

## FLOOR OR WALL OPENINGS

*Stairway Openings:* Standard railings will be provided on all exposed sides except at the stairway entrance.

*Stairway Railings and Guards:* Every flight of stairs having **four or more** risers (steps) will be equipped with a standard stair railing as described below:

- On stairways less than 44 inches wide with both sides enclosed, at least one handrail on the right side descending;
- On stairways less than 44 inches wide having one side open, at least one stair railing on the open side;
- On stairways less than 44 inches wide but with both sides open, one stair railing on each side;
- On stairways more than 44 inches wide but less than 88 inches wide, one handrail on each enclosed side, one stair railing on each open side; and
- On stairways 88 inches or more wide, one handrail on each enclosed side, one stair railing on each open side and one intermediate stair railing located approximately midway of the width.

*Stairway Railing and Handrail Specifications:* The following provides guidance on how all railings and handrails will be constructed. When purchasing equipment, these requirements must be followed:

- A stair railing system must be of similar construction to a guardrail system except that the vertical height may not be more than 34 inches or less than 30 inches from the upper surface of the top rail to the surface of the tread; and
- The height of the handrails may not be more than 34 inches nor less than 30 inches from upper surface of the handrail to surface of the tread, with a clearance of not less than 3 inches between the handrail and wall.

*Fixed Industrial Stairs:* All fixed industrial stairs, purchased or installed, must meet the following requirements:

- Fixed stairs will be provided for access from one level to another where operations necessitate normal travel between levels and for access to operating platforms for any equipment that requires routine attention;
- Fixed stairs must be capable of carrying a load five times the normal live load anticipated with a minimum ability to safely carry a moving, concentrated load of 1,000 pounds;
- Fixed stairs must have a minimum width of 22 inches;
- Fixed stairs will be installed at angles to the horizontal of 30 to 50 degrees. Any uniform combination of tread width and rise height shall be in accordance with the chart in Appendix B. When pre-fabricated stairs are ordered, these requirements must be specified. Note: Appendix B contains the same requirements as outlined in the OSHA standard for fixed industrial stairs (29 CFR 1910.24(e) Table D-1);
- All stair treads must be slip-resistant;
- Stairway platforms may be no less than the width of the stairway and a minimum of 30 inches in length, measured in the direction of travel;
- Standard railings must be provided on the open sides of all exposed stairways and platforms, and handrails must be provided on at least one side of closed stairways; and
- The vertical clearance above any stair tread to an overhead obstruction must be at least 7 feet, measured from the leading edge of the tread.

*Floor Opening or Hole:* Every floor opening or hole must be guarded by either a railing system with toe boards along all exposed sides or a load-bearing cover. When the cover is not in place, the roof, floor opening or hole must be protected by a removable guard railing.

*Protection of Wall Openings/Holes:* Every wall opening from which there is a drop of more

than four feet will be guarded by a railing system. Where there is a potential of exposure to falling objects, a removable toe board will be provided.