

IBC - General



2019 GROUP B PUBLIC COMMENT AGENDA

OCTOBER 23 - 30, 2019
RIO HOTEL AND CONVENTION CENTER
LAS VEGAS, NV

2019 Public Comment Agenda

First Printing

Publication Date: September 2019

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by

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PRINTED IN THE USA

G2-19

IBC@: [BS] 202; IEBC@: [BS] 202

Proposed Change as Submitted

Proponents: David Bonowitz, representing Self (dbonowitz@att.net)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE

2018 International Building Code

Revise as follows:

[BS] DANGEROUS. Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgment of any portion, member, appurtenance or ornamentation of the building or structure under ~~service loads~~ permanent, routine, or frequent loads; under actual loads already in effect; or under snow, wind, rain, flood, earthquake, or other environmental loads when such loads are imminent.

2018 International Existing Building Code

Revise as follows:

[BS] DANGEROUS. Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation, or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgment of any portion, member, appurtenance or ornamentation of the building or structure under ~~service loads~~ permanent, routine, or frequent loads; under actual loads already in effect; or under snow, wind, rain, flood, earthquake, or other environmental loads when such loads are imminent.

Reason: This proposal solves a problem with the definition of Dangerous going back to 2010. This proposal presents the consensus of the proponents, the IBC-S committee, and the Public Comment voters regarding proposal G4-16 in the last cycle.

The problem involves the words "service loads" in the current definition. With IBC Interpretation 23-10 (issued 12/8/2010), ICC interpreted "service loads" to be the same as "nominal" or unfactored loads, but this is incorrect and contrary to the intent of the definition when it was written.

In the last cycle, the IBC-S committee deliberated over a number of ways to clarify the intent and settled on the best solution: simply to remove the words "service loads" and replace them with the text shown here. This solution avoids any conflict with definitions or interpretations of "service loads" in other codes or standards. With this consensus, the IBC-S committee Disapproved G4 and asked the proponent to revise the proposal accordingly with a public comment.

At the PCH, G4-16 was easily approved as modified (and as shown here) by a show of hands. 58% of OGV voters supported the modified proposal, but since the PCH hand votes could not be added, the OGV vote fell short of the 2/3 requirement, and the clear consensus from the IBC-S committee, the proponent, and the PCH voters could not be approved.

For those concerned about interpretation of any of the new text, note: 1. This issue was already considered by IBC-S and by the PCH voters, who approved the text as shown. 2. The CURRENT definition already includes wording -- "necessary support," "significant risk" -- that requires some interpretation and judgment. 3. The whole purpose of this definition, as documented clearly in the reason statements when the definition was changed several cycles ago, is to give discretion to the code official and to rely on the code official's judgment, so that a designation of dangerous, and protection of the public, need not wait for the results of a quantitative test or analysis.

Bibliography: IBC Interpretation 23-10 is available at https://www2.iccsafe.org/cs/committeeArea/pdf_file/EB_09_23_10.pdf.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The proposal merely clarifies the current code intent.

G2-19

Public Hearing Results

Committee Action:

As Submitted

Committee Reason: This proposal solves a problem with the definition of Dangerous going back to 2010. This proposal presents the consensus of the proponents, the IBC-S committee, and the Public Comment voters regarding proposal G4-16 in the last cycle. The problem involves the words "service loads" in the current definition. With IBC Interpretation 23-10 (issued 12/8/2010), ICC interpreted "service loads" to be the same as "nominal" or unfactored loads, but this is incorrect and contrary to the intent of the definition when it was written. (Vote: 14-0)

Assembly Action:

None

G2-19

Individual Consideration Agenda

Public Comment 1:

IBC®: [BS] 202; IEBC®: [BS] 202

Proponents:

David Bonowitz, representing Self (dbonowitz@att.net)

requests As Modified by Public Comment

Modify as follows:

2018 International Building Code

[BS] DANGEROUS. Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgment of any portion, member, appurtenance or ornamentation of the building or structure under permanent, routine, or frequent loads; under actual loads already in effect; or under snow, wind, rain, flood, earthquake, or other environmental loads, when any such loads are imminent.

2018 International Existing Building Code

[BS] DANGEROUS. Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation, or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgement of any portion, member, appurtenance or ornamentation of the building or structure under permanent, routine, or frequent loads; under actual loads already in effect; or under snow, wind, rain, flood, earthquake, or other environmental loads, when any such loads are imminent.

Commenter's Reason: The IBC-S committee unanimously approved G2 as submitted, referencing a broad consensus developed over the past several cycles. During testimony, one committee member suggested that the meaning of the final phrase could be clarified by adding a comma to clarify that "such loads" refers to all of the load types covered in the proposal's final phrase (snow, wind, etc.), and not just the immediate antecedent, "other environmental loads."

This comment implements that suggestion.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction. The proposal merely clarifies the current code intent.

Public Comment# 2144

G10-19

IBC: [BS] 202

Proposed Change as Submitted

Proponents: Kristen Owen, Consultant, representing Self (kowen4568@gmail.com)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE

2018 International Building Code

Revise as follows:

[BS] TREATED WOOD. ~~Wood products that are conditioned to enhance fire-retardant or preservative properties.~~ modified to reduce deterioration and destruction by wood destroying organisms and fire .

Reason: The word "conditioned" in the current definition does not relate to Treated Wood. "Conditioned" references moisture control which is not part of the definition of Treated Wood.

This Code change proposal reflects a clearer definition of Treated Wood and brings the Code up to date by the inclusion of newer standards in the referenced American Wood Protection Association Standards.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a definition change only and therefore no cost change to construction.

G10-19

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposed code change does not improve upon the current definition.
(Vote: 13-1)

Assembly Action:

None

G10-19

Individual Consideration Agenda

Public Comment 1:

IBC@: [BS], 202 (New)

Proponents:

Paul Coats, representing American Wood Council (pcoats@awc.org)

requests As Modified by Public Comment

Replace as follows:

2018 International Building Code

[BS] TREATED WOOD. ~~Wood products that are conditioned to enhance fire-retardant or preservative properties.~~

FIRE-RETARDANT-TREATED WOOD. Wood products meeting the requirements of Section 2303.2 that exhibit reduced surface-burning characteristics and resist propagation of fire.

PRESERVATIVE-TREATED WOOD. Wood products meeting the requirements of Section 2303.1.9 that exhibit reduced susceptibility to damage by fungi, insects or marine borers.

Commenter's Reason: Terms in the current definition have become the subject of debate because they may not accurately describe treated wood in all potential code applications. Simply referring to the respective code sections will safeguard the definitions from inconsistency with the code requirements.

A general definition of "treated wood" is unnecessary since the code always qualifies the term "treated" with one of the two terms (fire-retardant-treated or preservative-treated). This code change deletes the general definition for treated wood and elevates the current sub-definitions to general definitions.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction. It will have no impact on cost.

Public Comment# 1586

Public Comment 2:

IBC@: [BS], 202 (New)

Proponents:

Marcelo Hirschler, representing GBH International (mmh@gbhint.com)

requests As Modified by Public Comment

Modify as follows:

2018 International Building Code

~~[BS] TREATED WOOD. Wood products that are conditioned to enhance fire-retardant or preservative properties.~~

FIRE-RETARDANT-TREATED WOOD. Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced surface-burning characteristics and resist propagation of fire.

PRESERVATIVE-TREATED WOOD. Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced susceptibility to damage by fungi, insects or marine borers.

Commenter's Reason: This public comment deletes the definition of treated wood, which is unnecessary, and replaces it by two separate, stand-alone, definitions of "fire-retardant-treated wood" and "preservative-treated wood". Throughout the code, the terms actually used are the separate definitions. In fact, there are two examples of the use of "untreated wood" and in both cases, the context explains what is meant. In 705.2.3.1 it means non fire-retardant wood and treated wood and in 2304.1.2.3 it means non preservative treated wood. The definition of treated wood tries to cover both aspects but fails to do so properly. In particular, it does not clarify that a key issue for use in the code is that it should be treated during manufacturing.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction. The code proposal deals with definitions only and is clarification.

Public Comment# 1457

Public Comment 3:

IBC@: [BS], 202 (New)

Proponents:

Kristen Owen, representing Kris Owen Consultant (kowen4568@gmail.com)

requests As Modified by Public Comment

Further modify as follows:

2018 International Building Code

~~[BS] TREATED WOOD. Wood products that are conditioned to enhance fire-retardant or preservative properties.~~

~~**Fire-retardant-treated wood.** Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced surface-burning characteristics and resist propagation of fire.~~

~~**Preservative-treated wood:** Wood products that, conditioned with chemicals by a pressure process or other means, exhibit reduced susceptibility to damage by fungi, insects or marine borers.~~

FIRE-RETARDANT-TREATED WOOD. Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced surface-burning characteristics and resist propagation of fire.

PRESERVATIVE -TREATED WOOD. Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced susceptibility to fungi, insects and marine borers.

Commenter's Reason: Since the term "Treated Wood" is not used in the IBC, there is no need for the term to be defined. However, the terms "Fire-retardant-treated wood" and "Preservative-treated wood" are used in many locations. This change will correctly define both terms and allow them to be placed in their correct location in Definitions.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction. There is no increase or decrease to the cost of construction as a result of this public comment and code change.

Public Comment# 1465

G12-19 Part I

IBC®: [BS] 202

Proposed Change as Submitted

Proponents: Don Scott, Representing National Council of Structural Engineers Association, representing Representing National Council of Structural Engineers Association (dscott@pcs-structural.com)

THIS IS A TWO PART PROPOSAL. PART I WILL BE HEARD BY THE IBC-STRUCTURAL COMMITTEE. PART II WILL BE HEARD BY THE IRC-BUILDING COMMITTEE. PLEASE CHECK THE RESPECTIVE HEARING AGENDAS.

2018 International Building Code

Revise as follows:

[BS] WINDBORNE DEBRIS REGION. Areas within hurricane-prone regions located:

1. Within 1 mile (1.61 km) of the ~~coastal~~ mean high-water line, where an Exposure D condition exists upwind at the waterline and the basic design wind speed, V , is 130 mph (58 m/s) or greater; or
2. In areas where the basic design wind speed is 140 mph (63.6 m/s) or greater.

For *Risk Category* II buildings and structures and *Risk Category* III buildings and structures, except health care facilities, the windborne debris region shall be based on Figure 1609.3.(1). For *Risk Category* IV buildings and structures and *Risk Category* III health care facilities, the windborne debris region shall be based on Figure 1609.3(2).

Reason: Significant confusion has arisen in hurricane-prone regions in trying to determine windborne debris regions because the term "coastal mean high waterline" is not a mapped or defined term. Due to this lack of definition, some jurisdictions have incorrectly interpreted areas within one mile of the mean high waterline along narrow inland tidal waterways to be in windborne debris regions. The primary intent behind paragraph No. 1, is that within one mile of the coast, hurricane wind speeds will be governed by the wind speed over the open water, i.e. an Exposure Category D rather than an inland Exposure Category C situation on which the basic wind speed and paragraph No. 2 are based. This CCP clarifies that the waterline has to be classified as an Exposure D in order for paragraph No. 1 to apply. It also deletes the word "coastal" since wind speed increases could occur at large inland waterways in hurricane-prone regions as well. Also, NOAA maintains a database of the "mean high waterline" values in the US, which can be used in conjunction with this definition.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This code change proposal is location dependent on its impact on construction costs, however by providing a definition of the windborne debris zone, it will eliminate confusion as to where to apply the windborne debris protection requirements.

G12-19 Part I

Public Hearing Results

Committee Action:

As Submitted

Committee Reason: The proposal eliminates the undefined term 'coastal', and the committee action is consistent with the action taken on Part II. (Vote: 14-0)

Assembly Action:

None

G12-19 Part I

Individual Consideration Agenda

Public Comment 1:

Proponents:

Gary Ehrlich, representing National Association of Home Builders (gehrlich@nahb.org)

requests Disapprove

Commenter's Reason: The purpose of this public comment is to urge disapproval of the proposed change to the wind-borne debris trigger. Contrary to the proponent's reason statement, this is a significant change that will cause more confusion than it eliminates and greatly expand where wind-borne debris protection is required.

The use of the word "coastal" in the current 130 mph trigger for wind-borne debris protection clearly implies an intent to trigger protection for sites near open water such as the Atlantic Ocean or the Gulf of Mexico. The current 130 mph trigger would not apply to water bodies such as fully landlocked lakes or rivers that do not feed directly into the ocean. It would not even apply to rivers that **do** open to the ocean if the shorelines of such rivers are more than one mile from the mean high-water line at the actual coast.

However, many such lakes or rivers are more than a mile wide in at least one direction and a site located upwind of that direction could be classified as Exposure D. Therefore, the proposed revision would in fact appear to capture sites near the shorelines of large inland lakes or wide rivers (whether open to the ocean or not) if the wind speed at the site also equals or exceeds 130 mph. Sites along wide bays and estuaries that are more than a mile from where such features open to the ocean or Gulf would also be captured.

A close examination of the 130-mph wind contour for Risk Category II buildings (the category that covers dwellings and most multifamily construction) identified several areas for which the revised definition would potentially trigger wind-borne debris protection where it is not already required. Notable examples include the following:

- Narraganset Bay and the Sakonnet River in RI near Providence, RI
- Shinnecock Bay on Long Island (Hampton Bays, Shinnecock Hills, East Quogue)
- Lake Mattamuskeet in Hyde County, North Carolina
- White Lake in Bladen County, North Carolina
- Lakes Moultrie and Marion in South Carolina
- Lake Houston northwest of Houston (near Atascocita)
- Lake Corpus Christi northwest of Corpus Christi

However, these areas, or similar areas, have not necessarily experienced widespread wind-borne debris damage in hurricanes. For example, sites where FEMA's MAT report on Hurricane Harvey specifically documented wind-borne debris impacts were in areas where the wind speed per the 2009 IRC and ASCE 7-05 (the locally-adopted editions at the time) required protection regardless of the proximity to the coast. Many of the sites were also within one mile of the Gulf of Mexico, so protection would be required even under the current coastal mean high-water line trigger. Similarly, where the Irma MAT report documented wind-borne debris damage in Ramrod and Little Torch Key, protection is already required based on the design wind speed and again, most of the area of both islands could be considered "within one mile of the coastal mean high-water line".

Even in Hurricane Katrina, wind-borne debris damage around Lake Pontchartrain (which is technically an estuary rather than an inland lake) was limited to specific conditions. The FEMA and NIST reports did not document wind-borne debris damage in areas such as Laplace, Madisonville, Mandeville and Lacombe, which all lie near where the 130 mph wind contour crosses Lake Pontchartrain. Reported wind-borne debris damage from Katrina primarily occurred in urban areas (e.g. downtown New Orleans) or suburban commercial areas (e.g. Slidell) where blow-off from aggregate roofs occurred, or in areas along the actual Gulf coastline where wind-borne debris protection would be required anyway as the ultimate wind speed is 140mph or higher.

The source of the change stems from discussions within the ASCE 7 committee over a request for interpretation. A corresponding change is being considered for the 2022 edition of ASCE 7, but as of the ICC public comment deadline balloting at the ASCE Wind Load Subcommittee (WLSC) level was not even complete. It is possible that based on responses to the WLSC ballot and (assuming the proposal advances) responses to Main Committee ballots, the eventual ASCE 7-22 language may have additional qualifiers or clarifications. Given the significant cost impacts that can result if impact-resistant glazing or impact-protective systems are required, it would be irresponsible for the I-Codes to get out in front of ASCE 7 and impose a huge unfunded mandate on the construction industry for limited benefit.

The Home Innovation Research Lab calculated the cost impact for installing common methods of wind-borne debris protection on a typical home with 360 square feet of glazing. The added cost was around \$1,800 a home if wood structural panels are used, \$3,400 if manually-operated hurricane shutters are used, and \$9,600 if impact-resistant glazing is provided.

Contrary to the proponent's statement the proposed revision will not increase the cost of construction, these are clearly significant impacts that can price thousands of people in an area out of a new home. This negative impact on affordability is particularly concerning where the revised definition may impact a small, rural, lower-income community that may be miles from the Atlantic or Gulf coast but just happens to be adjacent to a lake or river large enough to trigger Exposure D conditions. Homebuyers and renters in these communities or other communities impacted by this change may find themselves only able to afford older, existing houses that were not built to any edition of the IRC and are significantly less resistant to a variety of hazards than newer homes.

Bibliography: FEMA 549 - Mitigation Assessment Team Report - *Hurricane Katrina in the Gulf Coast* (July 2006).
FEMA P-2022 - Mitigation Assessment Team Report - *Hurricane Harvey in Texas* (March 2019).

FEMA P-2023 - Mitigation Assessment Team Report - *Hurricane Irma in Florida* (December 2018).

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction No change to code.

Public Comment# 1487

G12-19 Part II

IRC: [RB]202

Proposed Change as Submitted

Proponents: Don Scott, Representing National Council of Structural Engineers Association, representing Representing National Council of Structural Engineers Association (dscott@pcs-structural.com)

2018 International Residential Code

[RB] WINDBORNE DEBRIS REGION. Areas within *hurricane-prone regions* located in accordance with one of the following:

1. Within 1 mile (1.61 km) of the ~~coastal~~ mean high-water line where an Exposure D condition exists upwind at the waterline and the ultimate design wind speed, V_{ult} , is 130 mph (58 m/s) or greater.

2. In areas where the ultimate design wind speed, V_{ult} , is 140 mph (63.6 m/s) or greater; or Hawaii.

Reason: Significant confusion has arisen in hurricane-prone regions in trying to determine windborne debris regions because the term "coastal mean high waterline" is not a mapped or defined term. Due to this lack of definition, some jurisdictions have incorrectly interpreted areas within onemile of the mean high waterline along narrow inland tidal waterways to be in windborne debris regions. The primary intent behind paragraph No. 1, is that within one mile of the coast, hurricane wind speeds will be governed by the wind speed over the open water, i.e. an Exposure Category D rather than an inland Exposure Category C situation on which the basic wind speed and paragraph No. 2 are based. This CCP clarifies that the waterline has to be classified as an Exposure D in order for paragraph No. 1 to apply. It also deletes the word "coastal" since wind speed increases could occur at large inland waterways in hurricane-prone regions as well. Also, NOAA maintains a database of the "mean high waterline" values in the US, which can be used in conjunction with this definition.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change proposal is location dependent on its impact on construction costs, however by providing a definition of the windborne debris zone, it will eliminate confusion as to where to apply the windborne debris protection requirements.

G12-19 Part II

Public Hearing Results

Committee Action:

As Submitted

Committee Reason: Provides for exposure D in hurricane prone regions and areas where there is water. Outside of coastal areas you are out of hurricane prone regions. The committee agrees with removal of the word "coastal" as it is not a mapped or defined term. This more clearly indicates that we are talking about the water line and exposure D at the water line. (Vote: 8-3)

Assembly Action:

None

G12-19 Part II

Individual Consideration Agenda

Public Comment 1:

Proponents:

Gary Ehrlich, representing National Association of Home Builders (gehrlich@nahb.org)

requests Disapprove

Commenter's Reason: The purpose of this public comment is to urge disapproval of the proposed change to the wind-borne debris trigger. Contrary to the proponent's reason statement, this is a significant change that will cause more confusion than it eliminates and greatly expand where wind-borne debris protection is required.

The use of the word "coastal" in the current 130 mph trigger for wind-borne debris protection clearly implies an intent to trigger protection for sites near open water such as the Atlantic Ocean or the Gulf of Mexico. The current 130 mph trigger would not apply to

water bodies such as fully landlocked lakes or rivers that do not feed directly into the ocean. It would not even apply to rivers that **do** open to the ocean if the shorelines of such rivers are more than one mile from the mean high-water line at the actual coast.

However, many such lakes or rivers are more than a mile wide in at least one direction and a site located upwind of that direction could be classified as Exposure D. Therefore, the proposed revision would in fact appear to capture sites near the shorelines of large inland lakes or wide rivers (whether open to the ocean or not) if the wind speed at the site also equals or exceeds 130 mph. Sites along wide bays and estuaries that are more than a mile from where such features open to the ocean or Gulf would also be captured.

A close examination of the 130-mph wind contour for Risk Category II buildings (the category that covers dwellings and most multifamily construction) identified several areas for which the revised definition would potentially trigger wind-borne debris protection where it is not already required. Notable examples include the following:

- Narraganset Bay and the Sakonnet River in RI near Providence, RI
- Shinnecock Bay on Long Island (Hampton Bays, Shinnecock Hills, East Quogue)
- Lake Mattamuskeet in Hyde County, North Carolina
- White Lake in Bladen County, North Carolina
- Lakes Moultrie and Marion in South Carolina
- Lake Houston northwest of Houston (near Atascocita)
- Lake Corpus Christi northwest of Corpus Christi

However, these areas, or similar areas, have not necessarily experienced widespread wind-borne debris damage in hurricanes. For example, sites where FEMA's MAT report on Hurricane Harvey specifically documented wind-borne debris impacts were in areas where the wind speed per the 2009 IRC and ASCE 7-05 (the locally-adopted editions at the time) required protection regardless of the proximity to the coast. Many of the sites were also within one mile of the Gulf of Mexico, so protection would be required even under the current coastal mean high-water line trigger. Similarly, where the Irma MAT report documented wind-borne debris damage in Ramrod and Little Torch Key, protection is already required based on the design wind speed and again, most of the area of both islands could be considered "within one mile of the coastal mean high-water line".

Even in Hurricane Katrina, wind-borne debris damage around Lake Pontchartrain (which is technically an estuary rather than an inland lake) was limited to specific conditions. The FEMA and NIST reports did not document wind-borne debris damage in areas such as Laplace, Madisonville, Mandeville and Lacombe, which all lie near where the 130 mph wind contour crosses Lake Pontchartrain. Reported wind-borne debris damage from Katrina primarily occurred in urban areas (e.g. downtown New Orleans) or suburban commercial areas (e.g. Slidell) where blow-off from aggregate roofs occurred, or in areas along the actual Gulf coastline where wind-borne debris protection would be required anyway as the ultimate wind speed is 140mph or higher.

The source of the change stems from discussions within the ASCE 7 committee over a request for interpretation. A corresponding change is being considered for the 2022 edition of ASCE 7, but as of the ICC public comment deadline balloting at the ASCE Wind Load Subcommittee (WLSC) level was not even complete. It is possible that based on responses to the WLSC ballot and (assuming the proposal advances) responses to Main Committee ballots, the eventual ASCE 7-22 language may have additional qualifiers or clarifications. Given the significant cost impacts that can result if impact-resistant glazing or impact-protective systems are required, it would be irresponsible for the I-Codes to get out in front of ASCE 7 and impose a huge unfunded mandate on the construction industry for limited benefit.

The Home Innovation Research Lab calculated the cost impact for installing common methods of wind-borne debris protection on a typical home with 360 square feet of glazing. The added cost was around \$1,800 a home if wood structural panels are used, \$3,400 if manually-operated hurricane shutters are used, and \$9,600 if impact-resistant glazing is provided.

Contrary to the proponent's statement the proposed revision will not increase the cost of construction, these are clearly significant impacts that can price thousands of people in an area out of a new home. This negative impact on affordability is particularly concerning where the revised definition may impact a small, rural, lower-income community that may be miles from the Atlantic or Gulf coast but just happens to be adjacent to a lake or river large enough to trigger Exposure D conditions. Homebuyers and renters in these communities or other communities impacted by this change may find themselves only able to afford older, existing houses that were not built to any edition of the IRC and are significantly less resistant to a variety of hazards than newer homes.

Bibliography: FEMA 549 - Mitigation Assessment Team Report - *Hurricane Katrina in the Gulf Coast* (July 2006).

FEMA P-2022 - Mitigation Assessment Team Report - *Hurricane Harvey in Texas* (March 2019).

FEMA P-2023 - Mitigation Assessment Team Report - *Hurricane Irma in Florida* (December 2018).

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction No change to

code.

Public Comment# 1491

G13-19

IBC: [BS] 403.2.3.1, [BS] 403.2.3.2, [BS] 403.2.3.4

Proposed Change as Submitted

Proponents: Michael Schmeida, Gypsum Association, representing Gypsum Association

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE

2018 International Building Code

[BS] 403.2.3 Structural integrity of interior exit stairways and elevator hoistway enclosures. For *high-rise buildings of Risk Category III or IV* in accordance with Section 1604.5, and for all buildings that are more than 420 feet (128 m) in *building height*, enclosures for *interior exit stairways* and elevator hoistway enclosures shall comply with Sections 403.2.3.1 through 403.2.3.4.

Revise as follows:

[BS] 403.2.3.1 Wall assembly materials - Soft Body Impact. The ~~wall assemblies panels~~ making up the enclosures for *interior exit stairways* and elevator hoistway enclosures shall meet or exceed Soft Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.

[BS] 403.2.3.2 Wall assembly materials - Hard Body Impact. The ~~face of the wall assemblies panels~~ making up the enclosures for *interior exit stairways* and elevator hoistway enclosures that are not exposed to the interior of the enclosures for *interior exit stairways* or elevator hoistway enclosure shall be ~~constructed~~ in accordance with one of the following ~~methods~~:

1. The wall assembly shall incorporate ~~not no~~ fewer than two layers of impact-resistant ~~construction board panels~~, each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.
2. The wall assembly shall incorporate ~~not no~~ fewer than one layer of impact-resistant ~~construction material panels~~ that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.
3. The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.

[BS] 403.2.3.3 Concrete and masonry walls. Concrete or masonry walls shall be deemed to satisfy the requirements of Sections 403.2.3.1 and 403.2.3.2.

Revise as follows:

[BS] 403.2.3.4 Other wall ~~assemblies materials~~. Any other wall ~~assembly materials~~ that ~~provides provide~~ impact resistance equivalent to that required by Sections 403.2.3.1 and 403.2.3.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C1629/C1629M, shall be permitted.

Reason: This clarifies that it is the wall panel/material that is tested per C1629/C1629M and not a full wall assembly. Full wall assembly testing is outside of the scope of C1629/C1629M. Section 1.1.1 of C1629/C1629M states, "panel product performance is not intended to classify the system for abuse resistance."

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is simply a clarification of the application of C1629/C1629M

G13-19

Public Hearing Results

Committee Action:

As Submitted

Committee Reason: This clarifies that it is the wall panel/material that is tested per C1629/C1629M and not a full wall assembly. Full wall assembly testing is outside of the scope of C1629/C1629M. Section 1.1.1 of C1629/C1629M states, "panel product performance is not intended to classify the system for abuse resistance."

(Vote: 13-1)

Assembly Action:

None

Individual Consideration Agenda

Public Comment 1:

IBC@: [BS] 403.2.3, [BS] 403.2.3.1, [BS] 403.2.3.2, [BS] 403.2.3.3, [BS] 403.2.3.4

Proponents:

Tom Zaremba, representing Glazing Industry Code Committee (GICC), a section of the National Glass Association (NGA) (tzaremba@ralaw.com)

requests As Modified by Public Comment

Modify as follows:

2018 International Building Code

[BS] 403.2.3 Structural integrity of interior exit stairways and elevator hoistway enclosures. For *high-rise buildings of Risk Category III or IV* in accordance with Section 1604.5, and for all buildings that are more than 420 feet (128 m) in *building height*, enclosures for *interior exit stairways* and elevator hoistway enclosures shall comply with Sections 403.2.3.1 through 403.2.3.4.

[BS] 403.2.3.1 Wall assembly materials - Soft Body Impact. The panels making up the enclosures for *interior exit stairways* and elevator hoistway enclosures shall meet or exceed Soft Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.

[BS] 403.2.3.2 Wall assembly materials - Hard Body Impact. The panels making up the enclosures for *interior exit stairways* and elevator hoistway enclosures that are not exposed to the interior of the enclosures for *interior exit stairways* or elevator hoistway enclosure shall be in accordance with one of the following :

1. The wall assembly shall incorporate no fewer than two layers of impact-resistant panels, each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.
2. The wall assembly shall incorporate no fewer than one layer of impact-resistant panels that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.
3. The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.

[BS] 403.2.3.3 Concrete, ~~and masonry~~ and glass walls. Concrete or masonry walls shall be deemed to satisfy the requirements of Sections 403.2.3.1 and 403.2.3.2. Glass walls complying with the Category II or Class A impact tests specified in Section 2406.2 shall be deemed to satisfy the requirements of Sections 403.2.3.1 and 403.2.3.2.

[BS] 403.2.3.4 Other wall materials. Any other wall materials that provide impact resistance equivalent to that required by Sections 403.2.3.1 and 403.2.3.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C1629/C1629M, shall be permitted.

Commenter's Reason: The Glazing Industry Code Committee (GICC) urges you to modify the changes reflected in the Committee's recommendation to adopt G13-19 "as submitted" by **ADDING** the modifications to Section 403.2.3.3 proposed in this Public Comment. Adding these changes to Section 403.2.3.3 will reduce the cost of construction by avoiding the imposition of unnecessary, duplicative and costly testing on the use of glass walls.

Sections 403.2.3.1 and 403.2.3.2 require walls to be Soft or Hard Body Tested to Impact Classification Level 2 as described in ASTM C1629/ASTM C1629M. This is, at most, a 200 ft.lb. impact test that is used to assess the integrity of gypsum wall panels. Because it is only a 200 ft.lb. test, Section 403.2.3.3 provides that both concrete and masonry walls are deemed to comply with Sections 403.2.3.1 and 403.2.3.2.

The modification proposed to Section 403.2.3.3 would add glass walls that meet the 400 ft.lb. safety glazing impact tests of CPSC 16 CFR Part 1201 Cat. II or ANSI Z97.1 Cat. A, to the materials that are deemed to comply with the tests required by Sections 403.2.3.1 and 403.1.3.2. Adding glass walls to Section 403.2.3.3 is fully justified and warranted because safety glazing that meets the requirements of 16 CFR 1201 Cat. II or ANSI Z97.1 Cat. A is already tested to an impact standard that is **twice** as stringent as the Soft or Hard Body Impact tests required by Sections 403.2.3.1 and 403.2.3.2.

GICC urges you to adopt the modifications proposed to Section 403.3.2.3.3 (in addition to the changes reflected in the Committee's recommendation to adopt G13-19 as submitted) to ensure that glass walls are not burdened with the unnecessary and costly testing required for gypsum wall panels by Sections 403.2.3.1 and 403.2.3.2.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction

When glass walls are used in applications under these Sections of the Code, adopting the changes proposed to Section 403.2.3.3 will reduce the cost of construction by eliminating the possibility that costly and unnecessary testing would otherwise be required.

Public Comment# 1607

G14-19

IBC®: [BS] 403.2.3.1, [BS] 403.2.3.2, [BS] 403.2.3.4

Proposed Change as Submitted

Proponents: Tim Earl, representing The Gypsum Association (tearl@gbhinternational.com)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE

2018 International Building Code

Revise as follows:

[BS] 403.2.3.1 Wall assembly. The wall assemblies making up the enclosures for *interior exit stairways* and elevator hoistway enclosures shall meet or exceed Soft Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/1629M when tested from the exterior side of the enclosures.

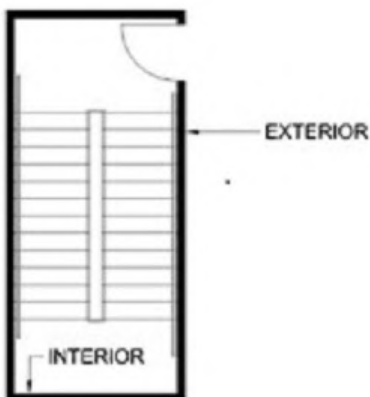
[BS] 403.2.3.2 Wall assembly materials. The exterior face of the wall assemblies making up the enclosures for *interior exit stairways* and elevator hoistway enclosures ~~that are not exposed to the interior of the enclosures for interior exit stairways or elevator hoistway enclosure~~ shall be constructed in accordance with one of the following methods:

1. The wall assembly shall incorporate not fewer than two layers of impact-resistant construction board each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.
2. The wall assembly shall incorporate not fewer than one layer of impact-resistant construction material that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.
3. The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.

[BS] 403.2.3.4 Other wall assemblies. Any other wall assembly that provides impact resistance equivalent to that required by Sections 403.2.3.1 for Soft Body Impact Classification Level 3 and 403.2.3.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C1629/C1629M, shall be permitted.

Reason: This proposal clarifies which side of these enclosure wall assemblies must be tested for abuse and impact resistance. 403.2.3.2 currently states that the exterior side is tested, but it does so in very confusing language. This proposal cleans that up and reiterates the point in 403.2.3.1. Also note that, due to the manner of construction of these enclosure wall assemblies, testing from the exterior side represents the worst case. This proposal also cleans up 403.2.3.4, which currently implies that 403.2.3.1 and 403.2.3.2 both apply to hard body impact testing, which is not the case. The first section is for soft body impact testing. This is simply a grammatical revision that clarifies the intent of the section.

For clarification, the exterior side is the side which does not face into the enclosure, as the figure below illustrates.



Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal simply clarifies the requirements in this section, with no technical changes.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposal does not improve the language of the current code.
(Vote: 10-4)

Assembly Action:

None

G14-19

Individual Consideration Agenda

Public Comment 1:

IBC®: [BS] 403.2.3.2, [BS] 403.2.3.4

Proponents:

Tim Earl, representing The Gypsum Association (tearl@gbhinternational.com)

requests As Modified by Public Comment

Modify as follows:

2018 International Building Code

[BS] 403.2.3.2 Wall assembly materials. The exterior face of the wall assemblies making up the enclosures for *interior exit stairways* and elevator hoistway enclosures that is not exposed to the interior of the enclosures shall be constructed in accordance with one of the following methods:

1. The wall assembly shall incorporate not fewer than two layers of impact-resistant construction board each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.
2. The wall assembly shall incorporate not fewer than one layer of impact-resistant construction material that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.
3. The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.

[BS] 403.2.3.4 Other wall assemblies. Any other wall assembly that provides impact resistance equivalent to that required by Sections 403.2.3.1 for Soft Body Impact Classification Level 2 and 403.2.3.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C1629/C1629M, shall be permitted.

Commenter's Reason: The original proposal was intended to clarify the clumsy language of the existing section, which has led to confusion as to which side of these assemblies needs to be tested. The committee felt that the change went too far and actually introduced more confusion. This PC modifies the original proposal language to make it very clear that the side not facing the interior of the stairwell is to be tested. In practice, this is often a corridor, but not always, so the language here is appropriate.

It also corrects an error in the original proposal which inadvertently raised the bar for some assemblies from Soft Body Impact Classification Level 2 to Level 3.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction. This proposal simply clarifies the requirements in this section, with no technical changes.

Public Comment# 1401

