

Stair Construction in Commercial Applications

Here at the Building Department we often get inquiries about the rules governing the construction of stairs and handrails in commercial and multi-family construction.

Stairs and handrails in commercial construction require the builder to follow a different set of code requirements than those found in single family residential construction. These differences often cause confusion among carpenters who are not experienced working in commercial construction.

Following are some of the common code provisions for stair construction from the International Building Code. As always, we encourage you to contact the Building Department with code questions and we can provide more detailed answers specific to your project. We can be reached at 747-1832 or 747-1837.

- There shall be at least 80" of headroom measured off the tread nosing and at every landing.
- Stairways have to be at least 44" in width if the occupant load is 50 people or more. If the occupant load is under 50 the required width can be reduced to no less than 36".
- Landings are required at the top and bottom of every stair.
- Landings have to be at least as wide as the stair and you can't go up more than 12'-0" vertically without a landing.
- The landing shall run in the direction of travel a dimension at least equal to the measured width of the stair but is not required to run more than 48".
- Where a door opens onto a landing it cannot reduce the landing to less than one half the required landing width.
- The riser height must be between 4" and 7" and the treads must be at least 11" deep.
- Risers have to be closed or designed to limit the open space to less than 4".
- Guardrails on stairs and landings are required to be 42" high. Openings in guardrails have to be sized so a 4" sphere cannot pass through.
- Handrails must be mounted between 34" and 38" above the tread nosings and landings. Where they are circular they need to be 1.25" to 2" in diameter. If the handrail isn't circular it needs to have a perimeter between 4" and 6.25" with a maximum cross section of 2.25". The handrail needs to be mounted a minimum of 1.5" off the wall.
- Handrails must return to a wall, a guard or the walking surface or continue to another handrail. The IBC requires that handrails extend 12" horizontally past the top riser and continue on the rake one tread depth past the bottom riser.
- Handrails are required on both sides of the stair and can't project more than 4.5" into the stair width on each side.