

Chapter 20 - Appendix C: Requirements for Guardrail Systems and Hole Covers

Guardrail Systems

- Top rail is 42 inches, +/- 3 inches above the walking/working level,
- Midrail is located midway between the top rail and the walking/working level,
- It is important to remember that the working level is that level where the work is being done. Someone working on a stepladder next to an edge may raise his/her working surface well above the walking surface.
- Both top and midrails should be constructed of materials at least one-quarter inch in thickness or diameter. If wire rope is used for top rails, it needs to be flagged with a high-visibility material at least every 6 feet and can have no more than 3" of deflection,
- The top rail needs to withstand a force of 200 pounds when applied in any downward or outward direction,
- The midrail needs to withstand a force of 150 pounds applied in any downward or outward direction,
- Toe boards are required for all guardrails on elevated walking or working platforms where there is a potential falling object exposure. Toe boards must be four inches nominal in height and must be securely fastened.
- The entire system should be smooth to prevent punctures, lacerations or snagging of clothing,
- The ends of the top rail shouldn't overhang the terminal posts, except when such overhang does not present a projection hazard
- When a hoisting area is needed, a chain, gate or removable guardrail section must be placed across the access opening when hoisting operations are not taking place. Additional fall protection is required in hoisting areas when the removable section is open (e.g. warning lines to limit access to the area or travel restraint or personal fall arrest for personnel working near the hoisting area)

Hole Covers

- Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.
- All other covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.
- All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.
- All covers shall be color coded, or they shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard. Note: This provision does not apply to cast iron manhole covers or steel grates used on streets or roadways.