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RAMPS

1002 – DEFINITIONS

Michigan Building Code/2006

Ramp – A walking surface that has a running slope steeper than 1:20 (5% slope).

1010.1 – RAMPS

Michigan Building Code/2006

The requirements of this code section apply to ramps used as a component of a means of egress.

EXCEPTIONS:

1. Other than ramps that are a part of an accessible route providing access in accordance with MBC Sections 1108.2 through 1108.2.3 and 1108.2.5, ramped aisles within assembly rooms or spaces must comply with the requirements of MBC Section 1025.11.
2. Curb ramps must comply with ICC/ANSI A117.1.
3. Vehicle ramps in parking garages for pedestrian exit access are not required to comply with MBC Sections 1010.3 through 1010.9 when they are not part of an accessible route serving accessible parking spaces, other required accessible element, or part of an accessible means of egress.

1010.2 – RAMP SLOPE

Michigan Building Code/2006

Ramps used as part of a required means of egress must have a running slope no steeper than 1:12 (8% slope). The slope of other pedestrian ramps must not be steeper than 1:8 (12½%). Ramp slope requirements for accessibility would be contained in ICC/ANSI A117.1, Section 405.2.

EXCEPTION:

The slope of an aisle ramp in Group A occupancies must comply with MBC Section 1025.11.

1010.3 – RAMP CROSS SLOPE

Michigan Building Code/2006

The slope measured perpendicular to the direction of travel of a ramp is not to be steeper than 1:48 (2% slope).

1010.4 – RAMP VERTICAL RISE

Michigan Building Code/2006

The maximum rise of any ramp run is 30”.

1010.5 – MINIMUM RAMP DIMENSIONS

Michigan Building Code/2006

The minimum dimensions of a means of egress ramp are to comply with MBC Sections 1010.5.1 through 1010.5.3.

1010.5.1 – RAMP WIDTH

Michigan Building Code/2006

The minimum width of a required means of egress ramp is to be not less than that required for corridors by MBC Section 1017.2. The minimum clear width of a ramp and the clear width between the ramp handrails, if provided, is 36” minimum.

1010.5.2 – RAMP HEADROOM

Michigan Building Code/2006

The minimum headroom in all parts of a required means of egress ramp is not to be less than 80”.

1010.5.3 – RAMP RESTRICTIONS

Michigan Building Code/2006

Means of egress ramps are not to reduce in width in the direction of egress travel. Projections into the required ramp and landing widths are not permitted. Doors opening onto a landing are not to reduce the clear ramp width to less than 42”.

1010.6 – RAMP LANDINGS

Michigan Building Code/2006

Ramps are to have landings at the bottom and top of each ramp, points of turning, entrance, exits, and at doors. Landings must comply with MBC Sections 1010.6.1 through 1010.6.5.

1010.6.1 – LANDING SLOPE

Michigan Building Code/2006

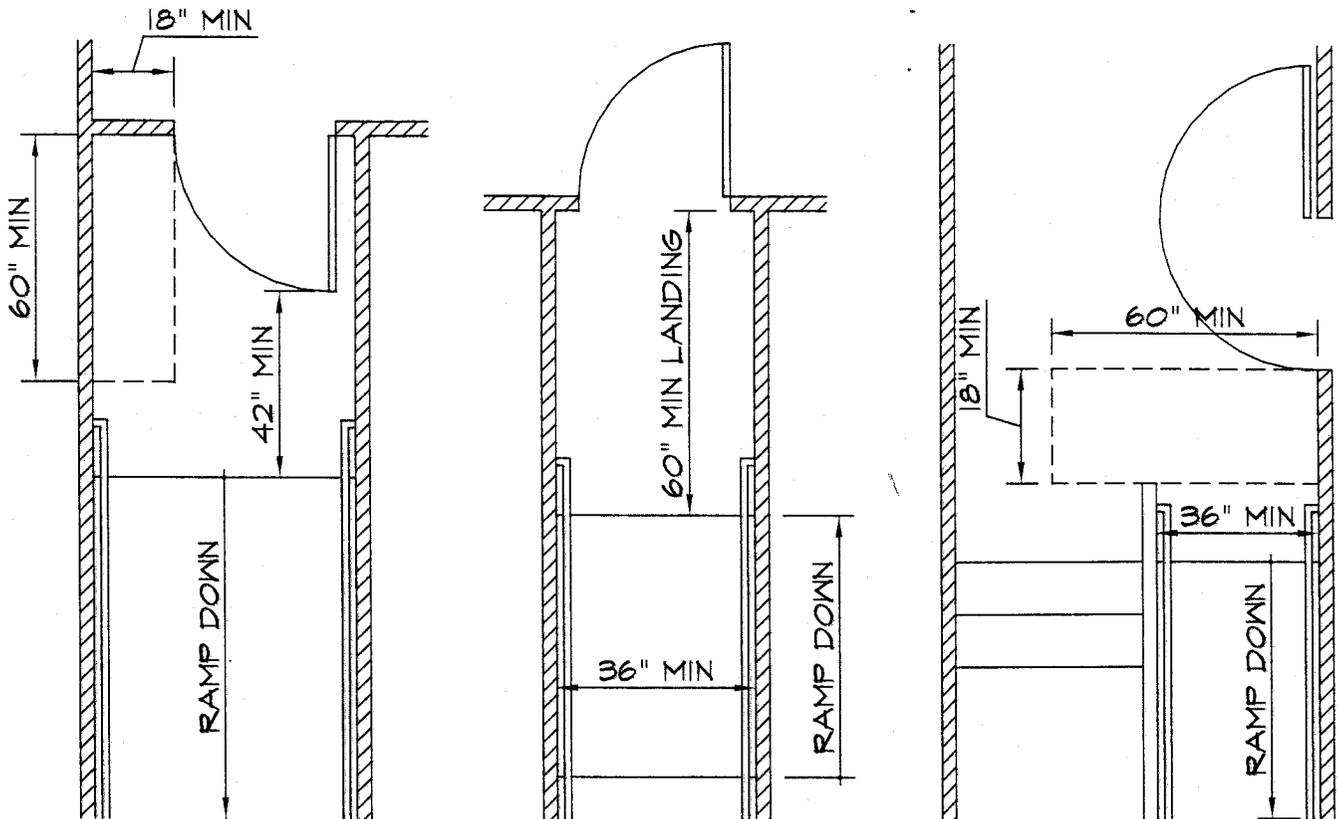
Ramp landings must have a slope no steeper than 1:48 (2% slope) in any direction. Changes in the level of the landing are not permitted.

1010.6.2 – LANDING WIDTH

Michigan Building Code/2006

A ramp landing must be at least as wide as the widest ramp run adjoining the landing.

FIGURE 1010.6 - RAMP LANDINGS



1010.6.3 - RAMP LANDING LENGTH

Michigan Building Code/2006

The length of a ramp landing must be 60" minimum.

EXCEPTIONS:

1. Ramp landings in non-accessible Group R-2 and R-3 individual dwelling units, as applicable in MBC Section 101.2, are allowed to be 36" minimum.
2. When a ramp is not part of an accessible route, the length of the landing is not required to be more than 48" in the direction of travel.

1010.6.4 - CHANGE OF DIRECTION

Michigan Building Code/2006

When changes in the direction of ramp travel occur at landings provided between ramp runs, the landing size must be 60" by 60" minimum.

EXCEPTION:

Ramp landings in non-accessible Group R-2 and R-3 individual dwelling units are permitted to be 36" minimum by 36" minimum.

1010.6.5 - ADJACENT DOORWAYS

Michigan Building Code/2006

Where doorways are located adjacent to a ramp landing, maneuvering clearances required by ICC/ANSI A117.1 are allowed to overlap the required landing area.

1010.7 – RAMP CONSTRUCTION

Michigan Building Code/2006

All ramps must be built of materials consistent with the types allowed for the type of construction of the building; except that wood handrails are allowed for all types of construction. Ramps used as an exit must conform to the applicable requirements of MBC Sections 1020.1 through 1020.1.3 for exit enclosures.

1010.7.1 – RAMP SURFACE

Michigan Building Code/2006

Ramp surfaces must be of slip-resistant materials that are securely attached.

1010.7.2 – OUTDOOR CONDITIONS

Michigan Building Code/2006

Outdoor ramps and approaches to ramps must be designed so that water will not accumulate on walking surfaces.

1010.8 – RAMP HANDRAILS

Michigan Building Code/2006

A ramp with a rise greater than 6" must have handrails on both sides in compliance with MBC Section 1009.11.

1010.9 – RAMP EDGE PROTECTION

Michigan Building Code/2006

Ramp edge protection in compliance with MBC Section 1010.9.1 or 1010.9.2 must be provided on each side of ramp runs and at each side of ramp landings.

EXCEPTIONS:

1. Ramp edge protection is not required on ramps that are not required to have handrails, provided they have flared sides that comply with the ICC/ANSI A117.1 curb ramp provisions.
2. Ramp edge protection is not required on the sides of ramp landings that serve an adjoining ramp run or stairway.
3. Ramp edge protection is not required on the sides of ramp landings having a vertical drop off of not more than 1/2" within 10" horizontally of the required landing area.

1010.9.1 – RAMP CURB, RAIL, WALL OR BARRIER

Michigan Building Code/2006

A curb, rail, wall or barrier must be provided to prevent the passage of a 4" diameter sphere, where any portion of the sphere is within 4" of the ground or floor surface.

1010.9.2 – EXTENDED FLOOR OR GROUND LEVEL

Michigan Building Code/2006

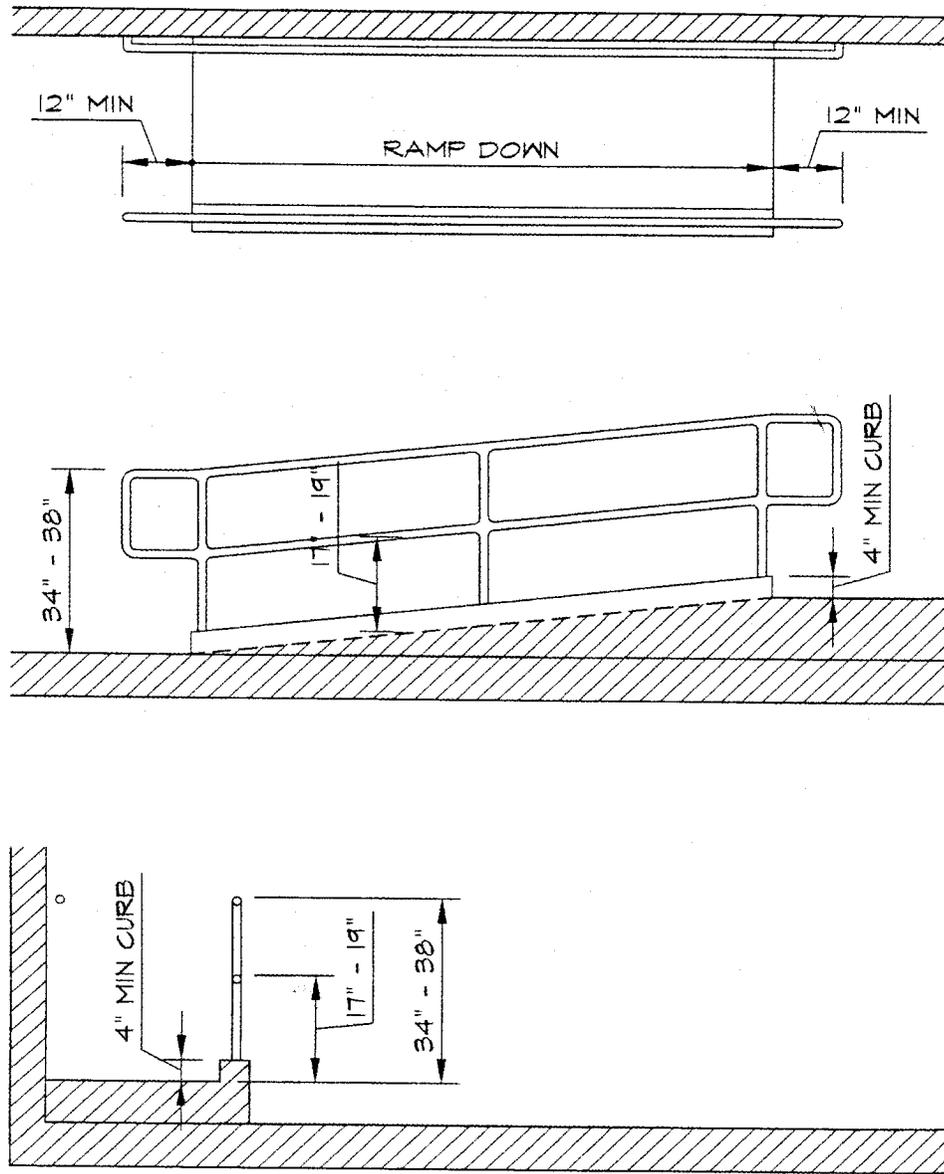
The floor or ground surface of a ramp run or landing must extend 12" minimum beyond the inside face of the handrail in compliance with MBC Section 1012.

1010.10 – RAMP GUARDS

Michigan Building Code/2006

Guards must be provided where required by MBC Section 1013 and must be constructed in compliance with MBC Section 1013. MBC requires guards where the ramp or landing surface is more than 30" above the adjacent floor or grade below.

FIGURE 1010.8 - RAMP GUARDS AND HANDRAILS



405 - RAMPS

405.1 - GENERAL REQUIREMENTS

ICC/ANSI A117.1-2003

A walking surface on an accessible route with a running slope steeper than 1:20 is considered a ramp and must comply with ICC/ANSI A117.1, Section 405.

405.2 - RAMP SLOPE

ICC/ANSI A117.1-2003

Ramp runs must have a running slope no steeper than 1:12.

EXCEPTION:

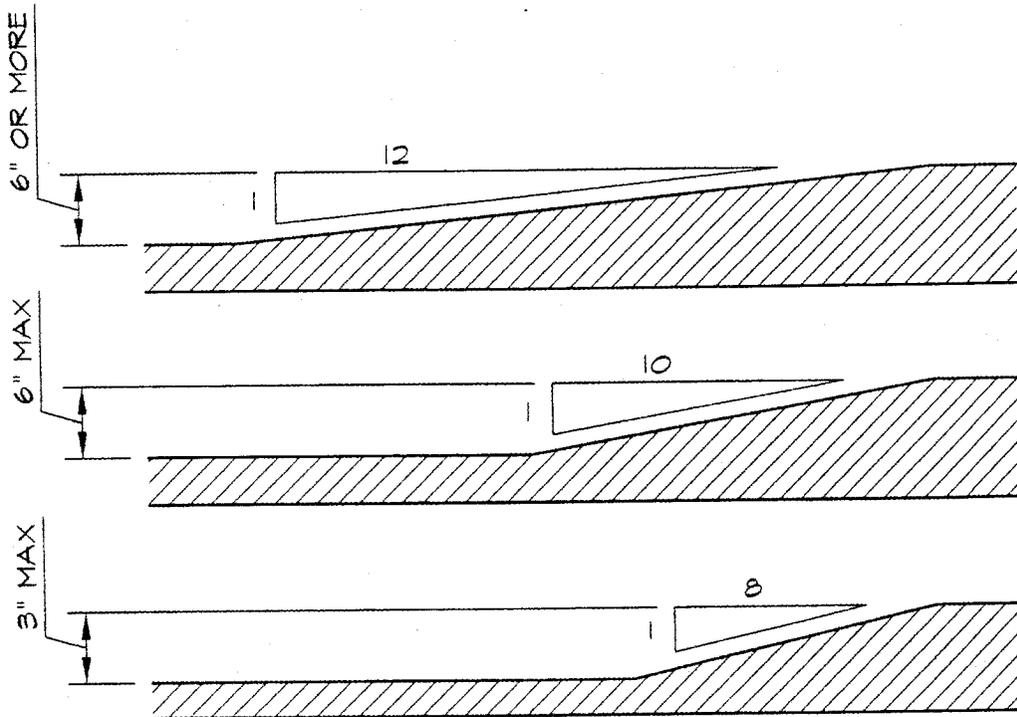
A ramp in or on an existing building or facility is permitted to have a slope steeper than 1:12 in compliance with ICC/ANSI Table 405.2, where such slopes are necessitated by space limitations.

TABLE 405.2 – ALLOWABLE RAMP DIMENSIONS FOR CONSTRUCTION IN EXISTING SITES, BUILDINGS, AND FACILITIES

Ramp Slope(1)	Maximum Rise
Steeper than 1:10 but not steeper than 1:8	3"
Steeper than 1:12 but not steeper than 1:10	6"

(1) A ramp slope steeper than 1:8 is not permitted.

FIGURE 405.2 – RAMP SLOPES



405.3 – RAMP CROSS SLOPE

ICC/ANSI A117.1-2003

The cross slope of a ramp run must be no steeper than 1:48.

405.4 – FLOOR AND GROUND SURFACES

ICC/ANSI A117.1-2003

Floor and ground surfaces of a ramp run must comply with ICC/ANSI A117.1, Section 302.

405.5 – RAMP CLEAR WIDTH

ICC/ANSI A117.1-2003

The clear width of a ramp run must be a minimum 36". When handrails are provided along the ramp run, the clear width is to be measured between the handrails.

405.6 – RAMP RISE

ICC/ANSI A117.1-2003

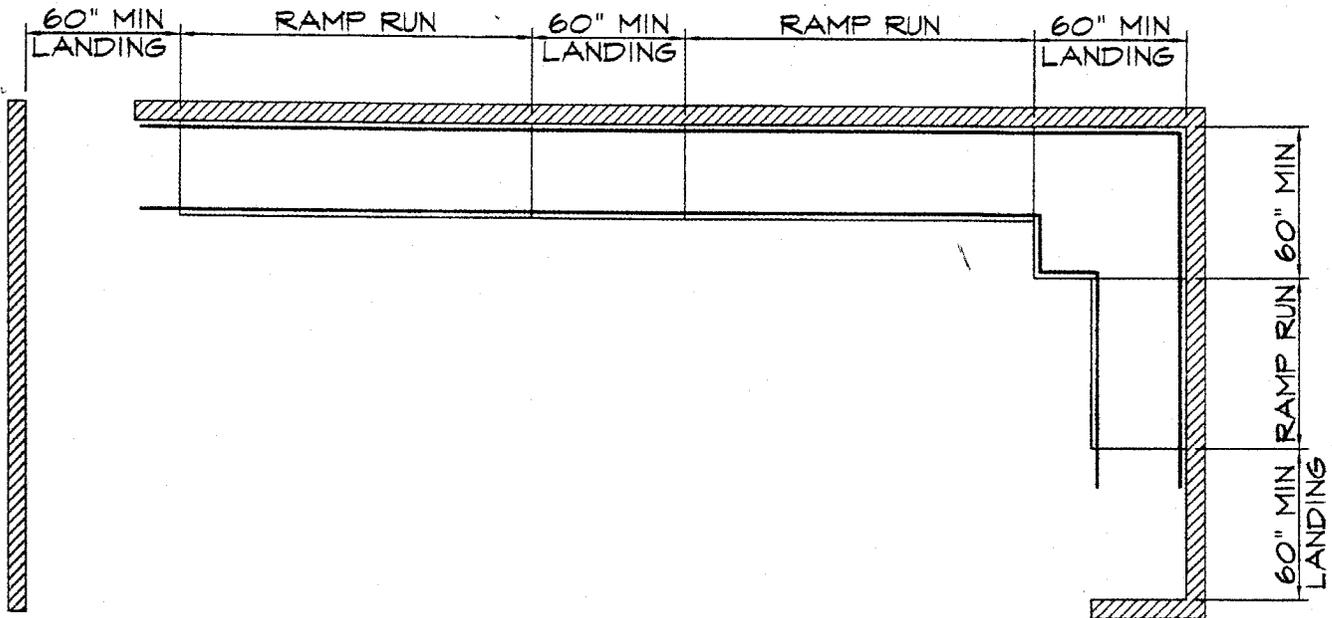
The rise of any ramp run is limited to a maximum 30".

405.7 – RAMP LANDINGS

ICC/ANSI A117.1-2003

A ramp must have landings at the bottom and top of each run. Landings must comply with ICC/ANSI A117.1, Section 405.7.

FIGURE 405.7 – RAMP LANDINGS

**405.7.1 – LANDING SLOPE**

ICC/ANSI A117.1-2003

The slope of ramp landings must be no steeper than 1:48 and comply with ICC/ANSI A117.1, Section 302.

405.7.2 – LANDING WIDTH

ICC/ANSI A117.1-2003

The clear width of landings must be at least as wide as the widest ramp run leading to the landing.

405.7.3 – LANDING LENGTH

ICC/ANSI A117.1-2003

The length of a ramp landing must be a minimum 60" clear.

405.7.4 – CHANGE IN RAMP DIRECTION

ICC/ANSI A117.1-2003

A ramp that has a change in direction at a landing must be sized to provide a turning space in compliance with ICC/ANSI A117.1, Section 304.3.

405.7.5 – DOORWAYS

ICC/ANSI A117.1-2003

Where a doorway is adjacent to a ramp landing, maneuvering clearances as required by ICC/ANSI A117.1, Sections 404.2.3 and 404.3.2 are permitted to overlap the landing area. When doors subject to locking that are adjacent to a ramp landing, the landings must be sized to provide a turning space in compliance with ICC/ANSI A117.1, Section 304.3.

405.8 – RAMP HANDRAILS

ICC/ANSI A117.1-2003

A ramp with a rise greater than 6" must have handrails in compliance with ICC/ANSI A117.1, Section 505. Handrails are not to reduce the required clearances of a ramp run or landing.

405.9 – RAMP EDGE PROTECTION

ICC/ANSI A117.1-2003

Ramp edge protection complying with ICC/ANSI A117.1, Section 405.9.1 or 405.9.2 is required to be provided on each side of ramp runs and at each side of ramp landings.

EXCEPTIONS:

1. Ramps not required to have handrails when sides complying with ICC/ANSI A117.1, Section 406.3 are provided.
2. Sides of ramp landings serving an adjacent ramp run or stairway.
3. Sides of ramp landings with a vertical drop off of 1/2" maximum within 10" horizontally of the minimum landing area.

405.9.1 – EXTENDED FLOOR AND GROUND SURFACES

ICC/ANSI A117.1-2003

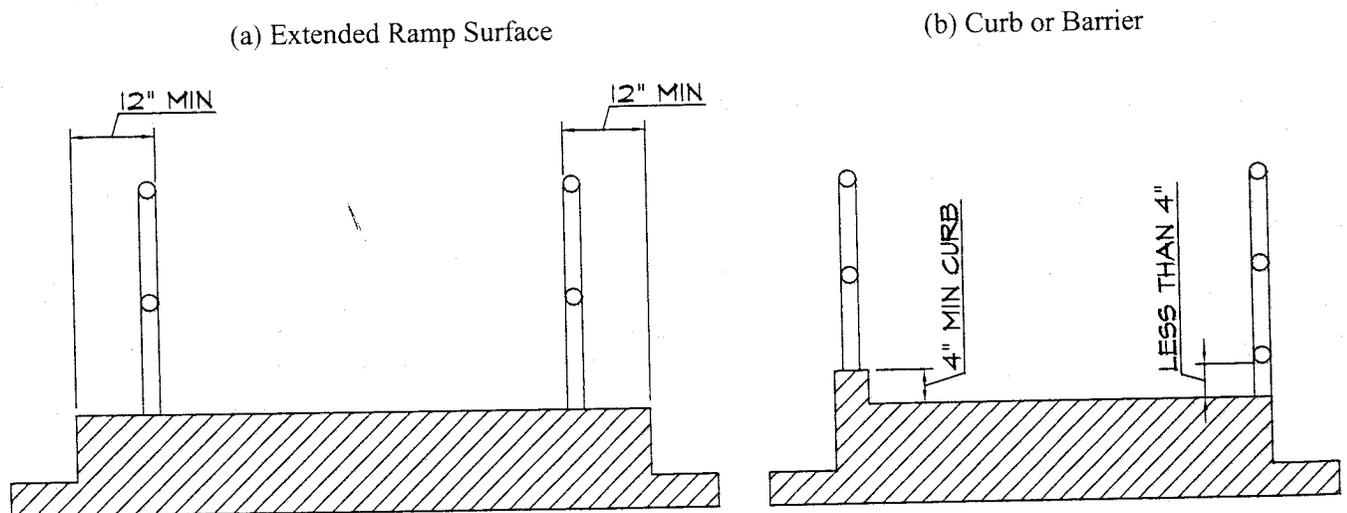
The floor or ground surface of a ramp run or landing must extend a minimum of 12" beyond the inside face of a railing complying with ICC/ANSI A117.1, Section 505.

405.9.2 – CURB OR RAMP BARRIER

ICC/ANSI A117.1-2003

A curb or ramp barrier must be provided that prevents the passage of a 4" diameter sphere when any portion of the sphere is within 4" of the floor.

FIGURE 405.9 – RAMP EDGE PROTECTION



405.10 – WET CONDITIONS

ICC/ANSI A117.1-2003

Landings subject to wet conditions must be designed to prevent the accumulation of water.