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Construction Tip Sheet 13.1

Residential and Commercial Ramps

(For Americans with Disabilities Act (ADA) requirements, see Tip Sheet 13)

Ramps are used primarily to provide a way for people with disabilities to access a building. Building code requirements for ramps can be found in the IBC 2009 code section 1010 and IRC 2009 code section R311.8. If the ramp is proposed in order to provide a way for a disabled person to access a building, the project should be built to the 2010 ADA Standards for Accessible Design. Generally, the ADA standards for ramps exceed the building code requirements, however as previously stated, if the ramp is intended for someone disabled it is recommended that it be constructed to ADA. If you are attempting to provide an independent living environment for a person with disabilities, you may want to explore the services of a firm, company or person knowledgeable in the field. The State Fire Marshal's office may be able to provide assistance in finding these services (207) 626-3870.

Below are the IRC R311.8 and IBC 1010 code sections. For the ADA ramp requirements, please see Tip Sheet 13.

RAMPS; Residential code IRC 2009

R311.8 Ramps.

R311.8.1 Maximum slope. Ramps shall have a maximum slope of 1 unit vertical in 12 units horizontal (8.3 percent slope).

Exception: Where it is technically infeasible to comply because of site constraints, ramps may have a maximum slope of one unit vertical in eight horizontal (12.5 percent slope).

R311.8.2 Landings required. A minimum 3-foot-by-3-foot (914 mm by 914 mm) landing shall be provided:

1. At the top and bottom of ramps.
2. Where doors open onto ramps.
3. Where ramps change direction.

R311.8.3 Handrails required. Handrails shall be provided on at least one side of all ramps exceeding a slope of one unit vertical in 12 units horizontal (8.33-percent slope).

R311.8.3.1 Height. Handrail height, measured above the finished surface of the ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).

R311.8.3.2 Grip size. Handrails on ramps shall comply with [Section R311.7.7.3](#).

R311.8.3.3 Continuity. Handrails where required on ramps shall be continuous for the full length of the ramp. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1¹/₂ inches (38 mm) between the wall and the handrails.

RAMPS; Commercial code IBC 2009

SECTION 1010 RAMPS

1010.1 Scope. The provisions of this section shall apply to *ramps* used as a component of a *means of egress*.

Exceptions:

1. Other than *ramps* that are part of the *accessible routes* providing access in accordance with [Sections 1108.2](#) through [1108.2.4](#) and [1108.2.6](#), ramped *aisles* within assembly rooms or spaces shall conform with the provisions in [Section 1028.11](#).
2. Curb *ramps* shall comply with ICC A117.1.
3. Vehicle ramps in parking garages for pedestrian *exit access* shall not be required to comply with [Sections 1010.3](#) through [1010.9](#) when they are not an *accessible route* serving *accessible* parking spaces, other required accessible elements or part of an *accessible means of egress*.

1010.2 Slope. *Ramps* used as part of a *means of egress* shall have a running slope not steeper than one unit vertical in 12 units horizontal (8-percent slope). The slope of other pedestrian *ramps* shall not be steeper than one unit vertical in eight units horizontal (12.5-percent slope).

Exception: *Aisle ramp* slope in occupancies of Group A or assembly occupancies accessory to Group E occupancies shall comply with [Section 1028.11](#).

1010.3 Cross slope. The slope measured perpendicular to the direction of travel of a *ramp* shall not be steeper than one unit vertical in 48 units horizontal (2-percent slope).

1010.4 Vertical rise. The rise for any *ramp* run shall be 30 inches (762 mm) maximum.

1010.5 Minimum dimensions. The minimum dimensions of *means of egress ramps* shall comply with [Sections 1010.5.1](#) through [1010.5.3](#).

1010.5.1 Width. The minimum width of a *means of egress ramp* shall not be less than that required for *corridors* by [Section 1018.2](#). The clear width of a *ramp* between *handrails*, if provided, or other permissible projections shall be 36 inches (914 mm) minimum.

1010.5.2 Headroom. The minimum headroom in all parts of the *means of egress ramp* shall not be less than 80 inches (2032 mm).

1010.5.3 Restrictions. *Means of egress ramps* shall not reduce in width in the direction of egress travel. Projections into the required *ramp* and landing width are prohibited. Doors opening onto a landing shall not reduce the clear width to less than 42 inches (1067 mm).

1010.6 Landings. *Ramps* shall have landings at the bottom and top of each *ramp*, points of turning, entrance, exits and at doors. Landings shall comply with [Sections 1010.6.1](#) through [1010.6.5](#).

1010.6.1 Slope. Landings shall have a slope not steeper than one unit vertical in 48 units horizontal (2-percent slope) in any direction. Changes in level are not permitted.

1010.6.2 Width. The landing shall be at least as wide as the widest *ramp* run adjoining the landing.

1010.6.3 Length. The landing length shall be 60 inches (1525 mm) minimum.

Exceptions:

1. In Group R-2 and R-3 individual dwelling and sleeping units that are not required to be *Accessible units*, *Type A units* or *Type B units* in accordance with [Section 1107](#), landings are permitted to be 36 inches (914 mm) minimum.
2. Where the *ramp* is not a part of an *accessible route*, the length of the landing shall not be required to be more than 48 inches (1220 mm) in the direction of travel.

1010.6.4 Change in direction. Where changes in direction of travel occur at landings provided between *ramp* runs, the landing shall be 60 inches by 60 inches (1524 mm by 1524 mm) minimum.

Exception: In Group R-2 and R-3 individual dwelling or sleeping units that are not required to be *Accessible units*, *Type A units* or *Type B units* in accordance with [Section 1107](#), landings are permitted to be 36 inches by 36 inches (914 mm by 914 mm) minimum.

1010.6.5 Doorways. Where doorways are located adjacent to a *ramp* landing, maneuvering clearances required by ICC A117.1 are permitted to overlap the required landing area.

1010.7 Ramp construction. All *ramps* shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood *handrails* shall be

permitted for all types of construction. *Ramps* used as an *exit* shall conform to the applicable requirements of [Sections 1022.1](#) through [1022.6](#) for *exit enclosures*.

1010.7.1 Ramp surface. The surface of *ramps* shall be of slip-resistant materials that are securely attached.

1010.7.2 Outdoor conditions. Outdoor *ramps* and outdoor approaches to *ramps* shall be designed so that water will not accumulate on walking surfaces.

1010.8 Handrails. *Ramps* with a rise greater than 6 inches (152 mm) shall have handrails on both sides. *Handrails* shall comply with [Section 1012](#).

Exception: *Handrails* for ramped *aisles* are not required where permitted by [Section 1028.13](#).

1010.9 Edge protection. Edge protection complying with [Section 1010.9.1](#) or [1010.9.2](#) shall be provided on each side of *ramp* runs and at each side of *ramp* landings.

Exceptions:

1. Edge protection is not required on *ramps* that are not required to have *handrails*, provided they have flared sides that comply with the ICC A117.1 curb ramp provisions.
2. Edge protection is not required on the sides of ramp landings serving an adjoining *ramp* run or *stairway*.
3. Edge protection is not required on the sides of *ramp* landings having a vertical drop off of not more than $\frac{1}{2}$ inch (12.7 mm) within 10 inches (254 mm) horizontally of the required landing area.
4. In assembly spaces with fixed seating, edge protection is not required on the sides of *ramps* where the *ramps* provide access to the adjacent seating and *aisle accessways*.

1010.9.1 Curb, rail, wall or barrier. A curb, rail, wall or barrier shall be provided to serve as edge protection. A curb shall be a minimum of 4 inches (102 mm) in height. Barriers shall be constructed so that the barrier prevents the passage of a 4-inch-diameter (102 mm) sphere, where any portion of the sphere is within 4 inches (102 mm) of the floor or ground surface.

1010.9.2 Extended floor or ground surface. The floor or ground surface of the *ramp* run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a *handrail* complying with [Section 1012](#).

1010.10 Guards. *Guards* shall be provided where required by [Section 1013](#) and shall be constructed in accordance with [Section 1013](#).