



**GROUP A FCAC SEHPCAC and TWB
COORDINATION – OCTOBER 2-3, 2018
PUBLIC COMMENTS**

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F276-18

IBC: 307.1.1, 311.2, 311.3;

IFC: 903.2.4.2 (New) (IBC:[F]903.2.4.2), 903.2.9.3 (New) (IBC:[F]903.2.9.3), Chapter 40 (New), 5001.1, 5701.2

IMC: [F] 502.9.5

Proposed Change as Submitted

Proponent: Michael O'Brian, Chair, representing FCAC (fcac@iccsafe.org); Ed Kulik, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2018 International Building Code

Revise as follows

[F] 307.1.1 Uses other than Group H. An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the International Fire Code.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the International Fire Code.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1-hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary storage battery systems installed in accordance with the International Fire Code.
10. Corrosive personal or household products in their original packaging used in retail display.
11. Commonly used corrosive building materials.
12. Buildings and structures occupied for aerosol product storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the International Fire Code.
13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.
14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the International Fire Code.
15. Stationary fuel cell power systems installed in accordance with the International Fire Code.
16. Capacitor energy storage systems in accordance with the International Fire Code.
17. Group B higher education laboratory occupancies complying with Section 428 and Chapter 38 of the International Fire Code
18. Distilling or brewing of beverages conforming to the requirements of the International Fire Code.
19. The storage of beer, distilled spirits and wines in barrels and casks conforming to the requirements of the International Fire Code.

311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:

Aerosol products, Levels 2 and 3
Aircraft hangar (storage and repair)
Bags: cloth, burlap and paper
Bamboos and rattan
Baskets
Belting: canvas and leather
Beverages: over 16-percent alcohol content
Books and paper in rolls or packs
Boots and shoes
Buttons, including cloth covered, pearl or bone
Cardboard and cardboard boxes
Clothing, woolen wearing apparel
Cordage
Dry boat storage (indoor)
Furniture
Furs
Glues, mucilage, pastes and size
Grains
Horns and combs, other than celluloid
Leather
Linoleum
Lumber
Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.8)
Photo engravings
Resilient flooring
Self-service storage facility (mini-storage)
Silks
Soaps
Sugar
Tires, bulk storage of
Tobacco, cigars, cigarettes and snuff
Upholstery and mattresses
Wax candles

311.3 Low-hazard storage, Group S-2. Storage Group S-2 occupancies include, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic *trim*, such as knobs, handles or film wrapping. Group S-2 storage uses shall include, but not be limited to, storage of the following:

Asbestos
Beverages up to and including 16-percent alcohol in ~~metal, glass or ceramic containers~~
Cement in bags
Chalk and crayons
Dairy products in nonwaxed coated paper containers
Dry cell batteries
Electrical coils
Electrical motors
Empty cans
Food products
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glass bottles, empty or filled with noncombustible liquids
Gypsum board
Inert pigments
Ivory
Meats
Metal cabinets
Metal desks with plastic tops and *trim*
Metal parts
Metals
Mirrors
Oil-filled and other types of distribution transformers
Parking garages, open or enclosed
Porcelain and pottery
Stoves
Talc and soapstones
Washers and dryers

2018 International Fire Code

Add new text as follows

903.2.4.2 Group F-1 Distilled Spirits. An automatic sprinkler system shall be provided throughout a Group F-1 fire area used for the manufacture of distilled spirits.

903.2.9.3 Group S-1 Distilled spirits or wine. An automatic sprinkler system shall be provided throughout a Group S-1 fire area used for the bulk storage of distilled spirits or wine.

CHAPTER **40 STORAGE OF DISTILLED SPIRITS AND WINES**

SECTION 4001 GENERAL

4001.1 General. The storage of distilled spirits and wines in barrels and casks shall comply with this chapter in addition to other applicable requirements of this code.

4001.1.1 Nonapplicability. Chapter 50 and Chapter 57 of this code are not applicable to the storage of distilled spirits and wines in barrels and casks as identified in Section 5001.1, Exception 10, and Section 5701.2, Item 10.

SECTION 4002 DEFINITIONS

4002.1 Terms defined in Chapter 2. Words and terms used in this chapter and defined in Chapter 2 shall have the meanings ascribed to them as defined therein.

SECTION 4003 PRECAUTIONS AGAINST FIRE

4003.1 Spill Control. Drainage or containment systems shall be provided by means of curbs, scuppers, special drains, or other suitable means to prevent the flow of spills throughout the building.

4003.2 Ventilation. Ventilation shall be provided for rooms and spaces where distilled spirits and wines in barrels and

casks are stored in accordance with the International Mechanical Code and one of the following:

1. The rooms and spaces shall be ventilated at a rate sufficient to maintain the concentration of vapors within the area at or below 25% of the LFL. This shall be confirmed by sampling of the actual vapor concentration under normal operating conditions. The sampling shall be conducted throughout the enclosed storage area extending to or toward the bottom and the top of the enclosed storage area. The vapor concentration used to determine the required ventilation rate shall be the highest measured concentration during the sampling procedure. The sampling shall be conducted manually or by installation of a continuously monitoring flammable vapor detection system.
2. The rooms and spaces shall be provided exhaust ventilation at a rate of not less than 1 cfm/ft² (0.3 m³/min) of solid floor area. The exhaust ventilation shall be accomplished by natural or mechanical means, with discharge of the exhaust to a safe location outside the building.

4003.3 Sources of ignition.. Sources of ignition shall be controlled in accordance with Sections 4003.3.1 through 4003.4.

4003.3.1 Smoking. Smoking shall be prohibited and "No Smoking" signs provided as follows:

1. In rooms or areas where hazardous materials are stored or dispensed or used in open systems in amounts requiring a permit in accordance with Section 105.6 and 105.7
2. Within 25 feet (7620mm) of outdoor storage, dispensing or open use areas.
3. Facility or areas within facilities that have been designated as totally "no smoking" shall have "No Smoking" signs placed at all entrances to the facility or area. Designated areas within such facilities where smoking is permitted either permanently or temporarily shall be identified with signs designating that smoking is permitted in these areas only.
4. In rooms or areas where flammable or combustible hazardous materials are stored, dispensed or used.

Signs required by this section shall be in English as a primary language or in symbols allowed by this code and shall comply with Section 310.

4003.3.2 Open Flame. Open flames and high-temperature devices shall not be used in a manner that creates a hazardous condition and shall be listed for use with the hazardous materials stored or used.

4003.3.3 Industrial trucks. Powered industrial trucks used in areas designated as hazardous (classified) locations in accordance with NFPA 70 shall be listed and labeled for use in the environment intended in accordance with NFPA 505.

4003.3.4 Electrical. Electrical wiring and equipment shall be installed and maintained in accordance with Section 605 and NFPA 70.

4003.4 Lightning. Structures containing barrel storage should be protected from lightning. The lightning protection equipment shall be installed in accordance with NFPA 780 and NFPA 70.

SECTION 4004 STORAGE

4004.1 Storage. Storage shall be in accordance with this section and Section 315.

4004.2 Empty containers. The storage of empty containers previously used for the storage of flammable or combustible liquids, unless free from explosive vapors, shall be stored as required for filled containers.

4004.3 Basement storage. Class I liquids shall be allowed to be stored in basements in amounts not exceeding the maximum allowable quantity over control area for use-open systems in Table 5003.1.1(1), provided that automatic suppression and other fire protection are provided in accordance with Chapter 9. Class II and IIIA liquids shall also be allowed to be stored in basements, provided that automatic suppression and other fire protection are provided in accordance with Chapter 9.

4004.4 Bulk beverage storage areas. There shall be no storage of combustible materials in the bulk beverage storage areas not related to the beverage storage activities.

SECTION 4005 FIRE PROTECTION

4005.1 Automatic sprinkler system. The storage of distilled spirits and wines shall be protected by an approved automatic sprinkler system as required by Chapter 9.

4005.2 Portable Fire Extinguishers. Approved portable fire extinguishers shall be provided in accordance with Section 906.

SECTION 4006 SIGNAGE

4006.1 Hazard identification signs. Unless otherwise exempted by the fire code official, visible hazard identification signs as specified in NFPA 704 for the specific material contained shall be placed on stationary containers and above ground tanks and at entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities requiring a permit and at specific entrances and locations designated by the fire code official.

4006.1.1 Maintenance and style. Signs and markings required by Section 4006.1 shall not be obscured or removed, shall be in English as a primary language or in symbols allowed by this code, shall be durable, and the size, color, and lettering shall be approved.

Revise as follows

5001.1 Scope. Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter.

This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that where specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

Exceptions:

1. In retail or wholesale sales occupancies, the quantities of medicines, foodstuff or consumer products and cosmetics containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons (5 L).
2. Quantities of alcoholic beverages in retail or wholesale sales occupancies shall not be limited providing the liquids are packaged in individual containers not exceeding 1.3 gallons (5 L).
3. Application and release of pesticide and agricultural products and materials intended for use in weed abatement, erosion control, soil amendment or similar applications where applied in accordance with the manufacturers' instructions and label directions.
4. The off-site transportation of hazardous materials where in accordance with Department of Transportation (DOTn) regulations.
5. Building materials not otherwise regulated by this code.
6. Refrigeration systems (see Section 605).
7. Stationary storage battery systems regulated by Section 1206.2.
8. The display, storage, sale or use of fireworks and *explosives* in accordance with Chapter 56.
9. *Corrosives* utilized in personal and household products in the manufacturers' original consumer packaging in Group M occupancies.
10. The storage of beer, distilled spirits and wines in ~~wooden~~ barrels and casks.
11. The use of wall-mounted dispensers containing alcohol-based hand rubs classified as Class I or II liquids where in accordance with Section 5705.5.

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

1. Specific provisions for flammable liquids in motor fuel-dispensing facilities, repair garages, airports and marinas in Chapter 23.
2. Medicines, foodstuffs, cosmetics and commercial or institutional products containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solution not being flammable, provided that such materials are packaged in individual containers not exceeding 1.3 gallons (5 L).
3. Quantities of alcoholic beverages in retail or wholesale sales or storage occupancies, provided that the liquids are packaged in individual containers not exceeding 1.3 gallons (5 L).
4. Storage and use of fuel oil in tanks and containers connected to oil-burning equipment. Such storage and use shall be in accordance with Section 603. For abandonment of fuel oil tanks, this chapter applies.
5. Refrigerant liquids and oils in refrigeration systems (see Section 605).
6. Storage and display of aerosol products complying with Chapter 51.
7. Storage and use of liquids that do not have a fire point when tested in accordance with ASTM D92.
8. Liquids with a *flash point* greater than 95°F (35°C) in a water-miscible solution or dispersion with a water and inert (noncombustible) solids content of more than 80 percent by weight, which do not sustain combustion.
9. Liquids without *flash points* that can be flammable under some conditions, such as certain halogenated hydrocarbons and mixtures containing halogenated hydrocarbons.
10. The storage of beer, distilled spirits and wines in ~~wooden~~ barrels and casks.
11. Commercial cooking oil storage tank systems located within a building and designed and installed in accordance with Section 608 and NFPA 30.

Add new standard(s) follows

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy MA 02169-7471

780-17:

Standard f or the Installation of Lightning Protection Systems

2018 International Mechanical Code

Revise as follows

[F] 502.9.5 Flammable and combustible liquids. Exhaust ventilation systems shall be provided as required by Sections 502.9.5.1 through 502.9.5.5 for the storage, use, dispensing, mixing and handling of flammable and combustible liquids. Unless otherwise specified, this section shall apply to any quantity of flammable and combustible liquids.

Exception-Exceptions:

1. This section shall not apply to flammable and combustible liquids that are exempt from the International Fire Code.
2. The storage of beer, distilled spirits and wines in barrels and casks conforming to the requirements of the International Fire Code.

Reason: Currently, due to changes over several code change cycles, there is confusion on how to treat distilled spirits in Building Code and for applicable safety requirements of the International Fire Code. Coordination between the codes on these spirits still have the properties of flammable liquids and proper safeguards must be provided for the occupancies housing **[F] COMBUSTIBLE LIQUID**. A liquid having a closed cup flash point at or above 100°F (38°C). Combustible liquids shall be su

Class II. Liquids having a closed cup flash point at or above 100°F (38°C) and below 140°F (60°C).

Class IIIA. Liquids having a closed cup flash point at or above 140°F (60°C) and below 200°F (93°C).

Class IIIB. Liquids having a closed cup flash point at or above 200°F (93°C).

The category of combustible liquids does not include compressed gases or cryogenic fluids.

[F] FLAMMABLE LIQUID. A liquid having a closed cup flash point below 100°F (38°C). Flammable liquids are further categorized. The Class I category is subdivided as follows:

Class IA. Liquids having a flash point below 73°F (23°C) and a boiling point below 100°F (38°C).

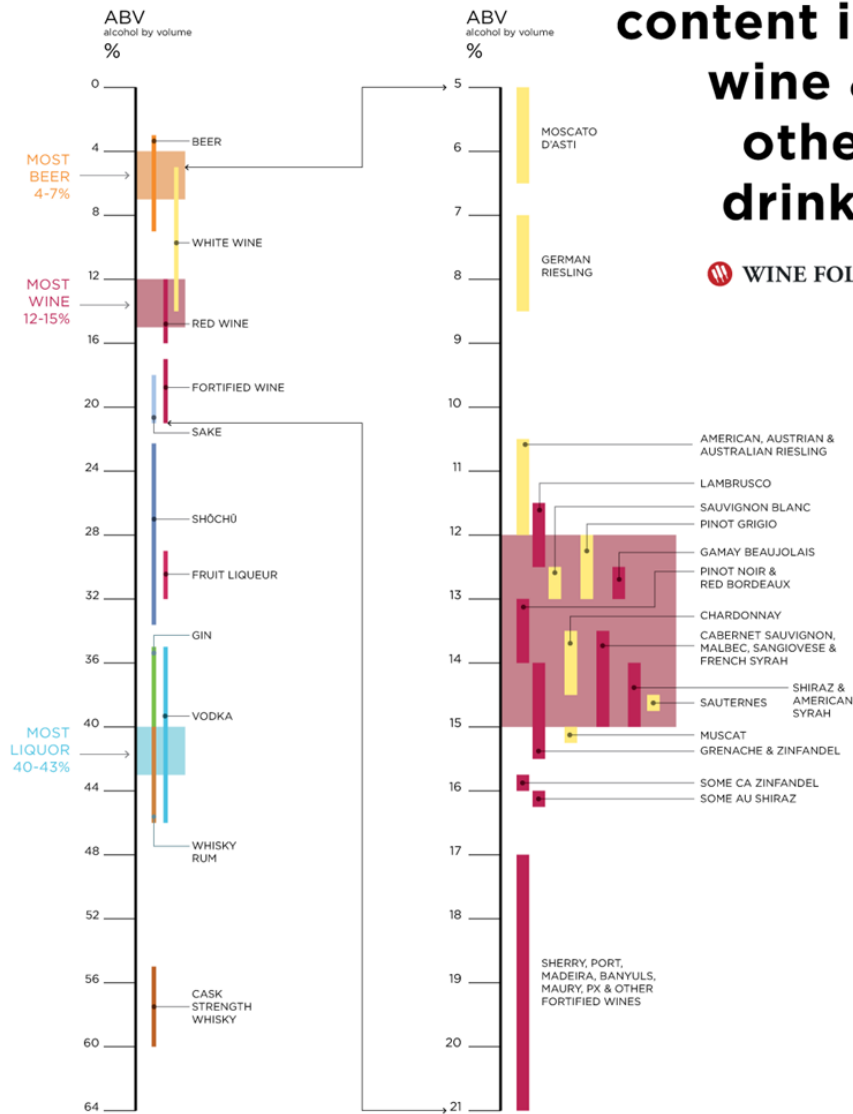
Class IB. Liquids having a flash point below 73°F (23°C) and a boiling point at or above 100°F (38°C).

Class IC. Liquids having a flash point at or above 73°F (23°C) and below 100°F (38°C). The category of flammable liquids does not include cryogenic fluids.

TABLE 3-5. DILUTION EFFECT ON FLASH POINT OF ETHYL ALCOHOL

PERCENTAGE OF ALCOHOL	PROOF	FLASH POINT	
		F.	C.
100	200	55°	13°
96	192	62°	17°
95	190	63°	17°
80	160	68°	20°
70	140	70°	21°
60	120	72°	22°
50	100	75°	24°
40	80	79°	26°
30	60	85°	29°
20	40	97°	36°
10	20	120°	49°
5	10	144°	62°

Alcohol content in wine & other drinks



The International Building Code classifies the various activities into Groups. The manufacturing of beverages with over 16 the manufacturing of beverages 16 percent alcohol or less is classified as an F-2:

306.2 Moderate-hazard factory industrial, Group F-1. Factory industrial uses that are not classified as Factory Industrial F Moderate Hazard and shall include, but not be limited to, the following:

Beverages: over 16-percent alcohol content

306.3 Low-hazard factory industrial, Group F-2. Factory industrial uses that involve the fabrication or manufacturing of finishing, packing or processing do not involve a significant fire hazard shall be classified as F-2 occupancies and shall include,

Beverages: up to and including 16-percent alcohol content

The storage of beverages with up to and including 16-percent alcohol in metal, glass or ceramic containers is classified as

311.3 Low -hazard storage, Group S-2. Storage Group S-2 occupancies include, among others, buildings used for the storage of products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products include plastic trim, such as knobs, handles or film wrapping. Group S-2 storage uses shall include, but not be limited to, storage of

Beverages up to and including 16-percent alcohol in metal, glass or ceramic containers

However, there is no Group S classification listed for storage of beverages with over 16 percent alcohol and there are no distilling activities or bulk storage of distilled spirits in Section 307 High Hazard Group H.

311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are but not limited to, storage of the following:

???

[F] 307.1.1 Uses other than Group H. An occupancy that stores, uses or handles hazardous materials as described in one classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the IBC

6. Liquor stores and distributors without bulk storage.

The lack of a S-1 Group designation for storage activities for beverages over 16-percent alcohol or any bulk storage recognized as "Uses other than Group H" causes disputes between code officials as to application of a Group H to storage of the finished process.

In the International Fire Code there is confusion about the applicability of Chapter 50 Hazardous Materials-General Provisions Combustible Liquids provisions to distilled spirits because of the exception for distilled spirits and wines stored in wooden barrels. The issue is arising because of the growing popularity of "boutique" or "craft" distillers.

A review of the International Fire Code Commentary concerning the distilled spirits in wooden barrels exception finds the conflict between the codes:

5001.1 Scope.

Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials in this chapter.

This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that where other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple uses, all shall be addressed.

Exceptions:

10. The storage of distilled spirits and wines in wooden barrels and casks.

IFC Commentary:

"Exception 10 covers the storage of distilled spirits and wines in wooden barrels and casks. This statement may appear to exempt from being a Group H occupancy. However, the IBC will still classify the storage area as a Group H occupancy if the amounts (MAQs) per control area listed in Table 307.1(1) of that code for flammable or combustible liquids. All requirements for a Group H occupancy are applicable; however, any requirements from the code (fire code) are not."

5701.1 Scope and application. Prevention, control and mitigation of dangerous conditions related to storage, use, dispensing and handling of flammable and combustible liquids shall be in accordance with Chapter 50 and this chapter.

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters.

10. The storage of distilled spirits and wines in wooden barrels and casks.

IFC Commentary:

"Item 10 makes the storage of distilled spirits and wines in wooden barrels and casks exempt from this chapter. Although these containers hold flammable liquids, the containers do not pose the rupture hazard that other containers do. Barrels and casks will leak their contents and that secure the staves expand and loosen. Even this hazard feature is generally mitigated by the operation of automatic springs progressing to the point where the metal bands get hot enough to expand. A similar exception also appears in Section 5001.1

In summary, when you manufacture distilled spirits you are an F-1 occupancy. When you manufacture wine or beer you are and beer you are an S-2 occupancy. When you store distilled spirits in retail packaging you are not an H occupancy but then store any beverage with over 16% alcohol in bulk, (includes some wines), you have an H occupancy. As far as risk goes, manufacturing of distilled spirits is an F-1 regardless of amount but an H if stored in bulk. This is to the IFC, if you store your distilled spirits in bulk in wooden barrels Chapter 50 and 57 do not apply so there are no code

This proposal attempts to address this confusion recognizing the main safety issues are the need for automatic fire suppression and need for containment of spills. In 2005 the Distilled Spirits Council of The United States (DISCUS) released guidelines which addressed fire protection, ventilation and secondary containment requirements. Those guidelines were originally proposed for the International Fire Code.

It is proposed to make the following Group designation changes to the International Building Code:

Add a classification under S-1 for storage of beverages over 16% alcohol whether in bulk or retail packaging.

Modify the classification under S-2 to apply to all beverages up to and including 16-percent alcohol regardless of container

Modify Section [F] 307.1.1 "Uses other than Group H" to add classifications for distilling, brewing or storage of these materials

In the International Fire Code, it is proposed to strike the word "wooden" and addition of the "word beer" in the exceptions

10. The storage of beer, distilled spirits and wines in ~~wooden~~ barrels and casks.

In the International Mechanical Code it is proposed to strike the word "wooden" from Section [F] 502.9.5 "Flammable and combustible

In conjunction with the Group classification cleanup and striking the word wooden in both the IFC and IMC, protection feature sprinkler thresholds for the manufacture of distilled spirits or bulk storage of distilled spirits regardless of square footage the International Fire Code for the Storage of Distilled Spirits and Wines.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC) and the ICC Building Code Action Committee (BCAC) Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire safety in existing buildings and facilities and the protection of life and property in wildland urban interface areas. In 2017 the Fire-CA there were numerous conference calls, Regional Work Group and Task Group meetings for the current code development cycle, committees as well as any interested parties, to discuss and debate the proposed changes. Related documentation and reports are at: <https://www.iccsafe.org/codes-tech-support/cs/fire-code-action-committee-fcac/>. BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2017 the BCAC has held 3 open numerous Working Group meetings and conference calls for the current code development cycle, which included members interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <https://www.iccsafe.org/codes-tech-support/codes/code-development-process/building-code-action-committee-bcac/>.

Bibliography: Recommended Fire Protection Practices for Distilled Spirits Beverage Facilities, Third Edition Prepared Under the Auspices of The Distilled Spirits Council of the United States, Inc.

<http://www.discus.org/policy/fireprotection/>

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal will likely break even on the cost of construction by clarifying what the appropriate Group designation is, elimination of the unnecessary H classifications, and clarifying what protection levels are necessary.

Public Hearing Results

Committee Action:

As Submitted

Committee Reason: This proposal was approved as the exceptions for Group H occupancies are needed and the chapter addressing the specific hazards is necessary. (Vote: 13-1)

Assembly Action:

None

F276-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Linda Purcell, representing architecture PML, Increquests As Submitted.

Commenter's Reason: F276-18

Architectural opinion, related to **use** of facilities and separation of occupancies in facilities that produce distilled spirits above 16% ABV in process and storage, above the 240 gallon limit (sprinkled building).

The intent of the code is to provide a constructed project that provides minimum life safety of users and occupants familiar, and unfamiliar, with the building. *We have no control over the use of the space after the owner takes possession.*

Based on our observed use of distilleries, and H3 rooms, after they are owner occupied, architecture PML, Inc., strongly believes that any measure of life safety that we can provide during design, as required by code, and additional life and operational safety that might be required, or supported by industry best practices, and, as would be dictated by common sense, **should be incorporated into the design, AND SUPPORTED BY THE CODE**

Regarding Occupancy Classification and separation of Occupancies--- If no separation is required between any other Occupancy classification those areas currently required to be H3 Occupancy (for the purposes of *distilled spirits*) there will be significant life safety risks to users, visitors, and even adjacent properties. We strongly recommend that separation between H3 and other occupancies continue to be required, as they are currently required in the code we are most familiar with, the 2015 IBC.

Linda Purcell, AIA

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction considering that other requirements for life safety apply outside of the IBC requirements, this actually may increase the costs to the owners, as the H3 area is specifically defined by FRR (walls) separating occupancy. Without definition of the H3 area, the actual coverage area, and protection from spark, including explosion proof devices, could be much more extensive.

Public Comment 2:

Proponent: Scott Moore, representing Dalkita, Inc. (scott@dalkita.com)requests Disapprove.

Commenter's Reason: The proponents of this measure claim that current code fails to safely regulate distilleries and that the code is unclear. This is a patently false presumption. The current code is clear. The current code does provide for safe regulation of distilleries. However, the subject is complex requiring additional rigor in design and review. This proposal would eliminate the application of H-3 or H-2 occupancy classification to distilleries using and storing Flammable Liquids in excess of the MAQs (Maximum Allowable Quantities). If approved, this proposal will create a clear and present danger to public health, safety, and welfare.

The proponents further state that their intention is to reduce or eliminate unnecessary regulations regarding distilleries. In fact, this proposal will have the opposite affect and increase regulation on not only distilleries but wineries and breweries adding significant construction costs.

It is true that summarizing code requirements for distilleries into a concise package would reduce the efforts needed to design and review such facilities. However, this proposal barely scratches the surface of applicable requirements for safe distilleries found in the current I-codes and NFPA documents they reference. This oversimplification will lead to further misunderstanding of these facilities and guide users of the code toward negligent omission of requirements not addressed in the proposed chapter 40. Safe design of distilleries, particularly micro-distilleries, is a serious matter. They are essentially Flammable Liquids factories in or adjacent to restaurants.

It is true that Ethanol, potable or not, needs to be regulated differently than other non-water miscible Flammable Liquids. This proposal continues the current code approach of discounting graduating flammability properties of varying concentrations of ethanol and water mixtures. A more helpful start to addressing this in the codes would be to identify the fact that 1C water miscible liquid MAQs would more appropriately be higher than 1B liquid MAQs. This proposal ignores the physics of the material being regulated and instead applies regulations in a more arbitrary manner than the current code.

Specific items found in this proposal that present an imminent threat to human life by eliminating regulations currently in place are enumerated below.

IBC 307.1.1(18) (19) would permit unlimited quantities of 1B Flammable Liquid, 95% ethanol with a sea level flash point of 63 degF, in ANY occupancy, including A.

IBC 307.1.1(19) would quadruple the allowable building area for storage of 1C and 1B flammable liquids in barrels (wooden and steel) by shifting the occupancy from H-3 to S-1. Wood soaked in Flammable Liquid a High-hazard commodity. Proper storage of this should be in reduced area compartmentalization as per the current code.

IFC 4001.1.1, 5001.1(10), and 5701.2(10) omit the word wooden in regard to barrels thereby treating, for instance, 55 gallon non-relieving steel barrels the same as wooden barrels. Steel barrels, when exposed to heat, will rupture explosively. Wooden barrels will not.

Specific items found in this proposal that impose additional unnecessary and costly regulation on the beer wine and spirits industry are enumerated below.

IFC 903.2.4.2 and 903.2.9.3 will regulate very small micro-distilleries, with under 120 gallons of spirit, out of business by requiring sprinklers in these facilities where current code does not.

IFC 903.2.9.3 will regulate most wineries out of business by requiring sprinklers for storage of wine where current code does not. Wine, beer, and all other ethanol mixtures under 20% ABV at sea level are non-ignitable per FM Data sheets 729 and 732. Non-ignitable water miscible ethanol mixtures should not be and are not currently regulated as combustible and flammable liquids.

IFC 4003.1 requires drainage and spill control THROUGHOUT the building. Current code only requires these features in parts of the building where Flammable Liquids are actually used and stored and makes exceptions for small quantities.

IFC 4003.2 needlessly requires ethanol vapor monitors for storage of non-ignitable wine. It requires ethanol monitors for storage of spirits in barrels. This is not only unnecessary when proper ventilation calculations are performed but, it also relies on sensors that require proper maintenance and periodic calibration for a critical safety system that could otherwise be provided as fool proof. The other option requires an excessive ventilation rate of 1cfm/sf in barrel storage. Current code requires only 0.06cfm/sf which we have found to be more than adequate to maintain ethanol vapor concentrations at less than 25% of the LFL.

IFC 4003.3.3 requires use of type EX fork trucks even if it has been proven that ventilation will maintain concentrations of Flammable Liquid vapor below 25% of the LFL. Current code acknowledges this and permits type E for trucks where appropriate.

IFC 4004.3 prohibits storage of beer and wine in basements. The current code does not. Beer and wine should be treated entirely different from distilled spirits.

IFC 4005.1 needlessly requires sprinklers for the storage of wine and spirits in bottles. Current code does not.

IMC 502.9.5 exception 2 reverses earlier proposal requirements for ventilation. This is simply confusing.

Below is a partial list of micro-distillery disasters over the past 10 years. Most of these did not meet current code but would be compliant under this new proposal.

Wigle distillery, Pittsburgh - 1 hospitalized

BJ Hookers Distillery, Harris County TX - 1 air lifted to hospital

Island Beach Distillery, Lacey Township, NJ - 1 taken to burn center

Silver Trails Distillery, Marshal County KY - 1 dead, 1 with over a year in recovery

Full Throttle Saloon, Sturgis SD - burned to the ground 2-8-15

Twister Distillery, Moore, OK - 1 hospitalized

Alchemical Solutions, Ashland OR - Neighboring residents experienced smoke related health problems

Tuthilltown Spirits, Gardiner, NY - Destroyed building, no injuries

Current IFC chapters 50 and 57 do not mean that there are no code requirements for barrels as is stated by the proponents of this measure. Rather, per the commentary, wooden barrels are only exempt from the provisions of those two chapters. This means that, under the current code where spirits are stored in wooden barrels, emergency alarms, sprinklers, 25% of the perimeter on an exterior wall, and occupancy separation are required. While 1cfm/sf of ventilation, spill control, secondary containment and explosion control are not.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction. The proposal will significantly increase the cost to construct distilleries by requiring additional unneeded features. It will particularly damage the wine and beer industries with added construction and operational costs by treating wine and beer, which are not flammable, the same as distilled spirits which is.

Public Comment 3:

Proponent: James Patterson, Denver Fire Department, representing Denver Fire Department requests Disapprove.

Commenter's Reason: The removal of the H classification for volumes exceeding the maximum allowable quantities does not benefit the craft distillers and weakens the code by removing required separations, and standby power requirements for required mechanical ventilation. If a distilling occupancy is not an H occupancy regardless of the alcohol quantities within the occupancy, it can be combined with other occupancies as a non-separated occupancy (such as an assembly banquet hall with a still located in the center as an operational decorative piece) that would allow the public to enter a potentially dangerous situation.

The blanket requirement for fire sprinklers without regard to quantities below the maximum allowable quantities will place an increased burden on the very small/hobby craft distillers. Current requirements allow a distiller to avoid sprinklers by maintaining a maximum allowable quantity below the 120 gallons for a non-sprinklered occupancy and volumes in 1.3 gallon or less containers are not counted in the allowable 120 gallons.

The removal of the requirement for barrels and casks to be "wooden" could create more hazardous storage scenarios such as ethanol in plastic or non-relieving metal barrels.

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

The proposal's requirement for sprinkler in any distilling occupancy will increase the cost for very small operations.

The proposal's removal of the requirements for an H occupancy would decrease the cost for larger distilling operations.

Public Comment 4:

Proponent: David Tomecek, representing Self (thepyro13@hotmail.com) requests Disapprove.

Commenter's Reason: The proponents of this code change are right to recognize that the application of IBC, IFC and other International Codes to craft-level facilities (i.e., breweries, cideries, wineries, distilleries) can be confusing. However, the approach taken is problematic in that it incorrectly counteracts corrective steps taken in previous editions of the IBC/IFC, confuses the hazards and protections necessary for differing parts of the alcoholic beverage manufacturing industry and appears to misunderstand the issues associated with wooden barrels and casks versus other containers. The proposed change correctly notes that the code-making progress made with respect to alcoholic beverage manufacturing and storage has been somewhat inconsistent. The author would add that the myths and legends of the alcoholic beverage industry, along with misunderstandings of long-standing exceptions within the codes, are not helpful in interpreting and applying requirements. As written, this proposal extends many of those misunderstandings and will codify them in a way that is detrimental to the safety of building occupants, their neighbors and emergency response personnel.

There are two major issues that work against the proposal one involving the split between various portions of the alcoholic beverage industry and the other involving the exceptions often afforded wooden barrels and casks.

The IBC currently includes a threshold value of 16%, which was intentionally inserted to the IBC in the 2003 Edition (at that time it was 12%, revised to 16% in the 2009 Edition). The threshold was ostensibly introduced to address construction of spec warehouses and allow owners, designers and code officials to determine what might be allowed in the two classifications of Group S occupancies. However, that threshold was also introduced into the manufacturing side via incorporation into the Group F occupancies.

Both the 12% and 16% values have support from fire research and appropriately delineate between ethanol-containing liquids that are effectively non-hazardous and those that are, in fact, flammable/combustible liquids. The previous 12% value aligned with beverage manufacturing as it stood at the time carbonated beverages for retail sales tended to have alcohol by volume (ABV) percentages at or below 12% and non-carbonated beverages were typically above that value. Carbonated beverages such as beer, malt liquor, cider, low-alcohol wine, certain post-fermentation carbonated mixtures (e.g., wine coolers, hard lemonades and sodas) and similar liquids fell into the lower category, while non-carbonated liquids fell into the higher category. This natural split in the industry tends to follow the flammability of ethanol solutions. Ethanol solutions tend to become difficult to ignite, even at elevated temperatures, around 11%. The combination of the two elements made the use of 12% a good value.

The increase to 16% appears to have come from consideration of the fermentation process and recognition of the influence on the flammability of ethanol solutions. Beer, cider and low- to mid-strength wine have been found to be difficult to ignite based on a combination of their low ethanol concentration and presence of carbon dioxide in the mixture, effectively making the solution a non-hazard. The carbon dioxide developed during the fermentation process is sufficiently incorporated into the liquid that it carries through that process into short-term storage and final packaging into containers (during which time more CO₂ might be added). Fire testing of finished product, particularly beer, has been performed since the 1950s, and more recent testing of liquids taken at each step of the fermentation process have demonstrated similar results. That is, all have been found to be difficult to ignite such that they act like a non-combustible liquid. The 16% threshold aligns with the point at which most yeasts die off, and therefore adequate carbon dioxide to compensate for increased ethanol vapor production is not created. In effect, this natural boundary value creates a solid delineation point between hazardous and non-hazardous processes, and therefore should not be eliminated or modified. It is recognized that some super-yeasts exist in the beer and wine manufacturing areas, but the makers using these yeasts are relatively limited and can seek relief individually.

Once the fermentation threshold is exceeded or the fermented liquid is modified, such as with distillation, the influence of carbon dioxide falls off quickly and the ethanol solution becomes a flammable/combustible liquid that has no offsetting influence. Therefore, it should be treated as such and have no exception given, particularly an unlimited exception as included in the proposal.

The issue relative to wooden barrels and casks tends to revolve around the myth that wooden barrels are not a hazard. The author of this comment has noted a myriad of opinions that wooden barrels do not burn and/or wooden barrels don't fail when burned. That perspective appears to be emphasized by the IFC Commentary section noted in the proposal (for IFC Section 5702.1). But that assertion is wholly incorrect. The historical evidence from a variety of the respected research agencies is that wooden barrels do, in fact, burn and fail, but do so in a way that does not fit within the generalized approach of catastrophic failure anticipated by NFPA 30, *Flammable and Combustible Liquids Code* and IFC Chapters 50 and 57. The failure methods and resulting hazard from wooden barrels/casks was noted in a series of tests performed by the National Bureau of Fire Underwriters in the late 1940s and subsequently confirmed by tests performed by the National Fire Protection Association, the predecessor of today's FM Global, individual industry leaders (manufacturers or consortiums thereof) and public entities in states with concentrated manufacturing (e.g., Tennessee, Kentucky, Indiana and Iowa). More recently, the failure mechanisms of wooden barrels/casks were reconfirmed in tests performed by FM Global in the mid-2010s. Similar research for fall survivability, impact resistance, manufacturing quality control and other issues confirmed that wooden barrels and casks are a unique hazard that is outside the realm of generalized codes.

It is from this perspective that wooden barrels and casks have been excepted from NFPA 30 and fire codes for decades, and regulation has been deferred to insurance agencies, state regulating organizations and federal rule makers. The unique qualities of wooden barrels/casks are not present in other types, however. Barrels/casks made of metal (mostly steel, generally known as kegs), plastic, clay, concrete and other materials have been found to react to fire more closely to other containers covered by NFPA 30/IFC, and therefore are included in those controls.

Additionally, the introduction of an exception for *any* type of barrel, particularly plastic ones, as included in the proposal sets a dangerous precedence, as well. Many spirits manufacturers that create liqueurs often use plastic barrels as process vessels. High-concentration of ethanol are often shipped in intermediate bulk containers (IBCs) and are often used by spirits manufacturers to augment their own supply or as an input to their particular beverage. Mid-sized plastic containers, such as portable tanks, are used for short-term storage and processing. These makers would naturally ask why they can store spirits in plastic barrels but are regulated in those other containers. The proposed section would actually lend credence to allowing other plastic containers to be unregulated, which is obviously counterintuitive to current practice and known hazards. Other barrel/cask types have similar concerns, but the plastic items are the best example.

Those issues alone suggest that the proposal should be disapproved. However, additional concerns also exist relative to storage of alcoholic beverages as proposed:

- The proposed spill control section (IFC 4003.1) runs counter to language in other sections. In general, the IFC exempts containers less than 55 gallons in groupings of less than an aggregate of 1,000 gallons from spill control and secondary containment (see, for example 2015 IFC, Section 5004.2.1 and 5004.2.2). Since most barrels are less than 55 gallons, this chapter would place a restriction on alcoholic beverage storage not applied to other facilities.
- From a design approach, Section 4003.2, Item 1 is nonsensical. Because the evaporation rate from barrels is environment-dependent, predicting a ventilation cannot be done unless a conservative approach is taken. To comply with Item 1, the facility would need to be built and sampled to achieve compliance which obviously cannot be done without first obtaining a permit and occupancy of the building which cannot be done without providing the ventilation system.
- The specification of a hazardous location industrial truck for storage areas is overly burdensome and is an overstatement of the requirements from NFPA 505. NFPA 505 allows for determination of the type of industrial truck based on the potential operating environment, including consideration of other safety features. If one were to implement the ventilation and detection from Section 4003.2, for example, NFPA 505 would not dictate a classified location industrial truck.
- IFC, Section 4004.3 does not make sense. In effect, the change to Section 307.1.1 of the IBC would eliminate a maximum allowable quantity as being applicable to the storage. That, in turn, means that there is no MAQ to apply within Section 4004.3. But if there is an MAQ applicable in Section 4004.3, it begs the question of how it would otherwise be applicable in other portions of the IBC/IFC.

Aside from the issues related to storage, the proposal makes the leap to eliminate a Group H occupancy for distilleries altogether. This is incongruous with general practice in that the distilling process is, in reality, no different from the production of ethanol for other purposes (e.g., pharmaceuticals, chemical processing, foodstuffs, beauty and health products, etc.). Given the hazards associated with ethanol in general, carving special permissions without controls for this business segment without allowing it for others flies in the face of the general practice of the ICC. Further, that portion of the proposal seems to dismiss the idea of protecting neighboring tenants/owners and the increased risk to emergency responders, given that most craft distilleries are located in leased properties in close proximity to, or directly adjoined to, surrounding tenants or structures. Where insurance requirements and industry practices, as well as some local amendments in place around the country, dictate required physical separation (either with fire rated construction or distance), the IBC would be extremely permissive by comparison.

On the whole, the proposed modifications would unnecessarily increase protection for segments of the industry that need no such protections and would severely compromise the protections that should be afforded for other segments. Therefore, it is highly recommended that this proposal be disapproved and the effort toward consolidating requirements be revisited.

Bibliography: Distilled Spirits Council of the United States (DSCUS) *Recommended Fire Protection Practices for Distilled Spirits Beverage Facilities*

FM Global Loss Prevention Data Sheet (FM LPDS) 8-8, *Distilled Spirits Storage*

FM LPDS 7-74, *Distilleries*

XL Catlin GAPS Guidelines GAP.8.1.0.1, *Barrel Storage of Distilled Spirits*

XL Catlin GAPS Guidelines GAP.17.23.3.2, *Distilleries*

2003 International Building Code and International Fire Code

2009 International Building Code and International Fire Code

2015 International Building Code and International Fire Code

NFPA 30, *Flammable and Combustible Liquids Code*

Fire Hazards and Fire Fighting in Whiskey Warehouses, Kentucky Inspection Bureau, 1957

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction. The proposed changes will significantly and unnecessarily increase the cost of construction for certain portions of the industry (beer, cider, low- to mid-level wines, etc.). Manufacturing facilities for higher ethanol concentrations may see a limited reduction in construction cost, but the predicted long-term losses within communities due to fire will offset those individual gains via the larger economy.

G91-18

IBC: Table [F] TABLE 509

Proposed Change as Submitted

Proponent: Ed Kulik, Chair, representing ICC Building Code Action Committee (BCAC@iccsafe.org)

THIS CODE CHANGE WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE

2018 International Building Code

Revise as follows

**[F] TABLE 509
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input ^a	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower ^a	1 hour or provide automatic sprinkler system
Refrigerant machinery room ^a	1 hour or provide automatic sprinkler system
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms ^a	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour
Stationary storage battery systems having an energy capacity greater than the threshold quantity specified in Table 1206.2 of the International Fire Code	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Electrical installations and transformers ^a	See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of NFPA 70 for protection and separation requirements.

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m³.

a. See Chapter 6 of the International Fire Code for additional construction related requirements

Reason: 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 2017 the BCAC has held 3 open meetings. In addition, there were numerous Working Group meetings and conference calls for the current code development cycle, which included members of the committee as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <https://www.iccsafe.org/codes-tech-support/codes/code-development-process/building-code-action-committee-bcac>.

This is a simple footnote pointer so designers are aware of additional construction and/or installation requirements for these incidental use building systems that are located in Chapter 6 of the International Fire Code.

This proposal is part of a comprehensive update to IFC Chapter 6 by the F-CAC. F-CAC fully supports this proposal.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This proposal adds a pointer to existing requirements in the IFC. No new or additional construction requirements are being introduced into the IBC.

Public Hearing Results

Committee Action:
Disapproved

Committee Reason: The proposal was disapproved as it was seen as an unnecessary pointer. There appears to be very little related to Table 509 found within Chapter 6 of the IFC. (Vote: 11-3)

Assembly Action:
None
G91-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Ed Kullik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests As Submitted.

Commenter's Reason: Section 509 is used during the design process of the building. The proposed pointer, in the form of a footnote to IBC Table 509 for specific room or area types, directs the code user to the additional applicable construction/installation requirements in Chapter 6 of the Fire Code with the Building Code for these incidental uses, which otherwise might be missed.

Reference to Chapter 6 of the Fire Code is applicable, because it focuses on building systems and services as they relate to potential safety hazards and when and how they should be installed. This chapter brings together all building system- and service-related issues for convenience and provides a more systematic view of buildings. The following building services and systems construction/installation requirements for the following are addressed: fuel-fired appliances, electrical equipment, wiring and hazards, mechanical refrigeration, elevator operation, maintenance and fire service keys, commercial kitchen hoods, commercial kitchen cooking oil storage and hyperbaric facilities.

Additionally, the FCAC submitted 17 proposals as part of a comprehensive package addressing technical and organizational changes to Chapter 6 of the Fire Code. These changes included additional construction and installation requirements for building systems and services which were approved at the Committee Action Hearing, including installation of fuel oil tanks within buildings and non-portable fuel-fired appliances, construction of refrigeration machinery rooms, and listed and labeled electrical equipment.

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

This proposal adds a pointer to existing requirements in the IFC. No new or additional construction requirements are being introduced into the IBC.

G91-18

G140-18

IBC: 3002.3, 3002.3.1

Proposed Change as Submitted

Proponent: Ed Kulik, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2018 International Building Code

Revise as follows

3002.3 Emergency signs for other than occupant evacuation elevators... Where other than occupant evacuation elevators are provided, an *approved* pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the ~~exit stairways-exits~~ and not to use the elevators in case of fire. The sign shall read: IN CASE OF FIRE, ELEVATORS ARE OUT OF SERVICE. USE EXIT ~~STAIRS~~.

~~Exceptions-Exception:~~

- ~~1.~~ The emergency sign shall not be required for elevators that are part of an accessible *means of egress* complying with Section 1009.4.
- ~~2.~~ The emergency sign shall not be required for elevators that are used for occupant self-evacuation in accordance with ~~Section 3008~~.

Add new text as follows

3002.3.1 Emergency signs for occupant evacuation elevators. Where occupant evacuation elevators are provided, an approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use occupant evacuation elevators in the event of fire. The sign shall read: IN CASE OF FIRE, THIS OCCUPANT EVACUATION ELEVATOR IS AVAILABLE FOR EXITING THE BUILDING.

Analysis: Duplicated text in the International Fire Code not shown for brevity.

Reason: This is one of 17 proposals being submitted as a package relating to technical and organizational changes proposed for Chapter 6 of the Fire Code. While the Code Committees will consider each proposal independently, the intent is for approval of all proposals in this package which have been submitted as a correlated set of companion code change proposals.

This proposal correlates with the series of proposals to the IFC Chapter 6 submitted by the F-CAC for correlation of Elevator requirements and specification of required signage for all elevators.

This proposal addresses the emergency signage for the elevators in the IBC and the IFC. The changes are reflected in the IBC as these are the parent sections for these requirements. If approved this language will be duplicated in Chapter 6 of the IFC. This also correlates with the signage requirements in ASME A17.1. Exit stairways were changed to "exits" because there could be ramps instead of stairways.

Two distinct sections are established between occupant evacuation elevators and other than those elevators.

This proposal also adds standardized language to both the IBC and the IFC for occupant evacuation elevator signage to ensure consistency between codes and to provide clear and concise building occupant instruction for their use.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) in support of the FCAC's efforts. 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 2017 the BCAC has held 3 open meetings. In addition, there were numerous Working Group meetings and conference calls for the current code development cycle, which included members of the committee as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <https://www.iccsafe.org/codes-tech-support/codes/code-development-process/building-code-action-committee-bcac>.

Cost Impact: The code change proposal will decrease the cost of construction by providing standardized language for the emergency signs for occupant evacuation elevators, and correlating for consistency the standardized language for other elevators.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: There is confusion regarding cueing at elevator lobbies and whether the elevator is available or not. The proposal doesn't specify clearly. The code official may enforce the requirement at all elevator call stations, not just occupant elevators. The flaw in this proposal is dealing with the typical highrise situations. It is should not be every elevator in every lobby. The use of the term "is" will create a situation where occupants may wait for an elevator that never comes. Tinker with the words "is" and "may" and possibly "pictorial." There may be a way to link the signage to the visual requirement that is going to be part of the A117.1 automated system.....so that when someone goes to an elevator lobby they would know whether the elevator will come or not....or when to go to the stairs. There is a need to identify the elevators, but this is not the way to do it. Maybe simple a sign saying "evacuation elevator, "occupant elevator," "when directed," or "this elevator available...: (Vote: 14-0)

Assembly Action:

None

G140-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Ed Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests As Modified by This Public Comment.

Modify as follows:

2018 International Building Code

3002.3 Emergency signs for other than occupant evacuation elevators... Where other than occupant evacuation elevators are provided, an *approved* pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exits and not to use ~~the these~~ elevators in case of fire. The sign shall read: IN CASE OF FIRE, ELEVATORS ARE OUT OF SERVICE. USE AVAILABLE EXIT.

Exception:

The emergency sign shall not be required for elevators that are part of an accessible *means of egress* complying with Section 1009.4.

-

3002.3.1 Emergency signs for occupant evacuation elevators. Where occupant evacuation elevators are provided in accordance with Section 3008, an approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station ~~on all floors instructing notifying~~ occupants to use occupant evacuation elevators in the event of fire. The sign shall read: ~~IN CASE OF FIRE, THIS THESE OCCUPANT EVACUATION ELEVATOR IS AVAILABLE FOR EXITING THE BUILDING~~ ELEVATORS ARE AVAILABLE AS AN EXIT.

Commenter's Reason: IBC Section 3008.1.1 requires that "signage shall be provided to denote which elevators are available for occupant evacuation." However, the code does not provide standardized language for that signage. Requiring standardized language would reduce confusion for the occupants regarding the use of these elevators, by providing consistency and clarity for the required signage.

As noted in the proposed new text for Section 3002.3.1, the standardized language for these occupant elevators is only applicable to the elevator call stations serving those elevators designated as occupant elevators in accordance with the requirements in IBC Section 3008.

Modifications have been made to the original proposal to address the specific direction from the code development committee.

The proposed standardized language for the sign is in alignment with ASME A17.1.

This text is repeated in IFC Section 606.3.

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

This would require a sign at occupant evacuation elevators. A sign was already required at other elevators.

E51-18

IBC: 1010.1.9 (New), (IFC[BE] 1010.1.9 (New))

Proposed Change as Submitted

Proponent: Ed Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2018 International Building Code

Add new text as follows

1010.1.9 Vestibules. Where required by a compliance path of the International Energy Conservation Code, building entrances shall be provided with vestibules.

Reason: The IECC requires vestibules to be provided at building entrances in all climate zones other than 1 and 2. In the design of buildings this can be a significant feature of entrances. The requirement can be overlooked by designers if they focus on the IBC during initial design and then are perhaps surprised by the requirement when adding the IECC to their construction documents. This proposal provides a direct reference to the compliance paths in the IECC for vestibules.

The proposal puts the reference for vestibules in Chapter 10 after the section for door arrangements (Section 1010.1.8). Since Section 1010.1.8 addresses doors in a series, this is the most logical place for designers to understand that a vestibule may be required by the IECC.

The BCAC developed this proposal with the SEHPCAC. 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 2017 the BCAC has held 3 open meetings. In addition, there were numerous Working Group meetings and conference calls for the current code development cycle, which included members of the committee as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <https://www.iccsafe.org/codes-tech-support/codes/code-development-process/building-code-action-committee-bcac>.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This requirement already exists in the IECC. Inclusions in the IBC doesn't result in any construction not already anticipated.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: This pointer for vestibules is not needed in IBC in areas where the Energy codes are adopted because it is already covered in the Energy Code. The term 'vestibule' could be confused with stairway vestibules. (Vote: 12-2)

Assembly Action:

None

E51-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Ed Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests As Modified by This Public Comment.

Modify as follows:

2018 International Building Code

1010.1.9 Vestibules. ~~Where in jurisdictions that have adopted the International Energy Conservation Code, where required by a compliance path of the International Energy Conservation Code,~~ building entrances shall be provided with vestibules.

Commenter's Reason: Unlike the IBC, the requirement in the IECC is a mandate for a building to have vestibules at most entrance doors. If a designer is unaware of this requirement, adding a vestibule, or in some cases several vestibules, into the design of a building after it has been through plan review can be a cause some major revisions to the building configuration.

The language being proposed is not in any way intended to mandate that a community must use the *International Energy Conservation Code* (IECC), but rather it is intended to give designers in those communities where the IECC is adopted, that vestibules may be required. The text below indicates the extent of the requirement.

C402.5.7 Vestibules. *Building entrances shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time. The installation of one or more revolving doors in the building entrance shall not eliminate the requirement that a vestibule be provided on any doors adjacent to revolving doors.*

Exceptions: *Vestibules are not required for the following:*

- 1. Buildings in Climate Zones 1 and 2.*
- 2. Doors not intended to be used by the public, such as doors to mechanical or electrical equipment rooms, or intended solely for employee use.*
- 3. Doors opening directly from a sleeping unit or dwelling unit.*
- 4. Doors that open directly from a space less than 3,000 square feet (298 m²) in area.*
- 5. Revolving doors.*
- 6. Doors used primarily to facilitate vehicular movement or material handling and adjacent personnel doors.*
- 7. Doors that have an air curtain with a velocity of not less than 6.56 feet per second (2 m/s) at the floor that have been tested in accordance with ANSI/AMCA 220 and installed in accordance with the manufacturer's instructions. Manual or automatic controls shall be provided that will operate the air curtain with the opening and closing of the door. Air curtains and their controls shall comply with Section C408.2.3*

In addition, the requirement in the IECC for vestibules is mirrored in ANSI/ASHRAE/IESNA 90.1, which is one of the compliance means the IECC allows for a commercial building (IECC - Commercial Provisions, Section C401.2)

With regard to the comment made by the IBC General Code Development Committee that “The term ‘vestibule’ could be confused with stairway vestibules.” As the term is not defined in any of the I-Codes, we must refer to the generally accepted term. The Merriam Webster dictionary defines a vestibule as “An antechamber, hall, or lobby next to the outer door of a building.” The term “vestibule,” while used in IBC Section 1028.1 is not always and only associated with a space into which an exit stair discharges, there are many architectural spaces in a building that are generically called vestibules.

This change will provide one additional aspect of coordination of the ICC model codes package for use by all designers and building officials where appropriate. We urge your overturning the Code Committee’s recommendation and approve this change.

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

This requirement already exists in the IECC. Inclusions in the IBC doesn t result in any construction not already anticipated.

Public Comment 2:

Proponent: Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com)requests As Submitted.

Commenter's Reason: This is a necessary correlation between two codes. The vestibule is a building requirement based on specific conditions cited within the IECC. It is a necessary building component. Referring to another code for this is no different that referring to the IPC for plumbing fixture requirements. Given the choice between copying the requirements from the IECC or referencing the code, this is the superior option.

There should be no confusion regarding what type of vestibule this is because it is clearly described in the IECC.

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

This is a pointer to a code requirement that is often missed by designers and does not change any existing requirement.

Public Comment 3:

Proponent: David Collins, representing The American Institute of Architects (dcollins@preview-group.com)requests As Submitted.

Commenter's Reason: There really should not be any confusion on this topic as there are no requirements in the 2018 IBC that mandate the installation of vestibules - of any kind. The incorporation of vestibules is solely a designer’s choice. But WHEN a designer chooses to incorporate vestibules into a building, there are regulations, but only two; one that has its basis in the accessibility of doors in series and one for exit stairways that discharge into a vestibule which then leads to the exterior:

- 1010.1.8 Door arrangement; which mandates a there be minimum distance between doors when located in series – an enclosure often called out on plans as a “vestibule.”
- Section 1028.1, Exception 2 Exit discharge; which mandates the construction and size of a vestibule when an exit stair discharges into it.

Unlike the IBC, the requirement in the IECC is a mandate for a building to have vestibules at all entrance doors. Sadly in many cases, it is only after a set of plans has been submitted to the community for review (and who has adopted the IECC) does a designer find out that their building is required have vestibules at the entrance doors. Adding a vestibule, or in some cases several vestibules, into the design of a building after it has been through plan review can be a considerable chore on the part of designer, often forcing them to make some major revisions to the building configuration. Even worse is when the plan review fails to catch the need for a vestibule and the error it attempted to be corrected in the field.

The language being proposed is not in any way intended to mandate that a community must use the *International Energy Conservation Code* (IECC), but rather it is intended to give designers in those communities where the IECC is adopted, and in some cases the AHJ, a reminder that if the IECC has been adopted, then vestibules may be required. The need for this “pointer” to the IECC may not be so important if the IECC only required a single vestibule at the main entry door to a building, but for those of you who may not be familiar with the requirements of the 2018 IECC, the requirement is for a vestibule at **all** “building entrances,” not just for the “main” entry door (IECC – Commercial Provisions, Section C402.5.7). Simply put - the requirement for a vestibule is applicable to any door in a building that is an “entrance,” including those doors that are used as a delivery entrance, the staff/employee entrance, and even to those that are just convenience entry points into a building.

C402.5.7 Vestibules. *Building entrances shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time. The installation of one or more revolving doors in*

the building entrance shall not eliminate the requirement that a vestibule be provided on any doors adjacent to revolving doors.

Exceptions: Vestibules are not required for the following:

1. *Buildings in Climate Zones 1 and 2.*
2. *Doors not intended to be used by the public, such as doors to mechanical or electrical equipment rooms, or intended solely for employee use.*
3. *Doors opening directly from a sleeping unit or dwelling unit.*
4. *Doors that open directly from a space less than 3,000 square feet (298 m²) in area.*
5. *Revolving doors.*
6. *Doors used primarily to facilitate vehicular movement or material handling and adjacent personnel doors.*
7. *Doors that have an air curtain with a velocity of not less than 6.56 feet per second (2 m/s) at the floor that have been tested in accordance with ANSI/AMCA 220 and installed in accordance with the manufacturer's instructions. Manual or automatic controls shall be provided that will operate the air curtain with the opening and closing of the door. Air curtains and their controls shall comply with Section C408.2.3*

In addition, the requirement in the IECC for vestibules is mirrored in ANSI/ASHRAE/IESNA 90.1, which is one of the compliance means the IECC allows for a commercial building (IECC – Commercial Provisions, Section C401.2)

With regard to the comment made by the IBC General Code Development Committee that “The term ‘vestibule’ could be confused with stairway vestibules.” We do not disagree that the term “vestibule” is used in the IBC, but as the term is not defined in any of the I-Codes, we must refer to the generally accepted term, as specified in Chapter 2 of each I-Code. The Merriam Webster dictionary defines a vestibule as “An antechamber, hall, or lobby next to the outer door of a building.” The term “vestibule,” while used in IBC Section 1028.1 is not always and only associated with a space into which an exit stair discharges, there are many architectural spaces in a building that are generically called vestibules.

The AIA firmly believes that implementation of the criteria in the IECC is paramount to good design. Several of the Institutes’ policies call for increased energy efficiencies through the application of “Comprehensive, Coordinated and Contemporary Codes.” This change will provide one additional aspect of coordination of the ICC model codes package for use by all designers and building officials where appropriate. We urge your overturning the Code Committee’s recommendation and approve this change.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction. If the design fails to include a vestibule it is a costly matter to add it at plan review. If plan review fails to catch the need for a vestibule, it is costly to try to resolve it in the field. If neither the design or the review catches the omission, then the loss is even larger to the building owner who now must pay for the energy loss attributed to a feature that should have been integrated into the building.