

Roof Collapse

Although the foundation of a building affects how sturdy the structure is, the roof and its supporting elements are just as important. Improper supporting elements can lead to serious hazards, including a roof collapse.

Miguel, Jose, and David's Story

Miguel, Jose, and David were installing roof shingles on the porch of a single-family dwelling under construction. The new roof was fastened to the side of the home with two brackets on one side and nailed to the inside frame on the other side. The workers were using personal fall-protection equipment that was secured to the roof of the structure. The four bracket nails used were too short to hold the brackets in place. They pulled out, causing the roof to collapse. All three employees fell to the ground. Miguel was treated for a lacerated chin. Jose and David were hospitalized, one for a fractured leg and the other for a fractured wrist.

- ✘ **How could this incident have been prevented?**
- ✘ **Do you know someone who has had an injury from a roof collapse? If so, what happened?**

Remember This

- Make sure the roof is secure to the walls and tightly anchored before getting on it.
- Use the correct roof brackets and nail size. Choose a nail that is three times as long as the thickness of the material you are fastening.
- Nail lengths are measured in pennies. The symbol is "d". Below is a size reference chart.

2d = 1 inch	9d = 2 ¾ inches
3d = 1 ¼ inches	10d = 3 inches
4d = 1 ½ inches	12d = 3 ¼ inches
5 d = 1 ¾ inches	16d = 3 ½ inches
6d = 2 inches	20d = 4 inches
7d = 2 ¼ inches	30d = 4 ½ inches
8d = 2 ½ inches	40d = 5 inches

- Consider using scaffolding or a bucket/basket power lift on solid footing.
- Make sure that guarding and/or fall protection is in place. Consider installing permanent anchor point safety features for future repair or maintenance.
- Inspect the fall protection to make sure it is working, and always use it correctly.
- Inspect the job site for hazards every day before work.

How can we stay safe today?

What will we do at the worksite to prevent injuries from a roof collapse?

1. _____

2. _____

OSHA Regulation: 1926.501

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- ✘ Make sure that there is guarding and/or fall protection.
- ✘ Make sure the roof is fully nailed to the walls before getting on it. Use the correct roof brackets and nail size.
- ✘ Inspect the job site for hazards before work.