platform or the inferred use of the second step ladder on the platform, nor did anyone see what the victim was doing just prior to falling, or what may have triggered the fall.



Figure 4. Peak section of breezeway wall.

Scaffolds and ladders that are not properly installed or secured can tilt or sway and become unstable. In this case, two contributing factors may have affected the stability of the work platform and its ability to withstand side forces. The scaffold platform was not secured on the stair landing and was supported by a step ladder. It is possible that as a result the platform tilted or swayed, causing the victim to lose his balance, or he may have fallen because he lost his footing using the second step ladder while attempting to reach the peak section.

Another contractor, who was working around the corner from the breezeway, said he heard a loud noise, looked up, and saw the siding company owner and a step ladder falling. It was presumed that the falling ladder was the one the victim had attempted to use to reach the peak section, as the other step ladder that had been used to support the scaffold platform remained on the stair landing. This nearby contractor also recalled seeing the scaffold platform tilted up and angled out from the wall, which would be consistent with a fall from the platform.

The victim fell approximately 20-25 feet to the concrete slab. The ladder fell on top of him when he landed on the ground. The nearby contractor instructed another nearby worker to call 911. Emergency responders arrived minutes later and transported the injured siding company owner to a hospital trauma center. He did not regain consciousness and he died at the hospital the following day.

Results of the OR-OSHA investigation found that the site safety plan did not include any specifics pertaining to the work in the breezeways. Weekly safety meetings were conducted, although meeting minutes did not specifically address work in the breezeway.

CAUSE OF DEATH: Blunt force head and neck injuries.

RECOMMENDATIONS/DISCUSSION

- **For any project requiring access to a height, employers should evaluate site-specific conditions to determine the most appropriate means of safely accessing the work area.**
 - When scaffolds are identified as the best method for accessing a height, conduct a pre-erection assessment to determine all equipment and materials necessary for safe installation and use of the scaffold.
 - Alternate methods should be considered when site conditions warrant. For example, for the breezeways on this site, an aerial lift could have been used to access heights that could not be reached using standard pump-jack scaffolding.
 - Ensure that all necessary equipment, materials, and supplies are readily available on site.
 - Ensure that all employees are adequately trained in erecting all of the types of scaffold systems they may use on a given job site.
 - When working at heights, ensure that appropriate fall protection methods are identified, planned for, and properly used.
- **General contractors and sub-contractors should require and ensure the use of fall protection appropriate for task and site conditions.**
 - Personal fall arrest systems, including installing roof anchors for tying off when working at height, were available on site and were used during siding work on performed on the exterior walls.
 - Use of a properly installed fall arrest system in the breezeway where the incident occurred likely would have prevented the fatal injury. The employees reported discussing possible tie-off locations for breezeways sided earlier at the project site, but a system was not selected or implemented.

- **If obstacles are encountered that may prevent safe or effective use of a conventional method for accessing a height, determine an appropriate alternative method that will enable safe completion of the work. Do not take shortcuts.**
 - In this case, given that the stairs impeded the ability to install a complete pump-jack scaffold system, an alternative method for more safely accessing the height should have been determined. For example, an aerial lift could have been used to access heights in the breezeway that could not be reached using standard pump-jack scaffolding.
 - Do not begin the work unless all applicable scaffold system components are secured in place. For a pump-jack scaffold system, this includes at a minimum:
 - Securing poles to the structure with rigid triangular bracing (see example in Figure 5);
 - Safe access to scaffolds and scaffold platforms; and
 - Use of fall protection, such as personal fall arrest systems or guardrails, when working at heights more than 10 feet above a lower level.
 - Do not use ladders to support a scaffold platform, nor should ladders ever be used on top of a scaffold platform.
- **Employers should establish a program that includes provisions for qualified persons to conduct regular and frequent inspections.**
 - Routine construction site inspections should be conducted, and results documented.
 - Action items identified during inspections should be discussed among all affected parties, and corrective action should be taken promptly and documented. For multi-employer worksites such as this one, this should be a shared responsibility.
 - In this case, installed scaffolds should have been inspected prior to use by a qualified person, and all appropriate safety provisions should have been in place. Siding work should not have continued in the breezeway with the scaffolding configured as it was, and with no fall protection in place.
- **Employers should develop a site-specific safety plan that addresses any particular site conditions that may affect safety or affect use of conventional safety equipment.**
 - In this case, the written safety plan available on site did not address any specific conditions of this job site, for example, siding work in the breezeways.
 - Safety meetings also provide an opportunity to discuss site-specific conditions and concerns. In this case, although weekly safety meetings were held, records did not indicate that breezeway work was addressed.
 - On multi-employer worksites such as this one, all employers on site share the responsibility for protecting workers from known hazards. Effective inter-employer safety communication practices should be established involving all employers at a given site.

- **Employers should develop and maintain a safety culture where employees are encouraged to voice concerns about unsafe work conditions.**
 - If unsafe conditions, equipment, or actions are observed, this should be communicated to appropriate parties and work should be stopped until corrections are made.



Figure 5. Example of scaffold pole properly secured to building (from OR-OSHA publication, "Supported Scaffolds").

REFERENCES

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