

WALLA WALLA COUNTY

Community Development Department

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RAMPS

2006 International Building Code (IBC) 1010 Ramps, 1012 Handrails
and ICC/ANSI A117.1-2003

- Ramp surfaces are stable, firm, and slip resistant.
- Exposed exterior ramps and their approaches are constructed to prevent the accumulation of water on walking surfaces.
- Ramps used as part of means of egress have a maximum slope of 1:12 with handrails; 1:20 without handrails.
- The maximum rise for any run is 30 inches.
- Ramp cross slopes are not steeper than 1:48.
- Projections into ramp width are prohibited.
- The required means of egress width is not reduced.
- The clear width of a ramp and the clear width between handrails, if provided, are 36 inches minimum for Residential; 44 inches for Commercial.
- Headroom at all parts of the means of egress is not less than 80 inches.

RAMP AND LANDING EDGE PROTECTION

- Any portion of the edge of a ramp with a slope greater than 1:20, or landing which is more than ½ inch above the adjacent grade or floor within 10 inches horizontally, requires edge protection.
- Edge protection is required on each side of ramp runs and at each side of ramp landings, by a curb or barrier or by extended floor surface. (An extended floor surface occurs when the surface of ramp or landing extends 12 inches minimum beyond the inside face of a railing.)
Exceptions:
 - Edge protection is not required on ramps not required to have handrails, provided they have flared sides complying with ICC/ANSI A117.1-2003, Section 406.3, Sides of Curb Ramps.
 - Edge protection is not required on sides of ramp serving an adjacent ramp run or stairway.
 - Edge protection is not required on sides of ramp landings with vertical drop-off of not more than ½ inch within 10 inches horizontally of the minimum landing area.
- Edge protection options:
 1. A curb or barrier is required that prevents passage of a 4-inch sphere below the height of 4 inches. (See Figure 1a and 1b.)
 2. Railings: When used, railings are required to have one of the following features:
 - a. An intermediate rail mounted 17-19 inches above the ramp or landing surface (See Figure 1c.); or
 - b. A guard complying with IBC 1013; or
 - c. The surface of the ramp or landing extends 12 inches beyond the inside face of the railing. (See Figure 1d.)

LANDINGS

- Ramp surfaces are stable, firm and slip resistant.
- Exposed exterior ramps and their approaches are constructed to prevent the accumulation of water on walking surfaces.
- Ramps within the accessible route of travel have landings at the top and bottom, points of turning, entrance, exits, and doors and at least one intermediate landing for each 30 inches of rise with a minimum dimension of 60 inches in the direction of the ramp run.
- Ramps that change direction at landings have landings sized to provide a 60 inch turning space (60 x 60 inches) or a T-shaped intersection 60 inches long by 36 inches wide (36 inches wide at each arm of T). (See Figure 2.)
- The minimum width of the landing is as wide as the widest ramp leading to the landing. Exception: Landings in nonaccessible R-2 and R-3 individual dwelling units may be 36 x 36 inches. (IBC 1010.6.3)
- Landings do not slope more than 1:48.
- Maneuvering clearances for doors can overlap the landing area where doorways are adjacent to the ramp.

HANDRAILS AND GUARDS

- Ramps having slopes steeper than 1:20 have handrails. (See Figure 3.)
- Ramps with a rise greater than 6 inches have handrails 34-38 inches in height.
- Handrails extend at least 12 inches beyond the top and bottom of any ramp run and are returned.
- Handrails are continuous except at points of access along the ramp.
- Provide guards for portions of landings or ramps that are more than 30 inches above adjacent grade.
- Guards are minimum 36 inches in height above walking surfaces for dwelling units falling under the International Residential Code (IRC); 42 inches for Commercial applications.

ICC/ANSI A117.1-2003

Chapter 4. Accessible Routes

405 Ramps

405.1 General. Ramps along accessible routes shall comply with Section 405.

405.2 Slope. Ramp runs shall have a running slope not steeper than 1:12.

EXCEPTION: In existing buildings or facilities, ramps shall be permitted to have slopes steeper than 1:12 complying with Table 405.2 where such slopes are necessary due to space limitations.

405.3 Cross Slope. Cross slope of ramp runs shall not be steeper than 1:48.

405.4 Floor Surfaces. Floor surfaces of ramp runs shall comply with Section 302.

405.5 Clear Width. The clear width of a ramp run shall be 36 inches (915 mm) minimum; 44 inches for Commercial. Where handrails are provided on the ramp run, the clear width shall be measured between the handrails.

405.6 Rise. The rise for any ramp run shall be 30 inches (760 mm) maximum.

Table 405.2 -- Allowable Ramp Dimensions for Construction in Existing Sites, Buildings, and Facilities

Slope ¹	Maximum Rise
Steeper than 1:10 but not steeper than 1:8	3 inches (75 mm)
Steeper than 1:12 but not steeper than 1:10	6 inches (150 mm)

¹ A slope steeper than 1:8 shall not be permitted.

405.7 Landings. Ramps shall have landings at bottom and top of each ramp run. Landings shall comply with Section 405.7.

405.7.1 Slope. Landings shall have a slope not steeper than 1:48 and shall comply with Section 302.

405.7.2 Width. Clear width of landings shall be at least as wide as the widest ramp run leading to the landing.

405.7.3 Length. Landings shall have a clear length of 60 inches (1525 mm) minimum.

405.7.4 Change in Direction. Ramps that change direction at ramp landings shall be sized to provide a turning space complying with Section 304.3.

405.7.5 Doorways. Where doorways are adjacent to a ramp landing, maneuvering clearances required by Sections 404.2.3 and 404.3.2 shall be permitted to overlap the landing area. Where doors that are subject to locking are adjacent to a ramp landing, landings shall be sized to provide a turning space complying with Section 304.3.

405.8 Handrails. Ramp runs with a rise greater than 6 inches (150 mm) shall have handrails complying with Section 505.

405.9 Edge Protection. Edge protection complying with Section 405.9.1 or 405.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.

EXCEPTIONS:

1. Ramps not required to have handrails where curb ramp flares complying with Section 406.3 are provided.
2. Sides of ramp landings serving an adjoining ramp run or stairway.
3. Sides of ramp landings having a vertical drop-off of ½ inch (13 mm) maximum within 10 inches (255 mm) horizontally of the minimum landing area.

405.9.1. Extended Floor Surface. The floor surface of the ramp run or ramp landing shall extend 12 inches (305 mm) minimum beyond the inside face of a railing complying with Section 505.

405.9.2 Curb or Barrier. A curb or barrier shall be provided that prevents the passage of a 4-inch (100 mm) diameter sphere where any portion of the sphere is within 4 inches (100 mm) of the floor.

405.10 Wet Conditions. Landings subject to wet conditions shall be designed to prevent the accumulation of water.

ICC/ANSI A117.1-2003

Chapter 5. General Site and Building Elements

505 Handrails

505.1 General. Handrails required by Section 405.8 for ramps, or Section 504.6 for stairs, shall comply with Section 505.

505.2 Location. Handrails shall be provided on both sides of stairs and ramps.

EXCEPTION: Aisle stairs and aisle ramps provided with a handrail either at the side or within the aisle width.

505.3 Continuity. Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs or ramps shall be continuous between flights or runs. Other handrails shall comply with Sections 505.10 and 307.

EXCEPTION: Handrails in aisles serving seating.

505.4 Height. Top of gripping surfaces of handrails shall be 34 inches (865 mm) minimum and 38 inches (965 mm) maximum vertically above stair nosings, ramp surfaces and walking surfaces. Handrails shall be at a consistent height above stair nosings, ramp surfaces and walking surfaces.

505.5 Clearance. Clearance between handrail gripping surface and adjacent surfaces shall be 1-1/2 inches (38 mm) minimum.

505.6 Gripping Surface. Gripping surfaces shall be continuous, without interruption by newel posts, other construction elements, or obstructions.

EXCEPTIONS:

1. Handrail brackets or balusters attached to the bottom surface of the handrail shall not be considered obstructions, provided they comply with the following criteria:
 - a) not more than 20 percent of the handrail length is obstructed;
 - b) horizontal projections beyond the sides of the handrail occur 1-1/2 inches (38 mm) minimum below the bottom of the handrail, and provided that for each 1/2 inch (13 mm) of additional handrail perimeter dimension above 4 inches (100 mm), the vertical clearance dimension of 1-1/2 inch (38 mm) can be reduced by 1/8 inch (3.2 mm); and
 - c) edges shall be rounded.
2. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.

505.7 Cross Section. Handrails shall have a cross section complying with Section 505.7.1 or 505.7.2.

505.7.1 Circular Cross Section. Handrails with a circular cross section shall have an outside diameter of 1-1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum.

505.7.2 Noncircular Cross Sections. Handrails with a noncircular cross section shall have a perimeter dimension of 4 inches (100 mm) minimum and 6-1/4 inches (160 mm) maximum, and a cross-section dimension of 2-1/4 inches (57 mm) maximum.

505.8 Surfaces. Handrails, and any wall or other surfaces adjacent to them, shall be free of any sharp or abrasive elements. Edges shall be rounded.

505.9 Fittings. Handrails shall not rotate within their fittings.

505.10 Handrail Extensions. Handrails shall extend beyond and in the same direction of stair flights and ramp runs in accordance with Section 505.10.

EXCEPTIONS:

1. Continuous handrails at the inside turn of stairs and ramps.
2. Extensions are not required for handrails in aisles serving seating where the handrails are discontinuous to provide access to seating and to permit crossovers within the aisle.
3. In alterations, full extensions of handrails shall not be required where such extensions would be hazardous due to plan configuration.

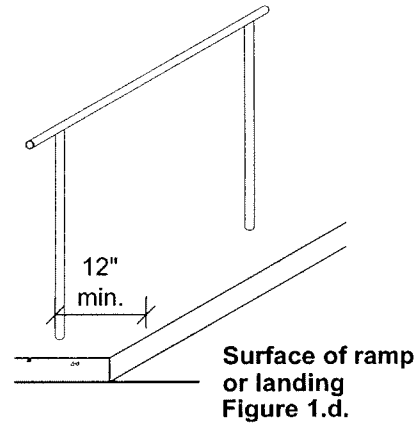
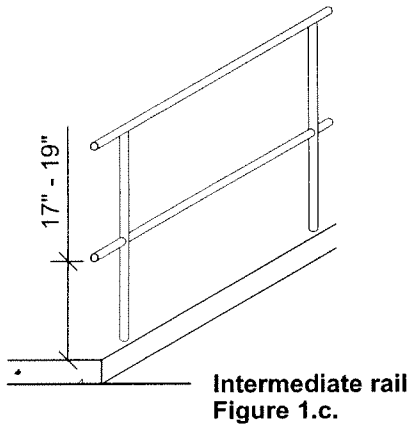
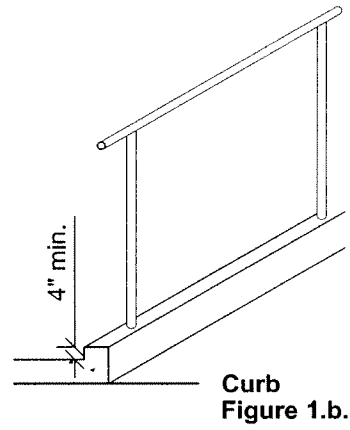
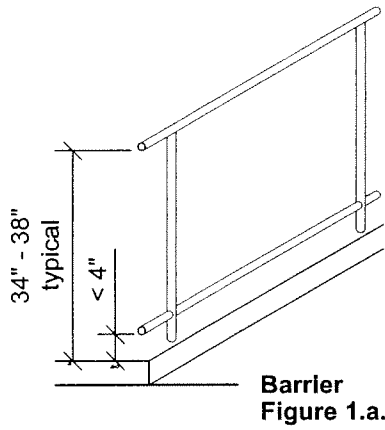
505.10.1 Top and Bottom Extension at Ramps. Ramp handrails shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or floor, or shall be continuous to the handrail of an adjacent ramp run.

505.10.2 Top Extension at Stairs. At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beginning directly above the landing nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.

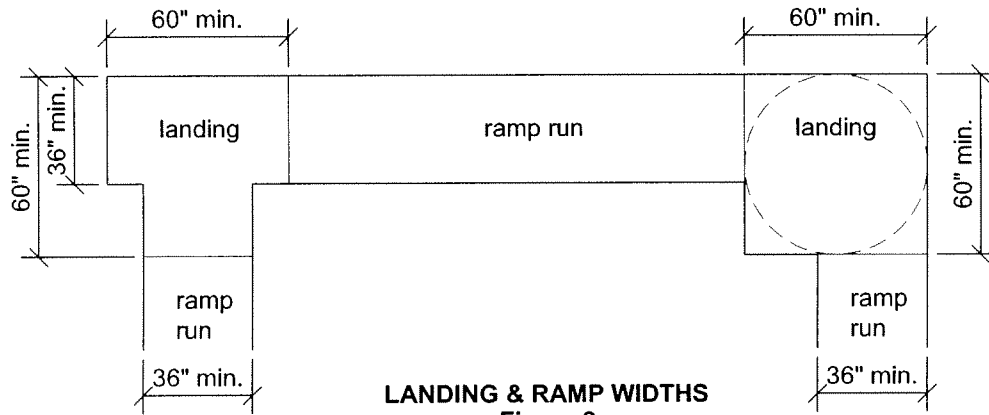
505.10.3 Bottom Extension at Stairs. At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance equal to one tread depth beyond the bottom tread nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.

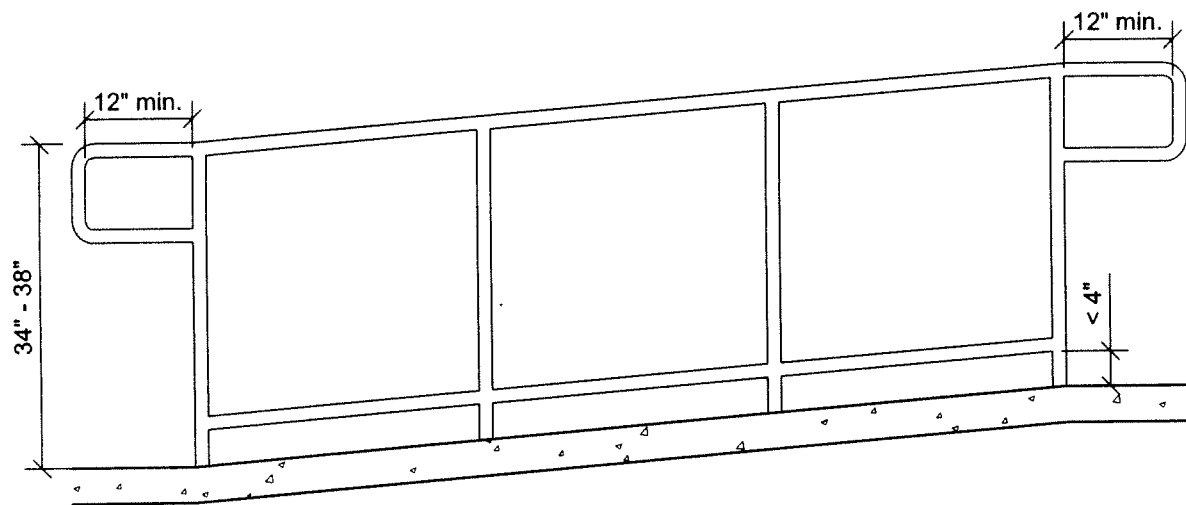
July, 2008

Ramps and Landings



EDGE PROTECTION
Figure 1





RAMP HANDRAIL
Figure 3
(shown with edge protection
detailed in Figure 1.a., page 2)