

Guardrails

GENERAL DISCUSSION

Today we'll be talking about guardrails. Never forget that a guardrail can save your life. It's not the fall, but the sudden stop that kills. Falls are the #1 cause of disability among construction workers. Many die in fact, 50% of those who fall 11 feet or more to a hard surface are killed. If you became a fatality today, your friends and family would grieve and your employer might be fined. Life would go on but you wouldn't. Don't take the fall! You or a crewmember may want to add a personal story about guardrails.

Ask the Crew these Questions

After each question, give the crew time to suggest possible answers. Use the information following each question to add points that no one mentions.

1. When and where do we need to use guardrails?

There should be guardrails wherever workers could fall more than 7½ feet:

- Off structures.
- Through wall or floor openings.
- Through shaftways.
- Off platforms, scaffolds, or ramps.
- Into holes.
- From sloped surfaces.

There should be guardrails wherever workers or equipment cross trenches or excavations. Point out locations on this site that require and have guardrails:

2. What are the two purposes of a guardrail?

- A guardrail keeps people from falling.
- A guardrail and toeboard keep materials, tools, and equipment from falling.

3. OSHA says that guardrails must be built to meet certain standards. Let's look at a guardrail on this site and see if it meets the "specs." What should we check for?

Using a nearby guardrail, demonstrate the requirements below as the crew mention them.

- Must be able to withstand a 200-pound load in any direction.
- Must be 42' -45' high from floor to top of rail.
- Posts must not exceed 8-foot centers.
- Must have a midrail. The midrail must be at least 1' x 6'.
- The top rail and posts must be at least 2' x 4'.
- Must have a 4' high toeboard strong enough to stop tools and materials from sliding or rolling over the edge. If a 4' toeboard isn't enough protection, then paneling or screening should be used.
- The material must be good, not defective, and not have splinters. May use 1½' steel pipe or 2' x 2' x 3/8' angle for posts, top, and midrail. Other materials of equal or greater strength may be substituted.

4. Besides guardrails, what other safety measures are needed around holes?

- Cover holes securely.
- Mark holes with warning signs.

5. Suppose you need to remove a guardrail, hole cover, or warning sign to do a job. What precautions should you take?

- Post a watch while you're working.
- Put it back as soon as the work is done.

6. What if it's not possible to install a guardrail?

- If there are no guardrails, any worker who could fall more than 7½ feet should tie off with a harness and lifeline.

(Fall Protection is covered in more detail in a separate Training Guide.)

OSHA Regulations

OSHA requires most of the safety measures we've talked about. We have to take these precautions it's the law. I have a Checklist of the OSHA regulations on guardrails. If you'd like to know more, see me after the meeting.

Company Rules

(Only if applicable.) Besides the OSHA regulations, we have some additional company rules about guardrails. Discuss company rules:

Comments From the Crew

Ask the following: Do you have any other concerns about guardrails? Do you see any problems on our job? What about other jobs you've worked on? Have you had any experience with guardrails that might help us work safer on this job?

GENERAL SAFETY REVIEW

This is a time to review all safety concerns, not just today's topic. Keep your notes on this page before, during and after the safety meeting.

Are you aware of any safety hazards from any other crews? Point out any hazards other crews are creating that this crew should know about. Tell the crew what you intend to do about those hazards.

Do we have any other safety business? Discuss any past issues or problems. Report any progress of investigations and action taken.

Have there been any accidents, near misses or complaints? Discuss any accidents, near misses, and complaints that have happened since the last safety meeting. Also recognize the safety contributions made by members of the crew.

Please remember, we want to hear from you about any health and safety issues that come up. If we don't know about problems, we can't take action to fix them.

ENDING THE MEETINGS

Circulate Sign-Off Form.

Assign one or more crew member(s) to help with next safety meeting.

Refer action items for follow-up.

Do you have any Safety Recommendations?

Do you have any Job Specific Topics you would like us to discuss?

Comments:

SAFETY TALKS REVIEW

Hazard Identification

The company has a written Safety and Health Program that meets all OSHA requirements. It includes identification of hazards on the site that could cause falls, as well as regular inspections, accident investigation, and correction of hazardous conditions.

Guardrails or Cover Requirements

1. All open sides and ends have railings (or workers are protected by safety belts or nets). This is true for most scaffolds, runways, ramps, rolling scaffolds, elevated platforms, surfaces, wall openings, or other elevations 7½ feet or more above the ground, floor, or other level surface.
2. 4' toeboards are provided and are fastened in place on all open sides and ends of railed scaffolds at locations where persons are required to work or pass under the scaffold, and at all interior floor, roof, and shaft openings.
3. On skeleton steel structures more than 30 feet in height, all exposed edges of temporary planked (or metal decked) floors at the periphery

- (and at interior openings) are protected by a wire rope (perimeter cable) or equivalent guardrail protection. Perimeter cable is at least 3/8' diameter wire rope of 13,500 pounds minimum breaking strength. It is located 42' - 45' from finished floor height. After decking is complete, midrail protection is installed.
4. On structural wood framing more than 15 feet in height, there are standard guardrails. At the leading edge, parapets at least 24' high are provided. Otherwise, workers wear harnesses with lifelines, or safety belts with lifelines.
 5. All stairs and stairwells (also stairway landings, porches, and balconies) have guardrails and toeboards. Handrails are 30' -34' above the stair tread nose.
 6. All holes and floor openings are covered, or are guarded on all sides by standard guardrails and toeboards. (For additional protection for roofers.)
 7. Covers are securely fastened.
 8. Covers are able to withstand the weight of a 200-pound person or the weight of workers and materials actually placed on them, whichever is greater.
 9. Covers are marked with a sign: OPENING --DO NOT REMOVE.
 10. Standard guardrails and toeboards guard all ladderway openings unless there is a gate.
 11. All wall openings have guardrails if there is a drop of more than 4 feet and the bottom of the opening is less than 3 feet above the working surface. In addition, toeboards are provided if the bottom is less than 4' above the working surface.
 12. All extension platforms outside wall openings have siderails.
 13. All elevator shafts have standard guardrails and toeboards if they are not enclosed or do not have cages.
 14. Periphery rails are installed as soon as false work supporting members are in place.
 15. All wall openings have guardrails, except on the ground floor and a floor being demolished.
 16. All crossovers above trenches and excavations have standard guardrails.
 17. All catwalks on dredge discharge pipelines have a flat surface walkway at least 12' wide and a guardrail.
 18. All catwalks or platforms over water more than 4' deep are at least 20' wide and have guardrails.

Guardrail Specifications

1. Railings are made of 'select' lumber free of damage, or of equally substantial material.
2. Top rail is 42' -45' from floor.
3. Midrail is halfway between top and floor.

4. Top rails and handrails are smooth and at least 2' x 4'. Midrails are at least 1' x 6'.
5. Wooden support posts are at least 2' x 4' and spaced at intervals of 8 feet or less.
6. Railings are capable of withstanding a load of 13 pounds per linear foot.
7. Toeboards are provided on scaffolds and interior floor, roof, and shaft openings where persons work or pass underneath. They extend at least 4' above the floor.
8. If materials are too high for the toeboards, paneling or screening to the mid or top rail is used.

Temporary Floors

1. On steel structures, tight substantial temporary floors (planked or metal decking) are installed every 2 floors.
2. On non-steel structures, tight substantial temporary floors (planked or concrete) are installed every floor before work begins on the walls or floor above.

Access

1. There are permanent or temporary stairways in all structures 2 stories (24 feet) or more in height or depth. (Not required on scaffolds.)
2. There is a passenger elevator for hoisting workers on any structure, which is at least 60 feet high or 48 feet below ground.
3. Walkways, stairs, and ladders are safe and not blocked.
4. Stairways, ramps, or ladders are provided whenever there is a break in elevation of 18' or more.