

## Guardrail Systems

Where workers on a construction site are exposed to vertical drops of 6 feet or more, OSHA requires that employers provide fall protection in one of three ways *before* work begins:

- Placing guardrails around the hazard area.
- Deploying safety nets.
- Providing personal fall arrest systems for each employee.

Many times the nature and location of the work will dictate the form that fall protection takes. If the employer chooses to use a guardrail system, he must comply with the following provisions:

- Top edge height of top rails, or equivalent guardrail system members, must be between 39 and 45 inches above the walking/working level, except when conditions warrant otherwise and all other criteria are met (e.g., when employees are using stilts, the top edge height of the top rail must be increased by an amount equal the height of the stilts).
- Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structures, must be installed between the top edge and the walking/working surface when there is no wall or other structure at least 21 inches high.
  - Midrails must be midway between the top edge of the guardrail system and the walking/working level.
  - Screens and mesh must extend from the top rail to the walking/working level, and along the entire opening between rail supports.
  - Intermediate members (such as balusters) between posts must be no more than 19 inches apart.
  - Other structural members (such as additional midrails or architectural panels) must be installed so as to leave no openings wider than 19 inches.
- Guardrail systems must be capable of withstanding at least 200 pounds of force applied within 2 inches of the top edge, in any direction and at any point along the edge, and without causing the top edge of the guardrail to deflect downward to a height less than 39 inches above the walking/working level.
- Midrails, screens, mesh, and other intermediate members must be capable of withstanding at least 150 pounds of force applied in any direction at any point along the midrail or other member.
- Guardrail systems must not have rough or jagged surfaces that would cause punctures, lacerations, or snagged clothing.
- Top rails and midrails must not cause a projection hazard by overhanging the terminal posts.



**This guardrail appears to be properly constructed except for the missing toeboard that is required to prevent object from falling to the floor below and possibly striking another worker.**