E1-24 Part III

IWUIC: A103.2, TABLE C101.1, G101.3.2

Proposed Change as Submitted

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org); Andrew Bevis, Chair, representing Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org); Robert Marshall, representing FCAC (fcac@iccsafe.org)

2024 International Wildland Urban Interface Code

Revise as follows:

A103.2 ~~Trespassing on posted private property~~ Restricted areas. Where the *code official* determines that a specific area within a *wildland-urban interface area* presents an exceptional and continuing fire danger because of the density of natural growth, difficulty of terrain, proximity to structures or ~~accessibility~~ open to the public, such areas shall be restricted or closed until changed conditions warrant termination of such restriction or closure. Such areas shall be posted in accordance with Section A103.2.1.

TABLE C101.1 FIRE HAZARD SEVERITY FORM

Portions of table not shown remain unchanged.

A. Subdivision Design Points	
3. ~~Accessibility~~ Vehicle access	
Road grade 5% or less	1___
Road grade more than 5%	3___

G101.3.2 Alternative water supply systems for exposure protection. Pools and spas are often offered as an alternative water source for fire departments. These water sources must be reliable and able to be accessed to be of any use by fire protection forces. ~~Accessibility~~ Access means that the fire department ~~must be~~ is able to withdraw the water without having to go through extraordinary measures such as knocking down fences or having to set up drafting situations. Designs have been created to put liquid- or gas-fueled pumps or gravity valves on pools and spas to allow fire departments to access these water systems. A key vulnerability to the use of these alternative water systems is loss of electrical power. When the reliability of a water system depends on external power sources, it cannot be relied upon by fire fighters to be available in a worst-case scenario.

Reason: Because the term ‘accessible’ is most commonly understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with other words, defined terms or phrases that are not attributed to requiring access for the physically disabled. Many of the codes use the defined term ‘access (to)’ or ‘ready access (to)’ for access by maintenance and service personnel or fire departments. This proposal provides clarity and consistency in the remaining codes where those coordination modifications missed or came in as part of new code changes.
This a correlation piece for proposals over the last couple of cycles. This effort was started by the CACs in 2015/16 code change cycle, and continued in 2018/19. This proposal is to provide coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2 . G1-21 Part 1 was disapproved; however Part 2 through 7 were approved.

Correlative pieces will be entered in Group B for parts of IRC, IPMC, IZC and IECC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC), the ICC Fire Code Action Committee (FCAC) and ICC Plumbing Mechanical Gas Code Action Committee (PMGCAC)

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2023 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC webpage.

Insert FCAC paragraph

PMGCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned

International Codes or portions thereof. In 2023 PMGCAC has held 26 virtual meetings open to any interested party. In addition, there were several virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the PMGCAC website at PMGCAC.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This is a coordination of terms with no changes to construction requirements. See reason statement for additional information on coordination with previous proposals.

E1-24 Part III

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: The committee stated that the reasons for the disapproval of the proposal were: There was disagreement over the deletion and replacement of the existing word “accessibility” in Section A103.2 and that the word replacement needs to be determined outside of the hearings. (Vote: 12-1)

E1-24 Part III

Public Hearing Results (CAH2)

Committee Action: **None-PC (Public Comment)**

Committee Reason: Comments discussed but no new action was taken by the committee. See Reason statement from CAH #1 action.

E1-24 Part III

Individual Consideration Agenda

Public Comment GROVE-PC1:

IWUIC: A103.2

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests As Modified by Public Comment (PCH)

Replace as follows:

2024 International Wildland Urban Interface Code

Revise as follows:

A103.2 Trespassing on posted private property. Where the *code official* determines that a specific area within a *wildland-urban interface area* presents an exceptional and continuing fire danger because of the density of natural growth, difficulty of terrain, proximity

to structures or ~~accessibility to~~ that can be accessed by the public, such areas shall be restricted or closed until changed conditions warrant termination of such restriction or closure. Such areas shall be posted in accordance with Section A103.2.1.

Reason: This is one of two public comments for this proposal. The disapprovals in CAH1 and CAH2 were all in regard to this specific section, so we wish to address is separately.

The intent of this proposal is to remove the word 'accessible' so that it is not misinterpreted to have this related to access for persons withe disabilities instead of the general public. In CAH1 the committee did not like 'open to', therefore, CAH2 and this public comment offer the alternative 'with access by'. Questions during CAH2 from the committee were related to the application of this section to private property in a wild-fire area. That is outside the scope of this change, therefore that concern cannot be addressed by this proposal. While titles are information only, the suggested change to the title in CAH2 may have sparked the concerns, so we have removed that from this proposal.

We respectfully ask the membership to follow the approval of similar changes throughout the codes approved both last cycle and in Parts 1, 2, 4 and 5 of this cycle, and approve this public comment.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This is a clarification of application. It is not intended to change any requirments.

E1-24 Part III

IWUIC: A103.2, TABLE C101.1, G101.3.2

Proposed Change as Submitted

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org); Andrew Bevis, Chair, representing Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org); Robert Marshall, representing FCAC (fcac@iccsafe.org)

2024 International Wildland Urban Interface Code

Revise as follows:

A103.2 ~~Trespassing on posted private property~~ Restricted areas. Where the *code official* determines that a specific area within a *wildland-urban interface area* presents an exceptional and continuing fire danger because of the density of natural growth, difficulty of terrain, proximity to structures or ~~accessibility~~ open to the public, such areas shall be restricted or closed until changed conditions warrant termination of such restriction or closure. Such areas shall be posted in accordance with Section A103.2.1.

TABLE C101.1 FIRE HAZARD SEVERITY FORM

Portions of table not shown remain unchanged.

A. Subdivision Design Points	
3. ~~Accessibility~~ Vehicle access	
Road grade 5% or less	1___
Road grade more than 5%	3___

G101.3.2 Alternative water supply systems for exposure protection. Pools and spas are often offered as an alternative water source for fire departments. These water sources must be reliable and able to be accessed to be of any use by fire protection forces. ~~Accessibility~~ Access means that the fire department ~~must be~~ is able to withdraw the water without having to go through extraordinary measures such as knocking down fences or having to set up drafting situations. Designs have been created to put liquid- or gas-fueled pumps or gravity valves on pools and spas to allow fire departments to access these water systems. A key vulnerability to the use of these alternative water systems is loss of electrical power. When the reliability of a water system depends on external power sources, it cannot be relied upon by fire fighters to be available in a worst-case scenario.

Reason: Because the term ‘accessible’ is most commonly understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with other words, defined terms or phrases that are not attributed to requiring access for the physically disabled. Many of the codes use the defined term ‘access (to)’ or ‘ready access (to)’ for access by maintenance and service personnel or fire departments. This proposal provides clarity and consistency in the remaining codes where those coordination modifications missed or came in as part of new code changes.
This a correlation piece for proposals over the last couple of cycles. This effort was started by the CACs in 2015/16 code change cycle, and continued in 2018/19. This proposal is to provide coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2 . G1-21 Part 1 was disapproved; however Part 2 through 7 were approved.

Correlative pieces will be entered in Group B for parts of IRC, IPMC, IZC and IECC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC), the ICC Fire Code Action Committee (FCAC) and ICC Plumbing Mechanical Gas Code Action Committee (PMGCAC)

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2023 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC webpage.

Insert FCAC paragraph

PMGCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned

International Codes or portions thereof. In 2023 PMGCAC has held 26 virtual meetings open to any interested party. In addition, there were several virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the PMGCAC website at PMGCAC.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This is a coordination of terms with no changes to construction requirements. See reason statement for additional information on coordination with previous proposals.

E1-24 Part III

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: The committee stated that the reasons for the disapproval of the proposal were: There was disagreement over the deletion and replacement of the existing word “accessibility” in Section A103.2 and that the word replacement needs to be determined outside of the hearings. (Vote: 12-1)

E1-24 Part III

Public Hearing Results (CAH2)

Committee Action: **None-PC (Public Comment)**

Committee Reason: Comments discussed but no new action was taken by the committee. See Reason statement from CAH #1 action.

E1-24 Part III

Individual Consideration Agenda

Public Comment GROVE-PC2:

IWUIC: TABLE C101.1, G101.3.2

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests As Modified by Public Comment (PCH)

Replace as follows:

2024 International Wildland Urban Interface Code

Revise as follows:

TABLE C101.1 FIRE HAZARD SEVERITY FORM

A. Subdivision Design Points	

1. Ingress/Egress	
Two or more primary roads	1___
One road	3___
One-way road in, one-way road out	5___
2. Width of Primary Road	
20 feet (6096 mm) or more	1___
Less than 20 feet (6096 mm)	3___
3. ~~Accessibility~~ Vehicle access	
Road grade 5% or less	1___
Road grade more than 5%	3___
4. Secondary Road Terminus	
Loop roads, cul-de-sacs with an outside turning radius of 45 feet (13 716 mm) or greater	1___
Cul-de-sac turnaround	2___
Dead-end roads 200 feet (60 960 mm) or less in length	3___
Dead-end roads greater than 200 feet (60 960 mm) in length	5___
5. Street Signs	
Present	1___
Not present	3___
B. Vegetation (IWUIC Definitions)	
1. Fuel Types	
Light	1___
Medium	5___
Heavy	10___
2. Defensible Space	
70% or more of site	1___
30% or more, but less than 70% of site	10___
Less than 30% of site	20___
C. Topography	
8% or less	1___
More than 8%, but less than 20%	4___
20% or more, but less than 30%	7___
30% or more	10___
D. Roofing Material	
Class A Fire Rated	1___
Class B Fire Rated	5___
Class C Fire Rated	10___
Nonrated	20___
E. Fire Protection—Water Source	
500 GPM (1892.5 L/min) hydrant within 1,000 feet (304.8 m)	1___
Hydrant farther than 1,000 feet (304.8 m) or draft site	2___
Water source 20 min. or less, round trip	5___
Water source farther than 20 min., and 45 min. or less, round trip	7___
Water source farther than 45 min., round trip	10___
F. Existing Building Construction Materials	
Noncombustible siding/deck	1___
Noncombustible siding/combustible deck	5___
Combustible siding and deck	10___
G. Utilities (gas and/or electric)	
All underground utilities	1___
One underground, one above ground	3___
All above ground	5___
Total for Subdivision	
Moderate Hazard	40–59
High Hazard	60–74
Extreme Hazard	75+

G101.3.2 Alternative water supply systems for exposure protection. Pools and spas are often offered as an alternative water source for fire departments. These water sources must be reliable and able to be accessed to be of any use by fire protection forces. ~~Accessibility~~ Access means that the fire department ~~must be~~ is able to withdraw the water without having to go through extraordinary

measures such as knocking down fences or having to set up drafting situations. Designs have been created to put liquid- or gas-fueled pumps or gravity valves on pools and spas to allow fire departments to access these water systems. A key vulnerability to the use of these alternative water systems is loss of electrical power. When the reliability of a water system depends on external power sources, it cannot be relied upon by fire fighters to be available in a worst-case scenario.

Reason: This is one of two public comments for this proposal. The disapprovals in CAH1 and CAH2 were all in regard to the change to A103.2, so we wish to address these changes separately.

The intent of this proposal is to remove the word 'accessible' so that it is not misinterpreted to have this related to access for persons withe disabilities instead of access for the fire department.

We respectfully ask the membership to follow the approval of similar changes throughout the codes approved both last cycle and in Parts 1, 2, 4 and 5 of this cycle, and approve this public comment.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This is a clarification of application. It is not intended to change any requirments.

E18-24

IBC: 1006.2.2.5; IFC: [BE] 1006.2.2.5

Proposed Change as Submitted

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org)

2024 International Building Code

Revise as follows:

1006.2.2.5 Vehicular ramps. Vehicular ramps intended only for vehicle traffic shall not be considered as an *exit access ramp* ~~unless pedestrian *facilities* are~~ except where a walkway used exclusively as a pedestrian trafficway is provided.

2024 International Fire Code

Revise as follows:

[BE] 1006.2.2.5 Vehicular ramps. Vehicular ramps intended only for vehicle traffic shall not be considered as an *exit access ramp* ~~unless pedestrian *facilities* are~~ except where a walkway used exclusively as a pedestrian trafficway is provided.

Reason: Are vehicular ramps the driveways and crossovers for cars only with no parking on either side; or are they wherever a car drives in a parking garage. Pedestrian walkways are used for bridges between buildings in Chapter 31, so we did not want to use the defined term, but the words in the defined term would add clarity to this requirement. The term “pedestrian facilities” is not defined and is not clear.

This proposal is submitted by the ICC Building Code Action Committee (BCAC).

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2023 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC webpage.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This is a clarification of requirements for pedestrians on vehicular ramps. There are no changes to construction requirements.

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: The change adds confusion. Does a pedestrian trafficway require a sidewalk or barriers along the vehicle ramp? If you have a pedestrian route, this is not longer a "vehicular ramp only for vehicle traffic." (Vote: 14-0)

Public Hearing Results (CAH2)

Committee Action: **None-PC (Public Comment)**

Committee Reason: Comments discussed but no new action was taken by the committee. See Reason statement from CAH #1 action.

E18-24

Individual Consideration Agenda

Public Comment GROVE-PC1:

IBC: 406.4.3, 1006.2.2.5; IFC: [BE] 1006.2.2.5

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests As Modified by Public Comment (PCH)

Replace as follows:

2024 International Building Code

Revise as follows:

406.4.3 Ramps. Vehicle ramps without parking, and intended for vehicular traffic, shall not be considered as required *exits* unless a demarcated walkway for pedestrian traffic is ~~*facilities* are~~ provided. Vehicle ramps that are utilized for vertical circulation as well as for parking shall not exceed a slope of 1 unit vertical in 15 units horizontal (6.67-percent slope).

1006.2.2.5 Vehicular ramps. Vehicular ramps without parking, and intended for vehicular traffic, shall not be considered as ~~an *exit access ramp*~~ required *exits* unless a demarcated walkway for pedestrian traffic is ~~*facilities* are~~ provided.

2024 International Fire Code

Revise as follows:

[BE] 1006.2.2.5 Vehicular ramps. Vehicular ramps without parking, and intended for vehicular traffic, shall not be considered as ~~an *exit access ramp*~~ required *exits* unless a demarcated walkway for pedestrian traffic is ~~*facilities* are~~ provided.

Reason: The intent of this proposal is clarification and coordination. The current language is vague and widely misinterpreted. The proposed language clarifies what is required now, and will provide flexibility for the code official in it's application. The requirement for the walkway to be demarcated is added to clarify the need for separation but leaves the method of such separation open (barriers, marking, sidewalks, curbs, etc.). The term demarcated is already used in 1016.2 (item 6, exception 2).

Currently there is confusion on what is meant by 'vehicular ramp'. Based on Section 406.4.3, it is our interpretation that these are NOT vehicular ramps with parking on either side; they wherever a car drives parking garage or the circular ramps that cars use to move between floor levels in flat floor parking garages. In order to allow these ramps to be part of the means of egress (exit access), there should be a marked pedestrian path. We do not feel that this needs to be a raised sidewalk.Discussion and floor modifications brought up during CAH1 and CAH2 are incorporated into this public comment along with the coordination with Section 406.

Examples of the type of ramp are -

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This change is a clarification of existing requirements. There are no changes to construction requirements.

E35-24

IBC: 1008.3; IFC: [BE] 1008.3

Proposed Change as Submitted

Proponents: Lucas Pump, City of Cedar Rapids, representing Self (l.pump@cedar-rapids.org)

2024 International Building Code

Revise as follows:

1008.3 Illumination required by an emergency electrical system. An emergency electrical system shall be provided to automatically illuminate the following areas in the event of a power supply failure:

1. In rooms or spaces that require two or more exits or access to exits:
   1.1. *Aisles*.
   1.2. *Corridors*.
   1.3. *Exit access stairways* and *ramps*.
2. In *buildings* that require two or more exits or access to exits:
   2.1. Interior *exit access stairways* and *ramps*.
   2.2. Interior and *exterior exit stairways* and *ramps*.
   2.3. Exit passageways.
   2.4. Vestibules and areas on the level of discharge used for *exit discharge* in accordance with Section 1028.2.
   2.5. Exterior landings as required by Section 1010.1.5 for exit doorways that lead directly to the *exit discharge*.
3. In other rooms and spaces:
   3.1. Electrical equipment rooms.
   3.2. *Fire command centers*.
   3.3. Fire pump rooms.
   3.4. Generator rooms.
   3.5. Public restrooms ~~with and area greater then 300 square feet (27.87 m^2).~~

2024 International Fire Code

Revise as follows:

[BE] 1008.3 Illumination required by an emergency electrical system. An emergency electrical system shall be provided to automatically illuminate the following areas in the event of a power supply failure:

1. In rooms or spaces that require two or more *exits* or access to *exits*:
   1.1. *Aisles*.
   1.2. *Corridors*.
   1.3. *Exit access stairways* and *ramps*.

2. In buildings that require two or more *exits* or access to *exits*:
   2.1. *Interior exit access stairways* and *ramps*.
   2.2. *Interior* and *exterior exit stairways* and *ramps*.
   2.3. *Exit passageways*.
   2.4. Vestibules and areas on the level of discharge used for *exit discharge* in accordance with Section 1028.2.
   2.5. Exterior landings as required by Section 1010.1.5 for exit doorways that lead directly to the *exit discharge*.
3. In other rooms and spaces:
   3.1. Electrical equipment rooms.
   3.2. Fire command centers.
   3.3. Fire pump rooms.
   3.4. Generator rooms.
   3.5. Public restrooms ~~with an area greater than 300 square feet (27.87 m^2).~~

Reason: The deleting of this text of the square footage would require emergency lighting in all public restrooms. Public restrooms typically do not contain natural lighting, and when the electrical power goes out, these restrooms become completely black. Furthermore, a public restroom is usually not a familiar place, therefore safely exiting these spaces can be very difficult in an emergency situation.

Cost Impact: Increase

Estimated Immediate Cost Impact:

The cost increase would be negligible because the average emergency light cost is between $20-$60 USD.

Estimated Immediate Cost Impact Justification (methodology and variables):

This would increase the cost of construction as emergency lighting would be required in all public restrooms, although the cost increase would be negligible because the average emergency light cost is between $20-$60 USD.

Estimated Life Cycle Cost Impact:

$20-$60 USD per new public restroom

Estimated Life Cycle Cost Impact Justification (methodology and variables):

Safety of occupants of the building

E35-24

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: The original requirement was for multi-stall toilet rooms. Why is emergency lighting required in single occupant restroom where there might not be emergency lighting required in the space the toilet room was located in? As written this would require emergency lighting on individual stalls where the compartments extended floor to ceiling - that is a very high cost with minimal gain. (Vote: 11-3)

E35-24

Public Hearing Results (CAH2)

Committee Action: **As Modified by Committee (AMC2)**

Approved Comments: Comment 1

Committee Modification:
Modify the comment as follows:
2024 International Building Code

1008.3 Illumination required by an emergency electrical system.
An emergency electrical system shall be provided to automatically illuminate the following areas in the event of a power supply failure:

1. In rooms or spaces that require two or more exits or access to exits:
   1.1. *Aisles*.
   1.2. *Corridors*.
   1.3. *Exit access stairways* and *ramps*.
2. In *buildings* that require two or more exits or access to exits:
   2.1. Interior *exit access stairways* and *ramps*.
   2.2. Interior and *exterior exit stairways* and *ramps*.
   2.3. Exit passageways.
   2.4. Vestibules and areas on the level of discharge used for *exit discharge* in accordance with Section 1028.2.
   2.5. Exterior landings as required by Section 1010.1.5 for exit doorways that lead directly to the *exit discharge*.
3. In other rooms and spaces:
   3.1. Electrical equipment rooms.
   3.2. *Fire command centers*.
   3.3. Fire pump rooms.
   3.4. Generator rooms.
   3.5. Common areas of ~~multi-stall~~ multi-user toilet and bathing rooms in public restrooms.

2024 International Fire Code

[BE] 1008.3 Illumination required by an emergency electrical system.
An emergency electrical system shall be provided to automatically illuminate the following areas in the event of a power supply failure:

1. In rooms or spaces that require two or more *exits* or access to *exits*:
   1.1. *Aisles*.
   1.2. *Corridors*.
   1.3. *Exit access stairways* and *ramps*.

2. In buildings that require two or more *exits* or access to *exits*:
    2.1. *Interior exit access stairways* and *ramps*.
    2.2. *Interior* and *exterior exit stairways* and *ramps*.
    2.3. *Exit passageways*.
    2.4. Vestibules and areas on the level of discharge used for *exit discharge* in accordance with Section 1028.2.
    2.5. Exterior landings as required by Section 1010.1.5 for exit doorways that lead directly to the *exit discharge*.
3. In other rooms and spaces:
    3.1. Electrical equipment rooms.
    3.2. Fire command centers.
    3.3. Fire pump rooms.
    3.4. Generator rooms.
    3.5. Common areas of ~~multi-stall~~ multi-user toilet and bathing rooms in public restrooms.

Committee Reason: Floor modification Haupt 1 revised 'multi-stall' to 'multi-user' to clarify that this is for toilet rooms with mulitple fixtures; this is not intended to include family or assisted use toilet rooms. The committee added 'in public restrooms' to the end of the sentence to address the concerns raised during the discussion that removing 'public' could extend the application of this requirement to all toilet and bathing rooms.
The comment did address the committees concerns in the original proposal that this would require lighting in every stall. These rooms typically don't have windows and are ver dark; so lighting is needed for egress.

(Vote: 11-3)

E35-24

Individual Consideration Agenda

Public Comment GROVE-PC1:

IBC: 1008.3; IFC: [BE] 1008.3

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests As Modified by Public Comment (PCH)

Further modify as follows:

2024 International Building Code

Revise as follows:

1008.3 Illumination required by an emergency electrical system. An emergency electrical system shall be provided to automatically illuminate the following areas in the event of a power supply failure:

1. In rooms or spaces that require two or more exits or access to exits:
    1.1. *Aisles*.
    1.2. *Corridors*.
    1.3. *Exit access stairways* and *ramps*.
2. In *buildings* that require two or more exits or access to exits:
    2.1. Interior *exit access stairways* and *ramps*.
    2.2. Interior and *exterior exit stairways* and *ramps*.
    2.3. Exit passageways.
    2.4. Vestibules and areas on the level of discharge used for *exit discharge* in accordance with Section 1028.2.
    2.5. Exterior landings as required by Section 1010.1.5 for exit doorways that lead directly to the *exit discharge*.
3. In other rooms and spaces:
    3.1. Electrical equipment rooms.
    3.2. *Fire command centers*.
    3.3. Fire pump rooms.
    3.4. Generator rooms.
    3.5. Common areas of multi ~~-user~~ compartment toilet ~~and bathing~~ rooms ~~in public restrooms~~.

2024 International Fire Code

Revise as follows:

[BE] 1008.3 Illumination required by an emergency electrical system. An emergency electrical system shall be provided to automatically illuminate the following areas in the event of a power supply failure:

1. In rooms or spaces that require two or more *exits* or access to *exits*:
    1.1. *Aisles*.
    1.2. *Corridors*.
    1.3. *Exit access stairways* and *ramps*.
2. In buildings that require two or more *exits* or access to *exits*:
    2.1. *Interior exit access stairways* and *ramps*.
    2.2. *Interior* and *exterior exit stairways* and *ramps*.
    2.3. *Exit passageways*.
    2.4. Vestibules and areas on the level of discharge used for *exit discharge* in accordance with Section 1028.2.
    2.5. Exterior landings as required by Section 1010.1.5 for exit doorways that lead directly to the *exit discharge*.

3. In other rooms and spaces:

   3.1. Electrical equipment rooms.

   3.2. Fire command centers.

   3.3. Fire pump rooms.

   3.4. Generator rooms.

   3.5. Common areas of multi ~~-user-~~ compartment toilet ~~and bathing~~ rooms ~~in public restrooms~~.

Reason: The 2024 text has a requirement for all public restrooms over 300 sq.ft. to have emergency lighting. The intent of the original proposal was to require emergency lighting on all public toilet rooms, regardless of size.
First, it is important to clarify that none of these proposals were to change to the means of egress lighting in Section 1008.2. Emergency lighting is along main egress routes in spaces with two or more means of egress. Such lighting must have standby power.

The original proposal was disapproved in CAH1 for three reasons:

1) The committee felt that emergency lighting should not be required in toilet rooms with one water closet.

2) Adjacent spaces might not have emergency lighting required, so you would be moving from a lighted to a dark area.

3) In toilet rooms where compartment walls extended floor to ceiling, this revision would require an emergency light all compartments.

There was a CAH2 proposal to try and revise this to "common areas of multiple stall toilet rooms". The approval in CAH2 was modified based on suggestions during testimony. The final result is not clear and can be easily misinterpreted.

There was testimony in CAH2 that 'stall' was not the right term. This public comment proposes to use 'compartment'; which is used in the IPC and ICC A117.1.

'Multi-user' in the current approved text is not clear. Some people will interpret family/assisted use toilet rooms to be multi-user. Family/assisted use toilet rooms can include a urinal or a child size fixture in addition to the adult water closet. It is not the intent of this public comment to require emergency lighting in single-user or family/assisted use toilet rooms.

The term 'multiple-user toilet facility' was added to the 2024 IPC by P5-23 Part 1.

TOILET FACILITY.
A room or space that contains not less than one water closet and one lavatory.

Multiple-user toilet facility.
A toilet facility intended to be used by multiple occupants. Such facilities have more than one water closet and one lavatory. Each water closet is located in its own compartment that is created by vertical partitions.

Single-user toilet facility.
A toilet facility intended to be used by a single occupant and that contains not less than one water closet and one lavatory.

'Public restroom' was added back into the text by a suggestion from the floor. There are multi-compartment toilet rooms that are in employee only areas - these are not 'public' toilet rooms in accordance with the IPC. There have also been questions as to if a multi-compartment toilet room in areas where the general public is not typically present, like within a school or in a jail, would be considered a public toilet room or not. We feel that all of these areas types of toilet rooms should have emergency lighting.

It is not clear what would constitute a bathing room - is this the shower room in a locker room? This was not in the 2024 text, so we are proposing to not address those areas at this time.

We hope that the public comment will provide a clear and consistent direction for which toiler rooms are required to include emergency lighting in addition to the general means of egress lighting.

This proposal is submitted by the ICC Building Code Action Committee (BCAC).

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Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This is clarifying the existing requirement, so there will be no increase in what is currently required for public toilet rooms. In situations where employee toilet rooms are not considered public toilet rooms, an emergency light with a batter back up is between $20 to $60.

E41-24

IBC: 1009.2.1; IFC: [BE] 1009.2.1

Proposed Change as Submitted

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org)

2024 International Building Code

Revise as follows:

1009.2.1 Elevators required. In *buildings* where a required *accessible* floor is four or more *stories* above or below a *level of exit discharge* or where an accessible *occupiable roof* is above a *story* that is three or more *stories* above the *level of exit discharge* , not less than one required *accessible means of egress* shall include an elevator complying with Section 1009.4.

Exceptions:

1. ~~In *buildings* equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the~~ The elevator shall not be required as part of the *accessible means of egress* ~~on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.~~ where the building complies with all of the following:
   1.1. The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
   1.2. All floors above the level of exit discharge are provided with a horizontal exit.
   1.3. Where there is an occupiable roof, the means of egress serving the occupiable roof is provided by interior exit stairways or ramps complying with Section 1023.
2. In *buildings* equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of the *accessible means of egress* on floors or *occupiable roofs* provided with a ramp conforming to the provisions of Section 1012.

2024 International Fire Code

Revise as follows:

[BE] 1009.2.1 Elevators required. In buildings where a required accessible floor is four or more stories above or below a *level of exit discharge* or where an accessible *occupiable roof* is above a story that is three or more stories above the *level of exit discharge* , not less than one required *accessible means of egress* shall include an elevator complying with Section 1009.4.

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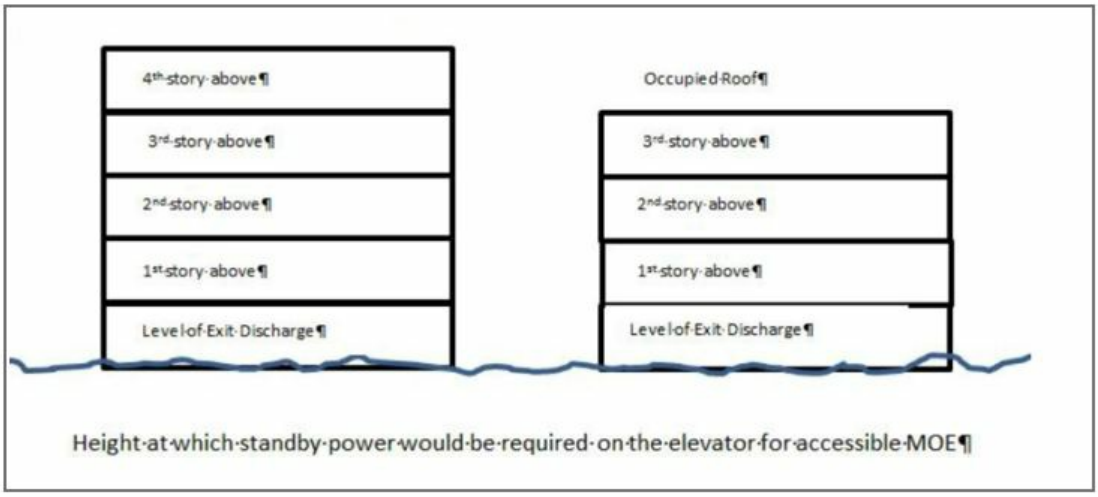
Reason: The intent of this proposal is to address buildings that have an occupiable roof and to allow for those buildings to use the option of elevators with standby power (required in Section 1009.4) or to allow the use of horizontal exits. The reformatting is for ease of use and clarity. The new requirement for occupiable roofs is addressed in 1.3.

Horizontal exits on floors provide protected areas for people to wait for fire department assisted rescue if they need it.

With the addition of 1.3, people on the occupied roofs would be protected from smoke and fumes by being open to the air. If the people enter directly into enclosed exit stairways, they are protected to the level of exit discharge. These are sprinklered buildings, so no interior areas of refuge are required. The horizontal exits below allow for slower evacuation time, so the fire department can have additional time to assist anyone on the roof. Section 1006.3 considers occupiable roofs as a story for means of egress, so there will always be at least two ways off.

The Egress committee (E31-21) raised some concerns last cycle which this proposal addresses . The concern as to the location of the horizontal exit on the level below the occupied roof is immaterial because the occupants will already be within a protected exit enclosure. Following, there is not a concern of an occupant traveling down to the fire side of a horizontal exit on the floor below with the use of an exit access stairway or ramp.



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Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

Occupiable roofs were added to Section 1009.2 by E30-18. This clarifies an option for accessible means of egress for building with occupiable roofs.

E41-24

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: This clarification is needed to address occupied roofs. However, the exception does not address what happens in the basement levels - either address these or limit the exception to above grade. (Vote: 14-0)

Public Hearing Results (CAH2)

Committee Action: **None-PC (Public Comment)**

Committee Reason: Comments discussed but no new action was taken by the committee. See Reason statement from CAH #1 action.

E41-24

Individual Consideration Agenda

Public Comment GROVE-PC1:

IBC: 1009.2.1, 1009.4, 1009.4.1, 1009.4.2; IFC: [BE] 1009.2.1, [BE] 1009.4, [BE] 1009.4.1, [BE] 1009.4.2

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests As Modified by Public Comment (PCH)

Further modify as follows:

2024 International Building Code

Revise as follows:

1009.2.1 Elevators required. In *buildings* where a required *accessible* floor is four or more *stories* above or below a *level of exit discharge* or where an accessible *occupiable roof* is above a *story* that is three or more *stories* above the *level of exit discharge* , not less than one required *accessible means of egress* shall include an elevator complying with Section 1009.4.

Exceptions:

1. The elevator shall not be required ~~as part of the *accessible means of egress*~~ to be provide with standby power in accordance with Section 1009.4.1 where the building complies with all of the following:
   1.1. The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
   1.2. All floors above and below the level of exit discharge are provided with a horizontal exit.
   1.3. Where there is an occupiable roof, the means of egress serving the occupiable roof is provided by interior exit stairways ~~or ramps~~ complying with Section 1023.
2. The elevator shall not be required to provide standby power in accordance with Section 1009.4.1 where the building complies with both of the following:
   2.1. ~~In buildings~~ The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. ~~, the elevator shall not be required as part of the accessible means of egress on~~
   2.2. The means of egress for floors or occupiable roofs is provided ~~with a ramp~~ by ramps conforming to the provisions of Section 1012.

1009.4 Elevators. In order to be considered part of an *accessible means of egress*, an elevator shall comply with Sections 1009.4.1 and 1009.4.2.

1009.4.1 Standby power. The elevator shall meet the emergency operation and signaling device requirements of Section 2.27 of ASME A17.1/CSA B44. Standby power shall be provided in accordance with Chapter 27 and Section 3003.

Exception: Standby power is not required where the floors or occupied roof comply with Section 1009.2.1 Exception 1 or 2.

1009.4.2 Area of refuge. The elevator shall be accessed from an *area of refuge* complying with Section 1009.6.

Exceptions:

1. *Areas of refuge* are not required at the elevator in *open parking garages*.
2. *Areas of refuge* are not required in *buildings* and *facilities* equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. *Areas of refuge* are not required at elevators not required to be located in a *shaft* in accordance with Section 712.
4. *Areas of refuge* are not required at elevators serving *smoke-protected* or *open-air assembly seating* areas complying with Sections 1030.6.2 and 1030.6.3.
5. *Areas of refuge* are not required for elevators accessed from a refuge area in conjunction with a *horizontal exit*.

2024 International Fire Code

Revise as follows:

[BE] 1009.2.1 Elevators required. In buildings where a required accessible floor is four or more stories above or below a *level of exit discharge* or where an accessible *occupiable roof* is above a story that is three or more stories above the *level of exit discharge* , not less than one required *accessible means of egress* shall include an elevator complying with Section 1009.4.

Exceptions:

1. The elevator shall not be required ~~as part of the *accessible means of egress*~~ to be provide with standby power in accordance with Section 1009.4.1 where the building complies with all of the following:
    1.1. The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
    1.2. All floors above and below the level of exit discharge are provided with a horizontal exit.
    1.3. Where there is an occupiable roof, the means of egress serving the occupiable roof is provided by interior exit stairways ~~or ramps~~ complying with Section 1023.

2. The elevator shall not be required to provide standby power in accordance with Section 1009.4.1 where the building complies with both of the following:
    2.1. ~~In buildings~~ The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. ~~, the elevator shall not be required as part of the accessible means of egress on~~
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[BE] 1009.4 Elevators. In order to be considered part of an accessible *means of egress*, an elevator shall comply with Sections 1009.4.1 and 1009.4.2.

[BE] 1009.4.1 Standby power. The elevator shall meet the emergency operation and signaling device requirements of Section 2.27 of ASME A17.1/CSA B44. Standby power shall be provided in accordance with Chapter 27 and Section 3003 of the *International Building Code*.

Exception: Standby power is not required where the floors or occupied roof comply with Section 1009.2.1 Exception 1 or 2.

[BE] 1009.4.2 Area of refuge. The elevator shall be accessed from an *area of refuge* complying with Section 1009.6.

Exceptions:

1. *Areas of refuge* are not required at the elevator in open parking garages.
2. *Areas of refuge* are not required in buildings and facilities equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. *Areas of refuge* are not required at elevators not required to be located in a shaft in accordance with Section 712 of the *International Building Code*.
4. *Areas of refuge* are not required at elevators serving *smoke protected or open-air assembly seating* areas complying with Sections 1030.6.2 and 1030.6.3.
5. *Areas of refuge* are not required for elevators accessed from a refuge area in conjunction with a *horizontal exit*.

Reason: The intent of this proposal is clarification of the current exceptions and to address what is expected for occupied roofs. Testimony during CAH1 and CAH2 and subsequent discussions have made it obvious that this requirement has many different interpretations/understandings. There are many different scenarios with sloped sites, but for purposes of simplifying this discussion, the original assumption is a flat site with an accessible routes for ingress and egress on the level of exit discharge. Assisted evacuation is required for anyone who cannot use stairways where an accessible route to that level is via an elevator. In two, three and four story buildings, people move to the stairways for assisted evacuation. Elevators are required to have fire department recall so that people don't risk using the elevators themselves during a fire event. Use of the elevators during an emergency event is always with fire department control. The intent of this proposal is clarification of the current exceptions and to address what is expected for occupied roofs. Testimony during CAH1 and CAH2 and subsequent discussions have made it obvious that this requirement has many different interpretations/understandings.
There are many different scenarios with sloped sites, but for purposes of simplifying this discussion, the original assumption is a flat site with an accessible routes for ingress and egress on the level of exit discharge. Assisted evacuation is required for anyone who cannot use stairways where an accessible route to that level is via an elevator. In two, three and four story buildings, people move to the stairways for assisted evacuation. Elevators are required to have fire department recall so that people don't risk using the elevators themselves during a fire event. Use of the elevators during an emergency event is always with fire department control.

Occupied roofs are considered a story for purposes of accessibility and means of egress. Once a building is 5 or more stories, the elevator is required to have standby power. This allows for the fire department to continue to use the elevator even if the building has lost power. Where the building's top floor is 120' or more, the elevators also pick up the requirements for fire service access elevators (including elevator lobbies with direct access to stairways, shaft monitoring, etc.).

1009.2.1 Exception 2 - In building where there are ramps from each story, such as a parking garage or stadium, the elevators do not need standby power because people can leave on their own or the fire department can assist using the ramps. Therefore, Section 1009.2.1, Exception 2 does not require the elevator to serve as part of the accessible means of egress (not provide standby power). If the building is sprinklered or open to the outside air, Section 1009.4.2 Exceptions 1 and 4 also allow for no area of refuge.

1009.2.1 Exception 1 - The current exception allows for buildings 5 stories or taller to not provide standby power to the elevator where each floor has a horizontal exit. The horizontal exit provides for giant area of refuge that protect occupants from smoke and fumes so that there is more time allowed for self and assisted evacuations. In this situation, standby power is not required at 5 stories, but there is not a similar exception for fire service access elevators at 120'. So no stand by power with horizontal exits is basically an option for buildings between 5 and 12 stories tall.

The fire department has to offer assisted rescue for all floors, so putting horizontal exits only on floors above the 4th story is NOT how this option should be applied. What is currently missing from the exception is where a building has an occupied roof. Being open to the outside air does not allow for a a fire barrier in the middle of the roof, but neither do you have the accumulation of smoke and fumes like you do on lower floors. The roof is required to have the same requirements for exits and separation of exits as the lower floor - and exit have to be continuous - so 'exit stairways' to a roof would have to discharge to the exterior at the level of exit discharge - and because of the horizontal exits below, protected in shafts and on either side of the fire barriers making up the horizontal exits. An indication that open to the outside air is equivalent to a rated wall is that Section 3007.6 Exception 2 states that lobbies are fire service access elevators are not required on occupied roofs.

Adding 'and below' in Exception 1.2 would clarify what is required if a building also has basements. This was not addressed previously.

If a 5 to 12 story building does not have to have elevators with stand by power, is there a justification for requiring this to an occupied roof on that same building?

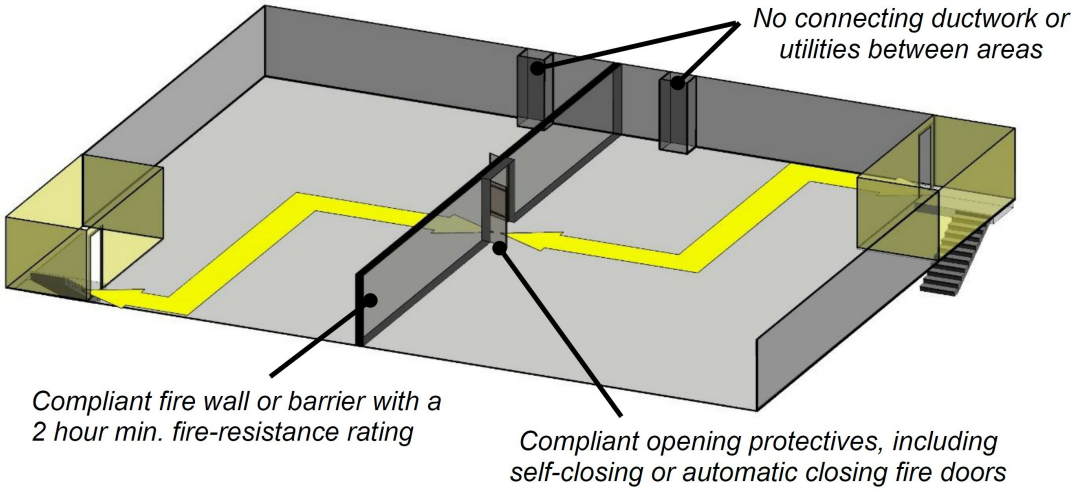
Opponents during the testimony brought up the idea of providing areas of refuge on the roof. However, this is a conflict with the exceptions in Sections 1009.3.3 Exception 2 and 1009..4.2 Exception 2 for no areas of refuge in sprinklered buildings - even on floors without the horizontal exit protection.

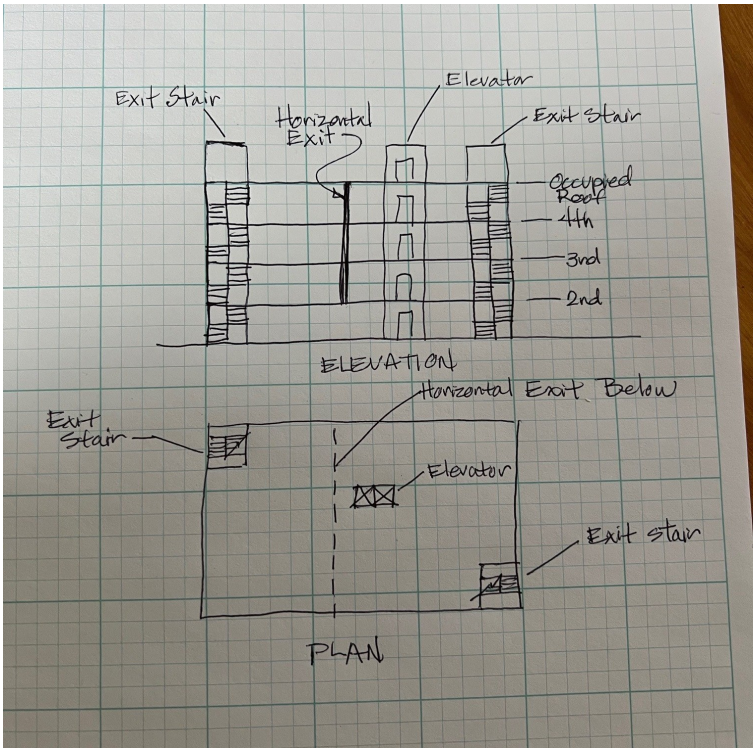
The intent of the modifications is to provide additional detail and consistent language between the exceptions in Section 1009.2.1. Adding the exception in Section 1009.4.1 coordinates the requirements for elevators.

Below is a diagram (courtesy of US Access Board) of a horizontal exit that shows why areas of refuge are not required.

Following that is a sketch showing a plan and elevation for a building with horizontal exits on each floor above the level of exit discharge.

Horizontal Exit





Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

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Public Comment (PCH)# 3648

E41-24

IBC: 1009.2.1; IFC: [BE] 1009.2.1

Proposed Change as Submitted

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org)

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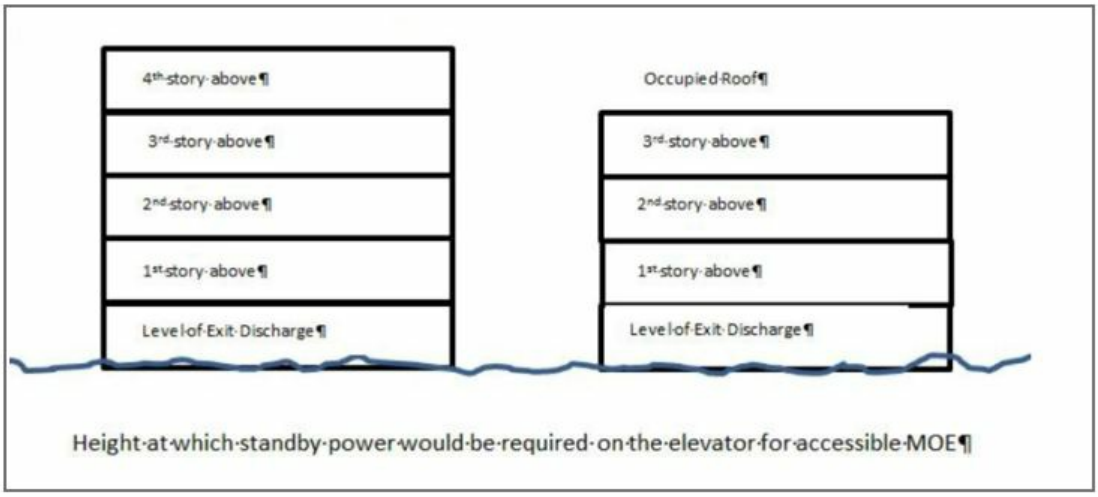
Reason: The intent of this proposal is to address buildings that have an occupiable roof and to allow for those buildings to use the option of elevators with standby power (required in Section 1009.4) or to allow the use of horizontal exits. The reformatting is for ease of use and clarity. The new requirement for occupiable roofs is addressed in 1.3.

Horizontal exits on floors provide protected areas for people to wait for fire department assisted rescue if they need it.

With the addition of 1.3, people on the occupied roofs would be protected from smoke and fumes by being open to the air. If the people enter directly into enclosed exit stairways, they are protected to the level of exit discharge. These are sprinklered buildings, so no interior areas of refuge are required. The horizontal exits below allow for slower evacuation time, so the fire department can have additional time to assist anyone on the roof. Section 1006.3 considers occupiable roofs as a story for means of egress, so there will always be at least two ways off.

The Egress committee (E31-21) raised some concerns last cycle which this proposal addresses . The concern as to the location of the horizontal exit on the level below the occupied roof is immaterial because the occupants will already be within a protected exit enclosure. Following, there is not a concern of an occupant traveling down to the fire side of a horizontal exit on the floor below with the use of an exit access stairway or ramp.



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E41-24

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: This clarification is needed to address occupied roofs. However, the exception does not address what happens in the basement levels - either address these or limit the exception to above grade. (Vote: 14-0)

Public Hearing Results (CAH2)

Committee Action: **None-PC (Public Comment)**

Committee Reason: Comments discussed but no new action was taken by the committee. See Reason statement from CAH #1 action.

E41-24

Individual Consideration Agenda

Public Comment GROVE-PC1:

IBC: 1009.2.1, 1009.4, 1009.4.1, 1009.4.2; IFC: [BE] 1009.2.1, [BE] 1009.4, [BE] 1009.4.1, [BE] 1009.4.2

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests As Modified by Public Comment (PCH)

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2024 International Fire Code

Revise as follows:

[BE] 1009.2.1 Elevators required. In buildings where a required accessible floor is four or more stories above or below a *level of exit discharge* or where an accessible *occupiable roof* is above a story that is three or more stories above the *level of exit discharge* , not less than one required *accessible means of egress* shall include an elevator complying with Section 1009.4.

Exceptions:

1. The elevator shall not be required ~~as part of the *accessible means of egress*~~ to be provide with standby power in accordance with Section 1009.4.1 where the building complies with all of the following:
    1.1. The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
    1.2. All floors above and below the level of exit discharge are provided with a horizontal exit.
    1.3. Where there is an occupiable roof, the means of egress serving the occupiable roof is provided by interior exit stairways ~~or ramps~~ complying with Section 1023.

2. The elevator shall not be required to provide standby power in accordance with Section 1009.4.1 where the building complies with both of the following:
    2.1. ~~In buildings~~ The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. ~~, the elevator shall not be required as part of the accessible means of egress on~~
    2.2. The means of egress for floors or occupiable roofs is provided ~~with a ramp~~ by ramps conforming to the provisions of Section 1012.

[BE] 1009.4 Elevators. In order to be considered part of an accessible *means of egress*, an elevator shall comply with Sections 1009.4.1 and 1009.4.2.

[BE] 1009.4.1 Standby power. The elevator shall meet the emergency operation and signaling device requirements of Section 2.27 of ASME A17.1/CSA B44. Standby power shall be provided in accordance with Chapter 27 and Section 3003 of the *International Building Code*.

Exception: Standby power is not required where the floors or occupied roof comply with Section 1009.2.1 Exception 1 or 2.

[BE] 1009.4.2 Area of refuge. The elevator shall be accessed from an *area of refuge* complying with Section 1009.6.

Exceptions:

1. *Areas of refuge* are not required at the elevator in open parking garages.
2. *Areas of refuge* are not required in buildings and facilities equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. *Areas of refuge* are not required at elevators not required to be located in a shaft in accordance with Section 712 of the *International Building Code*.
4. *Areas of refuge* are not required at elevators serving *smoke protected or open-air assembly seating* areas complying with Sections 1030.6.2 and 1030.6.3.
5. *Areas of refuge* are not required for elevators accessed from a refuge area in conjunction with a *horizontal exit*.

Reason: The intent of this proposal is clarification of the current exceptions and to address what is expected for occupied roofs. Testimony during CAH1 and CAH2 and subsequent discussions have made it obvious that this requirement has many different interpretations/understandings. There are many different scenarios with sloped sites, but for purposes of simplifying this discussion, the original assumption is a flat site with an accessible routes for ingress and egress on the level of exit discharge. Assisted evacuation is required for anyone who cannot use stairways where an accessible route to that level is via an elevator. In two, three and four story buildings, people move to the stairways for assisted evacuation. Elevators are required to have fire department recall so that people don't risk using the elevators themselves during a fire event. Use of the elevators during an emergency event is always with fire department control. The intent of this proposal is clarification of the current exceptions and to address what is expected for occupied roofs. Testimony during CAH1 and CAH2 and subsequent discussions have made it obvious that this requirement has many different interpretations/understandings.
There are many different scenarios with sloped sites, but for purposes of simplifying this discussion, the original assumption is a flat site with an accessible routes for ingress and egress on the level of exit discharge. Assisted evacuation is required for anyone who cannot use stairways where an accessible route to that level is via an elevator. In two, three and four story buildings, people move to the stairways for assisted evacuation. Elevators are required to have fire department recall so that people don't risk using the elevators themselves during a fire event. Use of the elevators during an emergency event is always with fire department control.

Occupied roofs are considered a story for purposes of accessibility and means of egress. Once a building is 5 or more stories, the elevator is required to have standby power. This allows for the fire department to continue to use the elevator even if the building has lost power. Where the building's top floor is 120' or more, the elevators also pick up the requirements for fire service access elevators (including elevator lobbies with direct access to stairways, shaft monitoring, etc.).

1009.2.1 Exception 2 - In building where there are ramps from each story, such as a parking garage or stadium, the elevators do not need standby power because people can leave on their own or the fire department can assist using the ramps. Therefore, Section 1009.2.1, Exception 2 does not require the elevator to serve as part of the accessible means of egress (not provide standby power). If the building is sprinklered or open to the outside air, Section 1009.4.2 Exceptions 1 and 4 also allow for no area of refuge.

1009.2.1 Exception 1 - The current exception allows for buildings 5 stories or taller to not provide standby power to the elevator where each floor has a horizontal exit. The horizontal exit provides for giant area of refuge that protect occupants from smoke and fumes so that there is more time allowed for self and assisted evacuations. In this situation, standby power is not required at 5 stories, but there is not a similar exception for fire service access elevators at 120'. So no stand by power with horizontal exits is basically an option for buildings between 5 and 12 stories tall.

The fire department has to offer assisted rescue for all floors, so putting horizontal exits only on floors above the 4th story is NOT how this option should be applied. What is currently missing from the exception is where a building has an occupied roof. Being open to the outside air does not allow for a a fire barrier in the middle of the roof, but neither do you have the accumulation of smoke and fumes like you do on lower floors. The roof is required to have the same requirements for exits and separation of exits as the lower floor - and exit have to be continuous - so 'exit stairways' to a roof would have to discharge to the exterior at the level of exit discharge - and because of the horizontal exits below, protected in shafts and on either side of the fire barriers making up the horizontal exits. An indication that open to the outside air is equivalent to a rated wall is that Section 3007.6 Exception 2 states that lobbies are fire service access elevators are not required on occupied roofs.

Adding 'and below' in Exception 1.2 would clarify what is required if a building also has basements. This was not addressed previously.

If a 5 to 12 story building does not have to have elevators with stand by power, is there a justification for requiring this to an occupied roof on that same building?

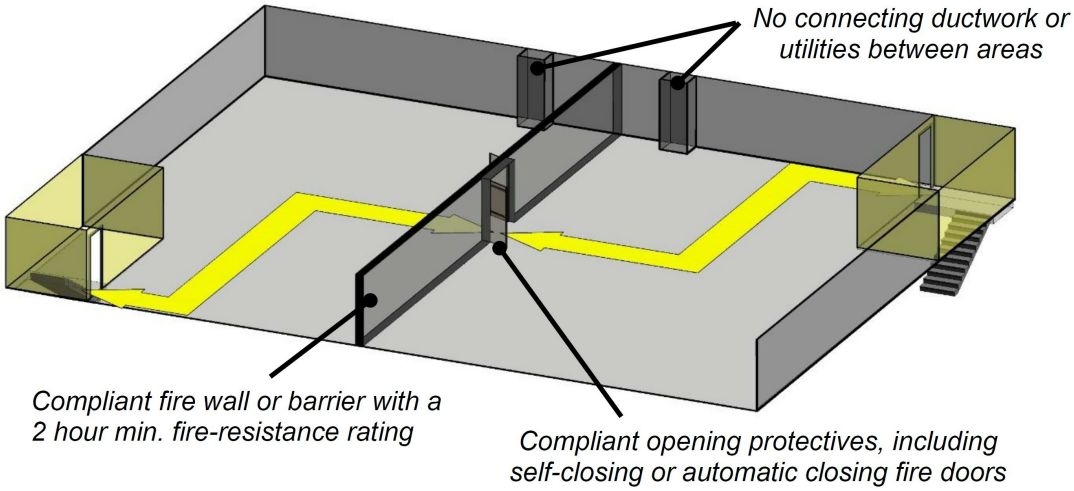
Opponents during the testimony brought up the idea of providing areas of refuge on the roof. However, this is a conflict with the exceptions in Sections 1009.3.3 Exception 2 and 1009..4.2 Exception 2 for no areas of refuge in sprinklered buildings - even on floors without the horizontal exit protection.

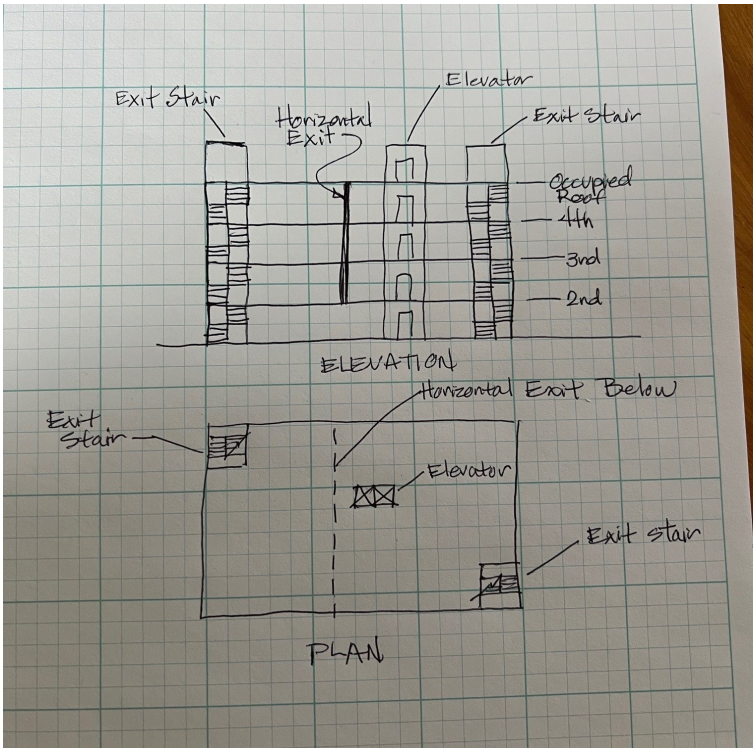
The intent of the modifications is to provide additional detail and consistent language between the exceptions in Section 1009.2.1. Adding the exception in Section 1009.4.1 coordinates the requirements for elevators.

Below is a diagram (courtesy of US Access Board) of a horizontal exit that shows why areas of refuge are not required.

Following that is a sketch showing a plan and elevation for a building with horizontal exits on each floor above the level of exit discharge.

Horizontal Exit





Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

Occupiable roofs were added to Section 1009.2 by E30-18. This clarifies an option for accessible means of egress for building with occupiable roofs.

Public Comment (PCH)# 3648

E73-24

IBC: 1011.7.2 (New), 1011.7.2.1 (New), 1011.7.2.2 (New); IFC: 1011.7.2 (New), 1011.7.2.1 (New), 1011.7.2.2 (New)

Proposed Change as Submitted

Proponents: Nancy Clanton, Clanton & Associates, Inc, representing Clanton & Associates, Inc. (nancy@clantonassociates.com); Brittany Lynch, representing Clanton & Associates (brittany@clantonassociates.com); Eunice Noell-Waggoner, President, Center of Design for an Aging Society, representing IES Lighting for Seniors and the Visually Impaired Committee (eunice@centerofdesign.org); Jonathan McHugh, McHugh Energy Consultants Inc., representing California Investor Owned Utilities (jon@mchughenergy.com); Harold Jepsen, representing Legrand (harold.jepsen@legrand.com)

2024 International Building Code

Add new text as follows:

1011.7.2 Markings on stairways. Egress path markings shall be provided on interior and exterior stairways in accordance with Sections 1011.7.2.1 and 1011.7.2.2.

Exceptions:

1. Stairways within individual dwelling units.
2. Stairways with stripes complying with Section 1025.

1011.7.2.1 Steps. A solid and continuous stripe shall be applied to the horizontal leading edge of each step and shall extend for the full length of the step. Stripes shall be a solid color having a visual contrast of dark-on-light or light-on dark from the remainder of the tread or landing surface. Stripes have a minimum horizontal width of 1 inch (25 mm) and a maximum width of 3 inches (76 mm). The leading edge of the stripe shall be placed not more than ½ inch (12.7 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by not more than 1/2 inch (12.7 mm) down the vertical face of the step. The stripe shall be of material that is at least as slip resistant as the other tread surface.

1011.7.2.2 Landings. The leading edge of landings shall be marked with a stripe consistent with the dimensional requirements for steps.

2024 International Fire Code

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1011.7.2.2 Landings. The leading edge of landings shall be marked with a stripe consistent with the dimensional requirements for steps.

Reason: From Cohen and Pauls (2006) they cite the following statistics about stair safety. *"According to the National Public Services Research Institute, in 1995, it was estimated that stair-related injuries in the United States were associated with comprehensive costs of $50 billion, including $4.7 billion in medical costs, $7.1 billion in productivity losses, and $38.1 billion in quality of life losses (T. Miller, Personal Communication. 1998). Even the smallest of these component costs is astonishing relative to annual stair construction costs in the United States; these are only approximately $5 billion. With the possible exception of products, such as handguns, tobacco and illegal drugs, this 10-to-l ratio of injury costs to product production costs is extraordinary."*

Cohen and Pauls also note that increasing quantity of lighting alone is not sufficient to incease the visibility of the edge of the stair tread. *"In addition to lighting, there are other important factors in visibility of steps, including careful choice of stairway covering materials to avoid patterns that tend to camouflage the step nosings and the critical leading edges of treads. and to use highly contrasting tread markings."*

The Illuminating Engineering Society's Recommended Practice for Lighting and the Visual Environment for Older Adults and the Visually Impaired (IES-RP-28-20) notes the following concerning the use of reflectance contrast for increasing visibility: *Value contrast should be a design consideration in the selection of finishes for corridors, stairs, lobbies and spaces that become part of the path of egress. Contrast helps to define the space and the elements within the space, e.g., doorways, changes of floor level or direction, and obstructions such as columns, to increase visibility and the occupant's confidence. Everyone's sight benefits from value contrast in low-light conditions, regardless of age or visual acuity.*

The IES also recommends that *"All stairs should have clearly marked edge strips, staircase borders, and handrails to meet the needs of older people and persons with low vision."*

Similar to what has been recommended by Cohen and Pauls and the Illuminating Engineering Society, this proposal would increase the safety of stairways by increasing the reflectance contrast (and thus the luminance contrast) by requiring colored stripes on the nosing or leading edges of stairs. The difference in reflectance between the edge stripe and the rest of the stair tread will to increase the visibility of the edge of the stair. These colored stripes would be one to two inches wide on the edge of nosing the stair. This proposal is written the same format as the requirement as IBC *Section 1011.5.4.1 Nonuniform height risers*. However the distinguishing difference between stripes on nonuniform height risers and those proposed for all other stairs is "nonuniform height risers shall have a distinctive marking stripe, different from any other nosing marking provided on the stair flight."

The description of the marking stripes are written to be in alignment with ANSI/ICC 117.1 Accessibility Standard Section 504.6 "Visual Contrast". Addtionally this proposal modifies both Section 1011.5.4.1 and 1011.7.1 on the geometrical description of the contrasting marking stripe. Originally the stripe is defined as being one to two inches wide, this proposal more clearly defines the stripes as being one to two inches in depth and having a width that extends the width of the stair tread.

Bibliography: ANSI/IES RP-28-20. *Recommended Practice: Lighting and the Visual Environment for Older Adults and the Visually Impaired.* Illuminating Engineering Society. New York.

Cohen, Harvey and Pauls, Jake. *Warnings and Markings for Stairs and Pedestrian Terrain*. **Handbook on Warnings.** In: Michael Wogalter (Ed.),Lawrence Erlbaum, Inc., 2006, pp. 711-722.

Cost Impact: Increase

Estimated Immediate Cost Impact:

The lowest cost method for adding a stripe to stairs is painting a stripe. However to provide conservatively high estimate we have used the cost of adding a metal nosing strip to the tread of each stair and on the nosing of the landing above a stair. From estimates of costs published on the internet the costs of aluminum stair nosing are $6 to $21 per linear foot. https://kofflersales.com/product/metal-stair-nosing Similar costs are found on Grainger's and Lowes websites.

Using a medium costs of $12.50/linear foot, the material cost of adding an aluminum nosing to a 4 foot wide tread is $50/stair. According

one home improvement website, “A beginner can install a nosing on a tread in 15 to 30 minutes.” https://www.thespruce.com/installing-a-stair-nosing-strip-1822570 According to the US Bureau of Labor Statistics, the Mean Labor wage for carpenter, US average May 2022 is $ 27.99/hr https://www.bls.gov/oes/current/oes472031.htm Thus the labor cost is $14 per step to install a $50 nosing strip for a total installed cost of $64/stair tread. With 50% overhead and profit for carpenters (2020 RS Means), total cost is $96 per installed 4 foot wide nosing. For a 12 foot tall story, with 6 inch risers per step, there are 24 nosings with an installed cost of 24 x $96 = $2,304 per story.

This cost for nosings is compared against the cost adding stairs per story. In the Economics of Egress Alternatives and Life-Safety Costs, NIST Special Publication 1109. September 2010. Gaithersburg, Maryland (https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication1109.pdf) describes the costs of adding an additional exit stair to a 13 story prototypical building as follows: “The baseline value for the life-cycle costs of installing an additional exit stair in Building 2 ranges from $1.5 million for the 44 in (112 cm) stair width to $2.4 million for the 66 in (168 cm) stair width.” The cost per story of this added exit stair is $1.5 Million/ 12 = $125,000 per story. The fractional cost of adding aluminum stair nosings strips is $2,300/$125,000 = 1.8

Estimated Immediate Cost Impact Justification (methodology and variables):

Adding striping to stairs increases the cost of stairs by 1.8%. However, this cost is offset by the societal savings associated with avoiding trip and fall hazards on stairways.

Estimated Life Cycle Cost Impact:

In Cohen and Pauls, Warnings and Markings for Stairs and Pedestrian Terrain (see bibliography), they estimate that the ratio of the cost of annual injuries on stairs to the annual cost of stair construction is 10 to one. The annual construction rate of nonresidential buildings is 1.3% (table B7 of the US EIA 2012 Commercial Buildings Energy Consumption Survey). Thus the annual value of injuries on stairs are 10 x 0.013 = 13% of the value of the stock of all stairs. Assuming that metal nosing lasts at least 10 years, the ratio of the value of injuries on stairs over 10 years to cost of the stairs is 10 x 13% = 130% of the value of the stairs. As described in the cost impact statement, a conservatively high estimate of the cost of stair striping is 1.8% of total stair cost. Thus, the ratio of the cost of stair striping to the cost of injuries on stairs is 1.8%/130% = 1.4%. If stair striping reduces injuries on stairs, by 1.4% this will pay for the added cost of striping stairs by adding an aluminum nosing that is conspicuously different than the reflectance of the rest of the stair tread. Given the mechanisms of how falls are induced on stairs, we expect that stair striping will reduce the percentage of falls significantly more than 1.4%.

Estimated Life Cycle Cost Impact Justification (methodology and variables):

If the striping reduces falls in stairs by any amount greater than 1.4%, life cycle cost is decreased.

In Cohen and Pauls, Warnings and Markings for Stairs and Pedestrian Terrain, they identify three factors to stair safety.

1. visibility of the stair flight and its individual steps, especially when viewed in descent;

2. adequacy and uniformity of step dimensions in relation to human gait; and

3. availability of reachable, graspable handrails that also provide accurate visual cues about the presence and location of steps.

Items 2 is addressed by IBC Section 1011.5. Item 3 is addressed by IBC section 1011.11. Visibility is only partially addressed by illuminance requirements in IBC Section 1008. Critical to visibility of steps is the luminance contrast of the tread edge; luminance contrast is the ratio of reflected light from the stair edge as compared to other surfaces on the stair. When stairs are uniformly illuminated, luminance contrast is a function of reflectance contrast of the stair edge from the surrounding tread and riser. Increasing illuminance without adjusting the ratios of surface reflectances of stair edge from its surroundings does not increase luminance contrast because with increasing illuminance, the luminance of both the stair edge and its surroundings will both rise proportionately and thus the ratio of the stair edge to its surroundings have not changed. We expect that lack of reflectance contrast is a significant cause of falls on stairs and thus addressing this issue will result in substantially more savings associated with avoided injuries and deaths than its first cost. Reducing stairway falls by only 1.4% will pay for the cost of the stair striping. See the calculations below for the rationale.

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: While contrast on stairways is important, the proposed requirements are not clear. The committee felt that the language was not clear enough to apply consistently and correctly in the field. The terms 'steps' is not defined in the code - this should be 'treads'. The requirements for the treads and landings should be in Sections 1011.5 and 1011.6. The application of this to "interior and exterior stairways" would include to all convenience stairways (exit access), as well as stairways in the exit discharge - this is over reaching. Are there any studies that have taken into consideration stairway continuity and handrails to address the safety concerns brought up by the proponents? What would be an acceptable material for the stripes? How would you verify contrast on stairways that were not a solid color? See also E74-24. (Vote: 13-1)

E73-24

Public Hearing Results (CAH2)

Committee Action: **As Modified by Committee (AMC2)**

Approved Comments: Comment 1

Committee Reason: The comment addressed the concerns expressed in the committee reason to CAH1. Contrast is understood without a referenced standard. The stripes on every tread for all exit stairways will improve safety and reduce fall hazards. (Vote: 10-3)

E73-24

Individual Consideration Agenda

Public Comment GROVE-PC1:

IBC: 1011.5, 1011.5.6, 1011.6.1; IFC: [BE] 1011.5, [BE] 1011.5.6, [BE] 1011.6.1

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests As Modified by Public Comment (PCH)

Further modify as follows:

2024 International Building Code

1011.5 Stair treads and risers. *Stair* treads and risers shall comply with Sections 1011.5.1 through 1011.5.6.

Revise as follows:

1011.5.6 Marking stripes on tread nosings. For interior exit stairways and exterior exit stairways, the horizontal leading edge ~~1 to 2 inches (25 to 51 mm)~~ of every tread nosing shall have a solid marking stripe of a ~~solid~~ contrasting color that is lighter or darker than the remainder of the tread. The marking stripe shall be durable and shall extend the full legth ~~from one side of the tread to the other side~~ of each tread. Stripes shall have a minimum horizontal width of 1 inch (25 mm) and a maximum width of 2 inches (51 mm). The leading edge of the stripe shall be placed not more than 1/2 inch (12.7 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by not more than 1/2 inch (12.7 mm) down the vertical face of the step.

Exceptions:

1. Portions of treads with distinctive marking stripes complying with Section 1011.5.4.1 are not required to comply with this section.

2. Stairways with stripes complying with Section 1025 are not required to comply with this section.

3. Stairways that provide a contrasting marking stripe on the top landing and bottom tread of each stair run and not required to provide a contrasting marking stripe on every tread.

1011.6.1 Marking stripes on landing nosings. For *interior exit stairways* and *exterior exit stairways*, the nosing of all landings shall have a marking stripe complying with Section 1011.5.6.

2024 International Fire Code

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Revise as follows:

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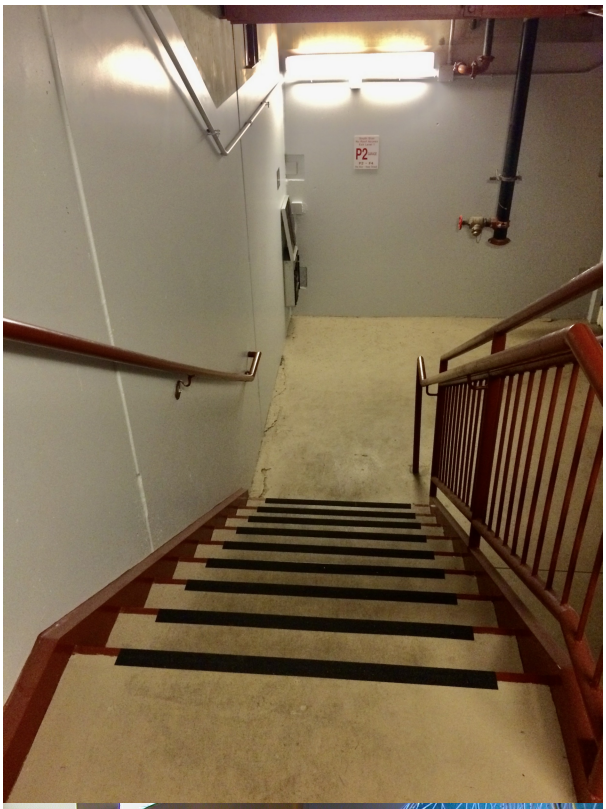
[BE] 1011.6.1 Marking stripes on landing nosings. For *interior exit stairways* and *exterior exit stairways*, the nosing of all landings shall have a marking stripe complying with Section 1011.5.6.

Reason: While we agree that markings should be provide to aid people in using a stairway, we feel that some additional clarifications and options are warranted.

The language for lighter and darker does not guarantee a contrasting stripe. This needs to be stressed.

During the testimony it was brought up that the location of the stripe is not as clear as it is for stripes in Section 1025. The current text does not indicate clearly which edge of the stripe, the width or the stripe, or the distance forward or back from the nosing. The proposed text is similar to 1025.2.1.

The intent of the proposal is to indicate to people with visions impairments that they are approaching or leaving steps. That can be done with either stripes on all treads, or at the landing and bottom tread. Along the stairway people have muscle memory and handrails for guidance. You do not need to look at every tread. Below are examples of each option. The option for the stripe at the top and bottom of the stairway run is a requirement in California.


P2

E73-24

IBC: 1011.7.2 (New), 1011.7.2.1 (New), 1011.7.2.2 (New); IFC: 1011.7.2 (New), 1011.7.2.1 (New), 1011.7.2.2 (New)

Proposed Change as Submitted

Proponents: Nancy Clanton, Clanton & Associates, Inc, representing Clanton & Associates, Inc. (nancy@clantonassociates.com); Brittany Lynch, representing Clanton & Associates (brittany@clantonassociates.com); Eunice Noell-Waggoner, President, Center of Design for an Aging Society, representing IES Lighting for Seniors and the Visually Impaired Committee (eunice@centerofdesign.org); Jonathan McHugh, McHugh Energy Consultants Inc., representing California Investor Owned Utilities (jon@mchughenergy.com); Harold Jepsen, representing Legrand (harold.jepsen@legrand.com)

2024 International Building Code

Add new text as follows:

1011.7.2 Markings on stairways. Egress path markings shall be provided on interior and exterior stairways in accordance with Sections 1011.7.2.1 and 1011.7.2.2.

Exceptions:

1. Stairways within individual dwelling units.
2. Stairways with stripes complying with Section 1025.

1011.7.2.1 Steps. A solid and continuous stripe shall be applied to the horizontal leading edge of each step and shall extend for the full length of the step. Stripes shall be a solid color having a visual contrast of dark-on-light or light-on dark from the remainder of the tread or landing surface. Stripes have a minimum horizontal width of 1 inch (25 mm) and a maximum width of 3 inches (76 mm). The leading edge of the stripe shall be placed not more than ½ inch (12.7 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by not more than 1/2 inch (12.7 mm) down the vertical face of the step. The stripe shall be of material that is at least as slip resistant as the other tread surface.

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Reason: From Cohen and Pauls (2006) they cite the following statistics about stair safety. *"According to the National Public Services Research Institute, in 1995, it was estimated that stair-related injuries in the United States were associated with comprehensive costs of $50 billion, including $4.7 billion in medical costs, $7.1 billion in productivity losses, and $38.1 billion in quality of life losses (T. Miller, Personal Communication. 1998). Even the smallest of these component costs is astonishing relative to annual stair construction costs in the United States; these are only approximately $5 billion. With the possible exception of products, such as handguns, tobacco and illegal drugs, this 10-to-l ratio of injury costs to product production costs is extraordinary."*

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The Illuminating Engineering Society's Recommended Practice for Lighting and the Visual Environment for Older Adults and the Visually Impaired (IES-RP-28-20) notes the following concerning the use of reflectance contrast for increasing visibility: *Value contrast should be a design consideration in the selection of finishes for corridors, stairs, lobbies and spaces that become part of the path of egress. Contrast helps to define the space and the elements within the space, e.g., doorways, changes of floor level or direction, and obstructions such as columns, to increase visibility and the occupant's confidence. Everyone's sight benefits from value contrast in low-light conditions, regardless of age or visual acuity.*

The IES also recommends that *"All stairs should have clearly marked edge strips, staircase borders, and handrails to meet the needs of older people and persons with low vision."*

Similar to what has been recommended by Cohen and Pauls and the Illuminating Engineering Society, this proposal would increase the safety of stairways by increasing the reflectance contrast (and thus the luminance contrast) by requiring colored stripes on the nosing or leading edges of stairs. The difference in reflectance between the edge stripe and the rest of the stair tread will to increase the visibility of the edge of the stair. These colored stripes would be one to two inches wide on the edge of nosing the stair. This proposal is written the same format as the requirement as IBC *Section 1011.5.4.1 Nonuniform height risers*. However the distinguishing difference between stripes on nonuniform height risers and those proposed for all other stairs is "nonuniform height risers shall have a distinctive marking stripe, different from any other nosing marking provided on the stair flight."

The description of the marking stripes are written to be in alignment with ANSI/ICC 117.1 Accessibility Standard Section 504.6 "Visual Contrast". Addtionally this proposal modifies both Section 1011.5.4.1 and 1011.7.1 on the geometrical description of the contrasting marking stripe. Originally the stripe is defined as being one to two inches wide, this proposal more clearly defines the stripes as being one to two inches in depth and having a width that extends the width of the stair tread.

Bibliography: ANSI/IES RP-28-20. *Recommended Practice: Lighting and the Visual Environment for Older Adults and the Visually Impaired.* Illuminating Engineering Society. New York.

Cohen, Harvey and Pauls, Jake. *Warnings and Markings for Stairs and Pedestrian Terrain*. **Handbook on Warnings.** In: Michael Wogalter (Ed.),Lawrence Erlbaum, Inc., 2006, pp. 711-722.

Cost Impact: Increase

Estimated Immediate Cost Impact:

The lowest cost method for adding a stripe to stairs is painting a stripe. However to provide conservatively high estimate we have used the cost of adding a metal nosing strip to the tread of each stair and on the nosing of the landing above a stair. From estimates of costs published on the internet the costs of aluminum stair nosing are $6 to $21 per linear foot. https://kofflersales.com/product/metal-stair-nosing Similar costs are found on Grainger's and Lowes websites.

Using a medium costs of $12.50/linear foot, the material cost of adding an aluminum nosing to a 4 foot wide tread is $50/stair. According

one home improvement website, “A beginner can install a nosing on a tread in 15 to 30 minutes.” https://www.thespruce.com/installing-a-stair-nosing-strip-1822570 According to the US Bureau of Labor Statistics, the Mean Labor wage for carpenter, US average May 2022 is $ 27.99/hr https://www.bls.gov/oes/current/oes472031.htm Thus the labor cost is $14 per step to install a $50 nosing strip for a total installed cost of $64/stair tread. With 50% overhead and profit for carpenters (2020 RS Means), total cost is $96 per installed 4 foot wide nosing. For a 12 foot tall story, with 6 inch risers per step, there are 24 nosings with an installed cost of 24 x $96 = $2,304 per story.

This cost for nosings is compared against the cost adding stairs per story. In the Economics of Egress Alternatives and Life-Safety Costs, NIST Special Publication 1109. September 2010. Gaithersburg, Maryland (https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication1109.pdf) describes the costs of adding an additional exit stair to a 13 story prototypical building as follows: “The baseline value for the life-cycle costs of installing an additional exit stair in Building 2 ranges from $1.5 million for the 44 in (112 cm) stair width to $2.4 million for the 66 in (168 cm) stair width.” The cost per story of this added exit stair is $1.5 Million/ 12 = $125,000 per story. The fractional cost of adding aluminum stair nosings strips is $2,300/$125,000 = 1.8

Estimated Immediate Cost Impact Justification (methodology and variables):

Adding striping to stairs increases the cost of stairs by 1.8%. However, this cost is offset by the societal savings associated with avoiding trip and fall hazards on stairways.

Estimated Life Cycle Cost Impact:

In Cohen and Pauls, Warnings and Markings for Stairs and Pedestrian Terrain (see bibliography), they estimate that the ratio of the cost of annual injuries on stairs to the annual cost of stair construction is 10 to one. The annual construction rate of nonresidential buildings is 1.3% (table B7 of the US EIA 2012 Commercial Buildings Energy Consumption Survey). Thus the annual value of injuries on stairs are 10 x 0.013 = 13% of the value of the stock of all stairs. Assuming that metal nosing lasts at least 10 years, the ratio of the value of injuries on stairs over 10 years to cost of the stairs is 10 x 13% = 130% of the value of the stairs. As described in the cost impact statement, a conservatively high estimate of the cost of stair striping is 1.8% of total stair cost. Thus, the ratio of the cost of stair striping to the cost of injuries on stairs is 1.8%/130% = 1.4%. If stair striping reduces injuries on stairs, by 1.4% this will pay for the added cost of striping stairs by adding an aluminum nosing that is conspicuously different than the reflectance of the rest of the stair tread. Given the mechanisms of how falls are induced on stairs, we expect that stair striping will reduce the percentage of falls significantly more than 1.4%.

Estimated Life Cycle Cost Impact Justification (methodology and variables):

If the striping reduces falls in stairs by any amount greater than 1.4%, life cycle cost is decreased.

In Cohen and Pauls, Warnings and Markings for Stairs and Pedestrian Terrain, they identify three factors to stair safety.

1. visibility of the stair flight and its individual steps, especially when viewed in descent;

2. adequacy and uniformity of step dimensions in relation to human gait; and

3. availability of reachable, graspable handrails that also provide accurate visual cues about the presence and location of steps.

Items 2 is addressed by IBC Section 1011.5. Item 3 is addressed by IBC section 1011.11. Visibility is only partially addressed by illuminance requirements in IBC Section 1008. Critical to visibility of steps is the luminance contrast of the tread edge; luminance contrast is the ratio of reflected light from the stair edge as compared to other surfaces on the stair. When stairs are uniformly illuminated, luminance contrast is a function of reflectance contrast of the stair edge from the surrounding tread and riser. Increasing illuminance without adjusting the ratios of surface reflectances of stair edge from its surroundings does not increase luminance contrast because with increasing illuminance, the luminance of both the stair edge and its surroundings will both rise proportionately and thus the ratio of the stair edge to its surroundings have not changed. We expect that lack of reflectance contrast is a significant cause of falls on stairs and thus addressing this issue will result in substantially more savings associated with avoided injuries and deaths than its first cost. Reducing stairway falls by only 1.4% will pay for the cost of the stair striping. See the calculations below for the rationale.

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: While contrast on stairways is important, the proposed requirements are not clear. The committee felt that the language was not clear enough to apply consistently and correctly in the field. The terms 'steps' is not defined in the code - this should be 'treads'. The requirements for the treads and landings should be in Sections 1011.5 and 1011.6. The application of this to "interior and exterior stairways" would include to all convenience stairways (exit access), as well as stairways in the exit discharge - this is over reaching. Are there any studies that have taken into consideration stairway continuity and handrails to address the safety concerns brought up by the proponents? What would be an acceptable material for the stripes? How would you verify contrast on stairways that were not a solid color? See also E74-24. (Vote: 13-1)

E73-24

Public Hearing Results (CAH2)

Committee Action: **As Modified by Committee (AMC2)**

Approved Comments: Comment 1

Committee Reason: The comment addressed the concerns expressed in the committee reason to CAH1. Contrast is understood without a referenced standard. The stripes on every tread for all exit stairways will improve safety and reduce fall hazards. (Vote: 10-3)

E73-24

Individual Consideration Agenda

Public Comment GROVE-PC4:

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests Disapproved

Reason: We are asking for disapproval because the proposed text is too restrictive, and does not meet the intent expressed by the proponents. We agree with the concept for improved visualization of stairways, but we feel there are too many issues with the language and enforcement requirement in the approved text.

There were questions raised during the testimony about the language for the stripe location not being as clear and precise as found in the provisions for luminous stripes in Section 1025 - both for distance from the nosing and the width of the stairway.

The current text will not provide the contrast that the proponents desire. Just being lighter or darker than the stairway would be anything. Below are two examples that would comply but are not distinct.

Requiring stripes on every riser is not needed. Once a person is on a stairway their gait is established in two steps; and there are handrails for assistance. California has addressed this in their provisions for a stripe at the top and bottom of each stair run. It may serve the purpose better for requirement for contrast between the handrail and the wall.

The provisions apply to exit stairways, but much of the testimony from the proponents applied to exist access stairways, or stairways on the exterior that are part of exit discharge. These provisions do not address those locations.

The proposal does not address what happens for exterior stairways where the materials change colors when they are wet - like concrete and wood. How is the contrast maintained?

The proponent talked about painting the stripes. Paint wears off - so there is a question of maintenance.

This proposal is submitted by the ICC Building Code Action Committee (BCAC).

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2023 and 2024 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC webpage.

Cost Impact: The net effect of the Public Comment (PCH) and code change proposal will not increase or decrease the cost of construction

No change to code.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

E86-24

IBC: 1014.10; IFC: [BE] 1014.10

Proposed Change as Submitted

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org)

2024 International Building Code

Revise as follows:

1014.10 Intermediate handrails. *Stairways* with a required width of greater than 60 inches, shall have intermediate *handrails* located in such a manner that all portions of the *stairway* minimum width or required capacity are within 30 inches (762 mm) of a *handrail*. On monumental *stairs*, where intermediate handrails are required, *handrails* shall be located along the most direct path of egress travel.

2024 International Fire Code

Revise as follows:

[BE] 1014.10 Intermediate handrails. *Stairways* with a required width of greater than 60 inches, shall have intermediate *handrails* located in such a manner that all portions of the *stairway* minimum width or required capacity are within 30 inches (762 mm) of a *handrail*. On monumental *stairs*, where intermediate handrails are required, *handrails* shall be located along the most direct path of egress travel.

Reason: The intermediate handrail requirement can be inadvertently read to require an intermediate handrail every 5', or to require a center handrail with a center door. This is a clarification for where they would be required. This is not a technical change.

Where there is sufficient distance for occupants to navigate to the sides of a monumental stairway the most direct path of egress, the centerline of the door to the exit, may not be the natural path.

This modification gives guidance to the building official to allow intermediate handrails to be installed in the correct locations.

This proposal is submitted by the ICC Building Code Action Committee (BCAC).

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2023 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC webpage.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This is a clarification for the requirements for a central handrail on wider stairways.

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: While some of the committee felt that this was a clarification, where the handrail overlaps the required stairway width, the stairway can be wider than 60" and a person could still be within 30" of a handrail. The confusion is a misinterpretation of the

difference between provided stairway width and required stairway width. See also E87-24. (Vote: 9-5)

E86-24

Public Hearing Results (CAH2)

Committee Action: **None-PC (Public Comment)**

Committee Reason: Comments discussed but no new action was taken by the committee. See Reason statement from CAH #1 action.

E86-24

Individual Consideration Agenda

Public Comment GROVE-PC1:

IBC: 1014.10; IFC: [BE] 1014.10

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests As Modified by Public Comment (PCH)

Replace as follows:

2024 International Building Code

Revise as follows:

1014.10 Intermediate handrails. *Stairways* with a required width of greater than 88 inches (2235 mm), shall have intermediate *handrails* located in such a manner that all portions of the *stairway* minimum width or required capacity are within 30 inches (762 mm) of a *handrail*. On monumental *stairs*, *handrails* shall be located along the most direct path of egress travel.

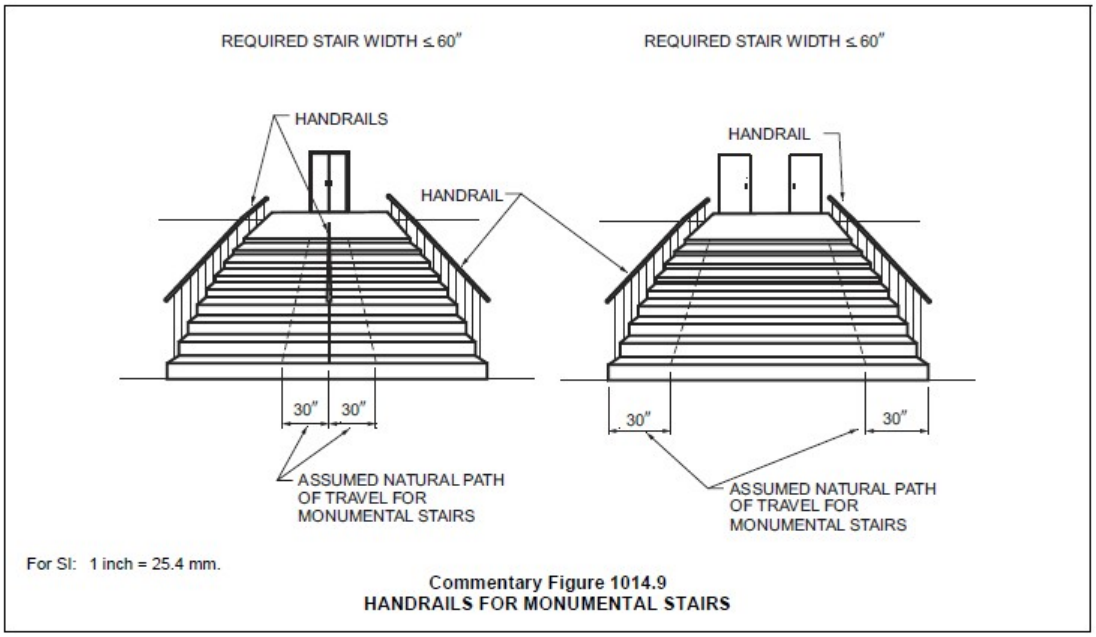
2024 International Fire Code

Revise as follows:

[BE] 1014.10 Intermediate handrails. *Stairways* with a required width of greater than 88 inches (2235 mm), shall have intermediate *handrails* located in such a manner that all portions of the *stairway* minimum width or required capacity are within 30 inches (762 mm) of a *handrail*. On monumental *stairs*, *handrails* shall be located along the most direct path of egress travel.

Reason: The intent of the original proposal was a clarification for where intermediate handrails were required. There was a lot of discussion on the allowances for handrails overlapping the required width of the stairway. There were concerns raised on where a center handrail could actually be an obstruction for the required capacity needed for emergency evacuation. The BCAC has worked with interested parties to try and develop a consensus proposal that will address the issues raised during the testimony and by Egress committee members.

The current text requires a handrail to be within 30 inches of the required width of the stairway. This is illustrated in the commentary for stairways that are actually wider than the required width.

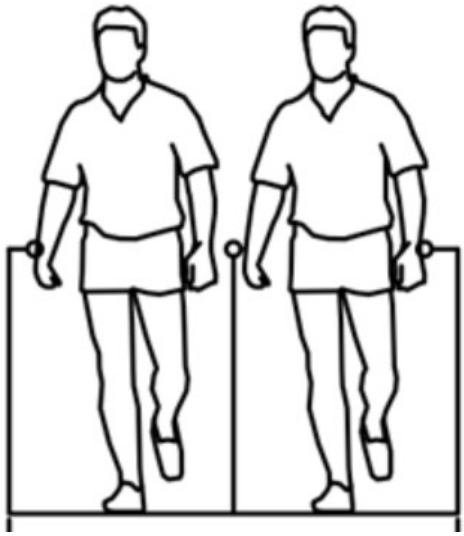


Commentary Figure 1014.9
HANDRAILS FOR MONUMENTAL STAIRS

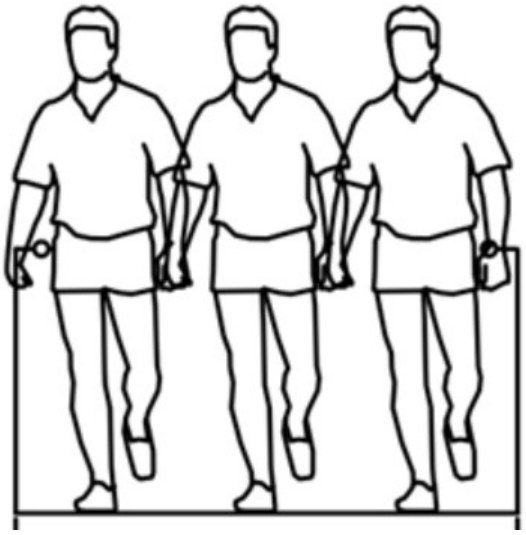
The concern is, that when the required and actual width is 60-inches to 88-inches, a center handrail could actually be an obstruction for the occupants that were trying to egress.

There were studies done on stepped aisles with a center handrail in stadiums used for the Olympics when they were held in Canada. This is the basis for the 30-inch maximum reach for handrails in order to arrest a fall. However, there needs to be a balance between reach for the handrail and sufficient capacity for the stairway. (Note that this requirement is not tied to distance between handrails because handrails can be over the stairway, over the stringer, or even outside of the stairway.)

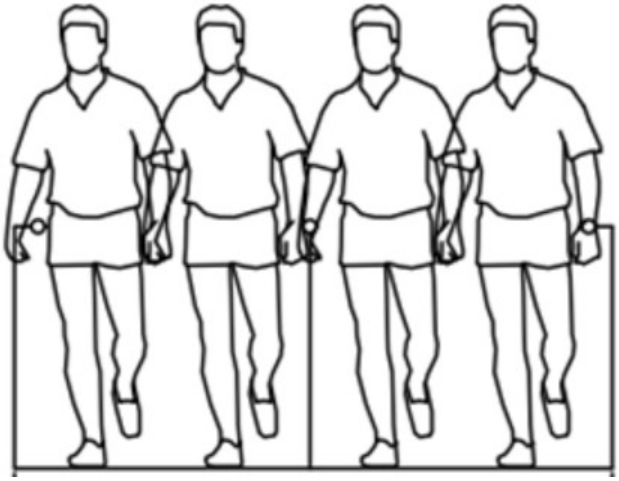
Based on the 44-inch corridor width, we are assuming a minimum of 22 inches is required for persons to pass each other or walk side by side. So for three people to walk down a stairway side by side, you need 66 inches; and for four people you need 88 inches. See examples below.



Example of 60 inch required width stairway with current required center handrail.



Example of 66 inch width stairway required for large capacity egress without a center handrail.



Example of 88 inch or wider stairways.

The attempt here is to balance the capacity requirements with access to handrails to arrest a fall. It is recommended that an 88 inch width (with current allowances for handrails to overlap the required stairway width), would be a good balance for public safety. The average person is wider at their shoulders than at their hips, so handrail overlap should not be an obstruction. In most cases, this also allows for sufficient capacity to be determined in construction when the stairway is built, but the handrails are not yet installed.

This is NOT intended to require additional handrails where the stairway is much wider than required.

Monumental stairway at Lincoln Memorial.

Cost Impact: Decrease

Estimated Immediate Cost Impact:

The cost of an intemediate handrial is dependent on the length of the stairway and the details of the handrails. Average cost of a handrail is $30 or more per foot for wood, and $40 or more per foot for steel.

Estimated Immediate Cost Impact Justification (methodology and variables):

The proposed comment will allow for a wider stairway before requiring an intermediate handrail. This will allow for savings by eliminating the cost to fabricate/install the intermediate handrail for stairs with a required egress width between 60" and 88".

E89-24

IBC: 1015.2; IFC: [BE] 1015.2

Proposed Change as Submitted

Proponents: John Grenier, representing National Council of Structural Engineers' Associations (NCSEA) (jgrenier@greniereng.com)

2024 International Building Code

Revise as follows:

1015.2 Where required. *Guards* shall be located along open-sided walking surfaces, such as *mezzanines*, *equipment platforms*, *aisles*, *stairs*, *ramps* and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side, ~~and~~ at the perimeter of occupiable roofs, and at walking surfaces near retaining walls in accordance with Section 1807.2.5. *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9.

Exceptions: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of *stages* and raised *platforms*, including *stairs* leading up to the *stage* and raised *platforms*.
3. On raised *stage* and *platform* floor areas, such as runways, *ramps* and side *stages* used for entertainment or presentations.
4. At vertical openings in the performance area of *stages* and *platforms*.
5. At elevated walking surfaces appurtenant to *stages* and *platforms* for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross *aisles* in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail systems.
9. Portions of an *occupiable roof* located less than 30 inches (762 mm) measured vertically to adjacent unoccupiable roof areas where *approved guards* are present at the perimeter of the roof.
10. At portions of an *occupiable roof* where an *approved* barrier is provided.

2024 International Fire Code

Revise as follows:

[BE] 1015.2 Where required. *Guards* shall be located along open-sided walking surfaces, such as *mezzanines*, equipment platforms, *aisles*, *stairs*, *ramps* and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side, ~~and~~ at the perimeter of *occupiable roofs*, and at walking surfaces near retaining walls in accordance with Section 1807.2.5 of the International Building Code. *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9 of the International Building Code.

Exception: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including *stairs* leading up to the stage and raised platforms.
3. On raised stage and platform floor areas, such as runways, *ramps* and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.

5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross *aisles* in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail systems.
9. Portions of an *occupiable roof* located less than 30 inches (762 mm) measured vertically to adjacent unoccupiable roof areas where approved guards are present at the perimeter of the roof.
10. At portions of an *occupiable roof* where an *approved* barrier is provided.

Reason: 1. To clarify that walls and retaining walls associated with a building or a site, also require Guards to protect against falls.

2. Section **1807.2.5 Guards** was added to the 2024 IBC via code change proposal S157-22. The proposed new language in Section 1015.2 will be a pointer to that section.

3. The 2021 IBC Commentary states “Where one or more sides of a walking surface are open to the floor level or grade below, a guard system must be provided to minimize the possibility of occupants accidentally falling to the surface below”. The pointer to section 1807.2.5 is important to eliminate potential confusion and possible misunderstanding that walls and retaining walls are not governed by the IBC.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

The requirement for guards at retaining walls is in Section 1807.2.5, so this is just pointing to that guard requirement.

E89-24

Public Hearing Results (CAH1)

Committee Action: **As Modified by Committee (AMC1)**

Committee Modification:
2024 International Building Code

1015.2 Where required. *Guards* shall be located along open-sided walking surfaces, such as *mezzanines*, *equipment platforms*, *aisles*, *stairs*, *ramps* and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side, at the perimeter of occupiable roofs, and at ~~walking surfaces near~~ retaining walls in accordance with Section 1807.2.5. *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9.

Exceptions: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of *stages* and raised *platforms*, including *stairs* leading up to the *stage* and raised *platforms*.
3. On raised *stage* and *platform* floor areas, such as runways, *ramps* and side *stages* used for entertainment or presentations.
4. At vertical openings in the performance area of *stages* and *platforms*.
5. At elevated walking surfaces appurtenant to *stages* and *platforms* for access to and utilization of special lighting or equipment.

6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross *aisles* in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail systems.
9. Portions of an *occupiable roof* located less than 30 inches (762 mm) measured vertically to adjacent unoccupiable roof areas where *approved guards* are present at the perimeter of the roof.
10. At portions of an *occupiable roof* where an *approved* barrier is provided.

2024 International Fire Code

[BE] 1015.2 Where required. *Guards* shall be located along open-sided walking surfaces, such as *mezzanines*, equipment platforms, *aisles*, *stairs*, *ramps* and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side, at the perimeter of *occupiable roofs*, and at ~~walking surfaces near~~ retaining walls in accordance with Section 1807.2.5 of the International Building Code. *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9 of the International Building Code.

Exception: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including *stairs* leading up to the stage and raised platforms.
3. On raised stage and platform floor areas, such as runways, *ramps* and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.
5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross *aisles* in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail systems.
9. Portions of an *occupiable roof* located less than 30 inches (762 mm) measured vertically to adjacent unoccupiable roof areas where approved guards are present at the perimeter of the roof.
10. At portions of an *occupiable roof* where an *approved* barrier is provided.

Committee Reason: The modification removed subjective language. The requirement should be in the guards section, not in Section 1807.2.5, however, until this gets relocated, the proposal added a necessary pointer for guards on retaining walls. (Vote: 12-2)

E89-24

Public Hearing Results (CAH2)

Committee Action: **As Modified by Committee (AMC2)**

Approved Comments: Comment 1

Committee Modification: Revises the comment as follows:

2024 International Building Code

1015.2 Where required. *Guards* shall be located along open-sided walking surfaces, such as *mezzanines*, *equipment platforms*, *aisles*, *stairs*, *ramps* and landings, and adjacent to retaining walls that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side and at the perimeter of *occupiable roofs*.

~~Guards shall be located at retaining walls having an upper grade level that is more than 30 inches (762 mm) measured vertically above the lower grade level at any point within 36 inches (914 mm) horizontally from the exposed face of wall, and is open to unanticipated pedestrian access that would have the possibility of a fall to a lower level such as a walking surface, parking area, playground, yard, planter or similar use areas.~~

Guards shall be adequate in strength and attachment in accordance with Section 1607.9.

Exceptions: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of *stages* and raised *platforms*, including *stairs* leading up to the *stage* and raised *platforms*.
3. On raised *stage* and *platform* floor areas, such as runways, *ramps* and side *stages* used for entertainment or presentations.
4. At vertical openings in the performance area of *stages* and *platforms*.
5. At elevated walking surfaces appurtenant to *stages* and *platforms* for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross *aisles* in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail systems.
9. Portions of an *occupiable roof* located less than 30 inches (762 mm) measured vertically to adjacent unoccupiable roof areas where *approved guards* are present at the perimeter of the roof.
10. At portions of an *occupiable roof* where an *approved* barrier is provided.
11. At retaining walls in locations that cannot be accessed by the public ~~as determined by the building official~~.

2024 International Fire Code

[BE] 1015.2 Where required.

Guards shall be located along open-sided walking surfaces, such as *mezzanines*, *equipment platforms*, *aisles*, *stairs*, *ramps* and landings, and adjacent to retaining walls that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side and at the perimeter of *occupiable roofs*.~~Guards shall be located at retaining walls having an upper grade level that is more than 30 inches (762 mm) measured vertically above the lower grade level at any point within 36 inches (914 mm) horizontally from the exposed face of wall, and is open to unanticipated pedestrian access that would have the possibility of a fall to a lower level such as a walking surface, parking area, playground, yard, planter or similar use areas.~~ *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9.

Exception: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including *stairs* leading up to the stage and raised platforms.
3. On raised stage and platform floor areas, such as runways, *ramps* and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.
5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.

7. In assembly seating areas at cross *aisles* in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail systems.
9. Portions of an *occupiable roof* located less than 30 inches (762 mm) measured vertically to adjacent unoccupiable roof areas where approved guards are present at the perimeter of the roof.
10. At portions of an *occupiable roof* where an *approved* barrier is provided.
11. At retaining walls in locations that cannot be accessed by the public ~~as determined by the building code official~~.

Committee Reason: The modification removed the redundant language in the comment for retaining walls. The modification to the exception removed 'as determined by the building official' because the building official interprets everything in the code - therefore, this is also redudent language. The comment moved the guard requirements for guards from Chapter 18 to Section 1015 where it belongs. (Vote: 10-3)

E89-24

Individual Consideration Agenda

Public Comment GROVE-PC1:

IBC: 1015.2; IFC: [BE] 1015.2

Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests As Modified by Public Comment (PCH)

Further modify as follows:

2024 International Building Code

Revise as follows:

1015.2 Where required. *Guards* shall be located along open-sided, designated walking surfaces, such as *mezzanines*, *equipment platforms*, *aisles*, *stairs*, *ramps* and landings, and adjacent to retaining walls that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side, and at the perimeter of *occupiable roofs*. *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9.

Exceptions: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of *stages* and raised *platforms*, including *stairs* leading up to the *stage* and raised *platforms*.
3. On raised *stage* and *platform* floor areas, such as runways, *ramps* and side *stages* used for entertainment or presentations.
4. At vertical openings in the performance area of *stages* and *platforms*.
5. At elevated walking surfaces appurtenant to *stages* and *platforms* for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross *aisles* in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail systems.
9. Portions of an *occupiable roof* located less than 30 inches (762 mm) measured vertically to adjacent unoccupiable roof areas where *approved guards* are present at the perimeter of the roof.

10. At portions of an *occupiable roof* where an *approved* barrier is provided.

~~11. At retaining walls in locations that cannot be accessed by the public.~~

2024 International Fire Code

Revise as follows:

[BE] 1015.2 Where required. *Guards* shall be located along open-sided walking, designated surfaces, such as *mezzanines*, equipment platforms, *aisles*, *stairs*, *ramps* and landings, and adjacent to retaining walls that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side, and at the perimeter of *occupiable roofs*. *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9 of the International Building Code.

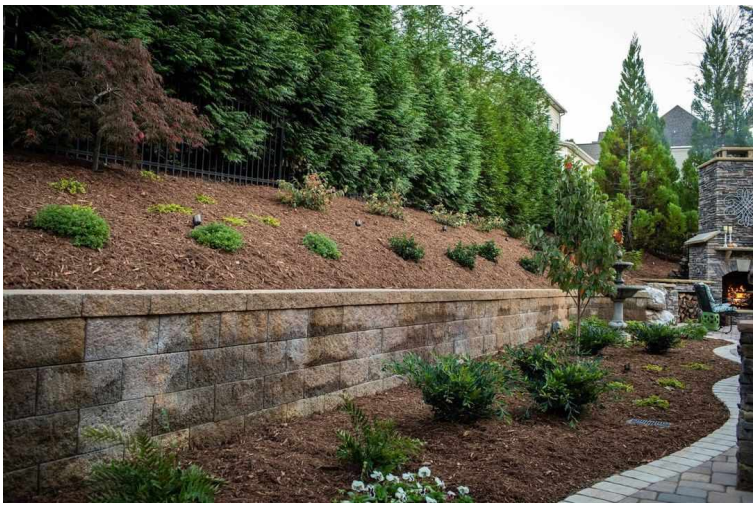
Exception: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including *stairs* leading up to the stage and raised platforms.
3. On raised stage and platform floor areas, such as runways, *ramps* and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.
5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross *aisles* in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail systems.
9. Portions of an *occupiable roof* located less than 30 inches (762 mm) measured vertically to adjacent unoccupiable roof areas where approved guards are present at the perimeter of the roof.
10. At portions of an *occupiable roof* where an *approved* barrier is provided.
11. ~~At retaining walls in locations that cannot be accessed by the public.~~

Reason: We agree with moving the requirements for guards at retaining walls from Section 1807.2.5 to Section 1015.2 so that the guard requirements are together. This was accomplished in CAH2.

A designated walking surface, like a sidewalk, boardwalk, or gravel path, along a retaining wall should include a guard. However, the exception could be read to imply that any retaining wall that was not in a restricted area is required to have a guard. The public can walk across a large field of dirt or grass to access a retaining wall - but is that really where you expect people to be walking so that you need a guard?

The proposed modification should clarify where a guard is required without the ambiguity.Below are examples where always asking for a guard would not be reasonable. In the first example, you can see the guard along the walking surface, significantly removed from the retaining wall.



This proposal is submitted by the ICC Building Code Action Committee (BCAC).

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2023 and 2024 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC webpage.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

The modification would restore the original intent of the code for where guards are required.

E111-24

IBC: 1028.2; IFC: [BE] 1028.2

Proposed Change as Submitted

Proponents: Ali Fattah, City of San Diego Development Services Department, representing San Diego Area Chapter of ICC (afattah@sandiego.gov)

2024 International Building Code

Revise as follows:

1028.2 Exit discharge. *Exits* shall discharge directly to the exterior of the *building*. The *exit discharge* shall be at grade or shall provide a direct path of egress travel to grade. The *exit discharge* shall not reenter a *building*. The combined use of Exceptions 1 and 2 shall not exceed 50 percent of the number and minimum width or required capacity of the required *exits*.

Exceptions:

1. Not more than 50 percent of the number and minimum width or required capacity of *interior exit stairways* and *ramps* is permitted to egress through areas, including *atriums*, on the level of discharge provided that all of the following conditions are met:
   1.1. Discharge of *interior exit stairways* and *ramps* shall be provided with a free and unobstructed path of travel to an exterior *exit* door and such *exit* is readily visible and identifiable from the point of termination of the enclosure.
   1.2. The entire ~~area~~ story of the *level of exit discharge* is separated from ~~areas~~ stories below by construction conforming to the *fire-resistance rating* for the enclosure.
   1.3. The egress path from the *interior exit stairway* and *ramp* on the *level of exit discharge* is protected throughout by an *approved automatic sprinkler system* . Portions of the *level of exit discharge* with access to the egress path shall be either equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of *interior exit stairways* or *ramps.*
   1.4. Where a required *interior exit stairway* or *ramp* and an *exit access stairway* or *ramp* serve the same floor level and terminate at the same *level of exit discharge*, the termination of the *exit access stairway* or *ramp* and the *exit discharge* door of the *interior exit stairway* or *ramp* shall be separated by a distance of not less than 30 feet (9144 mm) or not less than one-fourth the length of the maximum overall diagonal dimension of the *building*, whichever is less. The distance shall be measured in a straight line between the *exit discharge* door from the *interior exit stairway* or *ramp* and the last tread of the *exit access stairway* or termination of slope of the *exit access ramp*.
2. Not more than 50 percent of the number and minimum width or required capacity of the *interior exit stairways* and *ramps* is permitted to egress through a vestibule provided that all of the following conditions are met:
   2.1. The entire area of the vestibule is separated from areas below by construction conforming to the *fire-resistance rating* of the *interior exit stairway* or *ramp enclosure*.
   2.2. The depth from the exterior of the *building* is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
   2.3. The area is separated from the remainder of the *level of exit discharge* by a *fire partition* constructed in accordance with Section 708.
      Exception: The maximum transmitted temperature rise is not required.
   2.4. The area is used only for *means of egress* and *exits* directly to the outside.
3. *Horizontal exits* complying with Section 1026 shall not be required to discharge directly to the exterior of the *building*.

2024 International Fire Code

Revise as follows:

[BE] 1028.2 Exit discharge. *Exits* shall discharge directly to the exterior of the building. The *exit discharge* shall be at grade or shall provide a direct path of egress travel to grade. The *exit discharge* shall not reenter a building. The combined use of Exceptions 1 and 2 shall not exceed 50 percent of the number and minimum width or required capacity of the required *exits*.

Exceptions:

1. Not more than 50 percent of the number and minimum width or required capacity of *interior exit stairways* and *ramps* is permitted to egress through areas, including atriums, on the *level of discharge* provided that all of the following conditions are met:
   1.1. Discharge of *interior exit stairways* and *ramps* shall be provided with a free and unobstructed path of travel to an exterior exit door and such *exit* is readily visible and identifiable from the point of termination of the enclosure.
   1.2. The entire ~~area~~ story of the *level of exit discharge* is separated from ~~areas~~ stories below by construction conforming to the *fire-resistance rating* for the enclosure.
   1.3. The egress path from the *interior exit stairway* and *ramp* on the *level of exit discharge* is protected throughout by an *approved automatic sprinkler system* . Portions of the *level of exit discharge* with access to the egress path shall be either equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of *interior exit stairways* or *ramps.*
   1.4. Where a required *interior exit stairway* or *ramp* and an *exit access stairway* or *ramp* serve the same floor level and terminate at the same *level of exit discharge*, the termination of the *exit access stairway* or *ramp* and the exit discharge door of the *interior exit stairway* or *ramp* shall be separated by a distance of not less than 30 feet (9144 mm) or not less than one-fourth the length of the maximum overall diagonal dimension of the building, whichever is less. The distance shall be measured in a straight line between the exit discharge door from the *interior exit stairway* or *ramp* and the last tread of the *exit access stairway* or termination of slope of the *exit access ramp*.
2. Not more than 50 percent of the number and minimum width or required capacity of the *interior exit stairways* and *ramps* is permitted to egress through a vestibule provided that all of the following conditions are met:
   2.1. The entire area of the vestibule is separated from areas below by construction conforming to the *fire-resistance rating* of the *interior exit stairway* or *ramp* enclosure.
   2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
   2.3. The area is separated from the remainder of the *level of exit discharge* by a *fire partition* constructed in accordance with Section 708 of the International Building Code.
      Exception: The maximum transmitted temperature rise is not required.
   2.4. The area is used only for *means of egress* and *exits* directly to the outside.
3. *Horizontal exits* complying with Section 1026 shall not be required to discharge directly to the exterior of the building.

Reason: This is an editorial code change that helps make code application of the requirements more consistent. Interior exit stairway protection terminates at horizontal exits and exterior exit doorways, or the stairway is extended to exterior exit doorways with exit passageways.

As written the IBC uses the undefined term area that some code users interpret to be the portion of the story at the level of exit discharge used to access the exterior exit doorways. Other code users interpret the requirement to apply to the entire story.

The latter interpretation is consistent with the IBC's philosophy that the level of protection along an egress path is not reduced and that the exceptions should be equivalent. Exit passageways, shaft enclosures protecting interior exit stairways and horizontal exits provide protection from the entire story. Additionally, fire sprinkler protection should be throughout the story since the stairway protection protects the stairway from the entire story.

When extended with an exit passageway the path of egress is defined and the protection has a top and sides and a bottom. As a consequence, at a minimum when exception 1.3 is applied the floor between the fire barriers should be fire resistance rated and when the fire sprinkler tradeoff is selected the entire floor above the story below should be protected. Most of the cases we have seen were when the entire story is protected with fire sprinklers.

Cost Impact: Increase

Estimated Immediate Cost Impact:

The increased cost of spray fireproofing between IIB and IIA construction is approximately $11 per sq ft. Between IB and IA, it is similar.

Estimated Immediate Cost Impact Justification (methodology and variables):

The cost was determined by analyzing the ICC Building Valuation Table and determining average variations across types of construction and occupancies for Type II and Type I.

Group (2021 International Building Code)	IA			IB			IIA		
A-1 Assembly, theaters, with stage	335.89	97%	$13.44	324.58	98%	$12.98	316.94	$12.68	98%
A-1 Assembly, theaters, without stage	307.39	96%	$12.30	296.08	97%	$11.84	288.44	$11.54	97%
A-2 Assembly, nightclubs	269.94	97%	$10.80	261.93	97%	$10.48	254.48	$10.18	97%
A-2 Assembly, restaurants, bars, banquet halls	268.94	97%	$10.76	260.93	97%	$10.44	252.48	$10.10	97%
A-3 Assembly, churches	311.88	96%	$12.48	300.57	97%	$12.02	292.93	$11.72	97%
A-3 Assembly, general, community halls, libraries, museums	266.07	96%	$10.64	254.76	97%	$10.19	246.12	$9.84	97%
A-4 Assembly, arenas	306.39	96%	$12.26	295.08	97%	$11.80	286.44	$11.46	97%
B Business	260.69	96%	$10.43	251.13	96%	$10.05	241.86	$9.67	96%
E Educational	273.46	97%	$10.94	263.96	97%	$10.56	255.62	$10.22	97%
F-1 Factory and industrial, moderate hazard	160.20	95%	$6.41	152.78	94%	$6.11	143.34	$5.73	94%
F-2 Factory and industrial, low hazard	159.20	95%	$6.37	151.78	94%	$6.07	143.34	$5.73	94%
H-1 High Hazard, explosives	149.46	95%	$5.98	142.04	94%	$5.68	133.60	$5.34	94%
H234 High Hazard	149.46	95%	$5.98	142.04	94%	$5.68	133.60	$5.34	94%
H-5 HPM	260.69	96%	$10.43	251.13	96%	$10.05	241.86	$9.67	96%
I-1 Institutional, supervised environment	262.22	96%	$10.49	252.95	97%	$10.12	244.31	$9.77	97%
I-2 Institutional, hospitals	434.15	98%	$17.37	424.59	98%	$16.98	415.32	$16.61	98%
I-2 Institutional, nursing homes	302.01	97%	$12.08	292.45	97%	$11.70	283.18	$11.33	97%
I-3 Institutional, restrained	295.86	97%	$11.83	286.31	97%	$11.45	277.03	$11.08	97%
I-4 Institutional, day care facilities	262.22	96%	$10.49	252.95	97%	$10.12	244.31	$9.77	97%
M Mercantile	201.37	96%	$8.05	193.36	96%	$7.73	184.91	$7.40	96%
R-1 Residential, hotels	264.67	97%	$10.59	255.41	97%	$10.22	246.77	$9.87	97%
R-2 Residential, multiple family	221.32	96%	$8.85	212.06	96%	$8.48	203.42	$8.14	96%
R-3 Residential, one- and two-family [d]	209.61	97%	$8.38	203.74	98%	$8.15	198.94	$7.96	98%
R-4 Residential, care/assisted living facilities	262.22	96%	$10.49	252.95	97%	$10.12	244.31	$9.77	97%
S-1 Storage, moderate hazard	148.46	95%	$5.94	141.04	93%	$5.64	131.60	$5.26	93%
S-2 Storage, low hazard	147.46	95%	$5.90	140.04	94%	$5.60	131.60	$5.26	94%
U Utility, miscellaneous	114.09	94%	$4.56	107.37	93%	$4.29	99.89	$4.00	93%
Average		96%	$9.79		96%	$9.43		$9.09	96%

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: This proposal was disapproved. It is not necessary to protect the entire floor where the intent is to protect the area where occupants are discharging. Protecting stories below would include protecting the entire supporting elements and would be a high

cost for minimal benefits. Adding "stories" would not address crawl spaces or other areas below that are not a true story. (Vote: 13-0)

E111-24

Public Hearing Results (CAH2)

Committee Action: **As Modified by Committee (AMC2)**

Approved Comments: Comment 1

Committee Reason: The comment clarifies that 'area' is the entire story, not just under the lobby that is serving as the path for exit discharge. By adding 'useable', this would also require a rated floor over spaces such as crawl spaces or open storage areas. (Vote: 7-5)

E111-24

Individual Consideration Agenda

Public Comment GROVE-PC1:

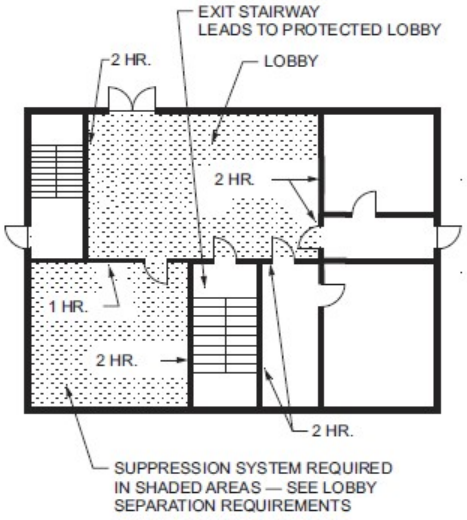
Proponents: Jeff Grove, Chair, representing Building Code Action Committee (BCAC) (bcac@iccsafe.org) requests Disapproved

Reason: E111-24 was disapproved in CAH1 because the committee felt that asking for the entire first floor to be rated instead of just the floor under the lobby used for exist discharge was not necessary. The committee had it right the first time.

The modification in CAH2 not only requires the entire story over a basement to be rates, but could be interpreted to require the entire floor to be rated over a crawl space or open area where a building is raised for flood or parking. The added phrase "or useable areas below" is too open for interpretation to be good code text.

We are requesting disapproval and asking the membership to move the text back to the way it was in 2024 IBC and IFC. Below is the figure from the commentary. A fire under other portions of the floor would not have a hazard to the lobby. It is also important to note that this could be a building of a substantial size, with the lobby being a very small portion of the footprint of the building.

The cost impact in CAH1 was based the increase on adding spray fireproofing in some construction types. That does not work well in exterior environments. Creating a rated floor system could be a much higher cost. In addition, rating the floor would cause all the supporting construction to be rated; depending on the number of basements, this could extend several floors.



Commentary Figure 1028.2(1)
PROTECTION OF LOBBY WITH AN EXIT DISCHARGE

This proposal is submitted by the ICC Building Code Action Committee (BCAC).

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2023 and 2024 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC webpage.

Cost Impact: The net effect of the Public Comment (PCH) and code change proposal will not increase or decrease the cost of construction

No change to code.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction