



# DENVER AMENDMENT PROPOSAL FORM FOR PROPOSALS TO THE 2019 DENVER BUILDING CODE AMENDMENTS AND THE 2021 INTERNATIONAL CODES

**DENVER**  
THE MILE HIGH CITY

## 2021 CODE DEVELOPMENT CYCLE

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2) One proposal per this document is to be provided with clear and concise information.

Is a separate graphic file provided ( "X" to answer): \_\_\_ Yes or  X  No

3) Highlight the code and acronym that applies to the proposal

<u>Acronym</u>	<u>Code Name</u>	<u>Acronym</u>	<u>Code Name</u>
DBC-AP	Denver Building Code–Administrative Provisions	IPC	International Plumbing Code
<b>IBC</b>	<b>International Building Code</b>	IRC	International Residential Code
IECC	International Energy Conservation Code	IFGC	International Fuel Gas Code
IEBC	International Existing Building Code	IMC	International Mechanical Code
<b>IFC</b>	<b>International Fire Code</b>	DGC	Denver Green Code

### AMENDMENT PROPOSAL

Please provide all the following items in your amendment proposal.

**Code Sections/Tables/Figures Proposed for Revision:**  
**Part I: IBC Sections 307.1.1, 311.2, 311.3, and DBC (IBC) Section 202,**  
**Part II: IFC Sections 903.2.4.2, 903.2.9.3 and DBC (IFC) Section 202**

**Instructions:** If the proposal is for a new section, indicate (new), otherwise enter applicable code section.

**Proposal:**  
 Revision    New Text    Delete/Substitute    Deletion

**PART ONE: INTERNATIONAL BUILDING CODE**

**IBC 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.

18. ~~Distilling or brewing~~ The production and storage of alcohol beverages with concentrations by volume (ABV) up to and including 16-percent 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:  
     Beverages up to and including 16-percent alcohol in combustible containers

**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:

Beverages up to and including 16-percent alcohol in noncombustible containers

## PART TWO: INTERNATIONAL FIRE CODE

~~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. **reserved**~~

~~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. **reserved**~~

**4001.3 Recommended practices.** The Fire and Building code officials shall have the authority to utilize the recommended practices and data sheet listed in Table 4001.3 to render interpretations and develop policies and procedures in the application of the provisions of the Denver Building and Fire Code and referenced standards. Such interpretations, policies, and procedures shall be in compliance with the intent and objective of this chapter.

**TABLE 4001.3 RECOMMENDED PRACTICES**

NFPA 77	Recommended Practice on Static Electricity
NFPA 497	Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas
NFPA 499	Recommended Practice for the Classification of Combustible Dusts and of Hazardous Locations for Electrical Installations in Chemical Process Areas
<u>FM Global Property Loss Prevention Data Sheet 7-29</u>	<u>Ignitable Liquid Storage in Portable Containers</u>
The Distilled Spirits Council of the United States, Inc.	Recommended Fire Protection Practices for Distilled Spirits Beverage Facilities

**4001.4 Construction Documents.** Construction documents shall be submitted for review and permit prior to the installation, construction, or modification of ABPFs or the operational and storage equipment therein.

## SECTION 4002 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

4002.1 Definitions. The following terms are defined in Chapter 2.

~~BEVERAGE SPIRIT (TTB)~~

~~DENVER BUILDING CODE~~

~~DENVER BUILDING AND FIRE CODE~~

~~DENVER FIRE CODE~~

REMOTE AREA (c.f., NFPA 13)

**4002.2 Acronyms and abbreviations.** The following acronyms and abbreviations shall, for the purposes of this chapter, have the meanings identified below:

**ABPF** Alcohol Beverage Production Facility.

**ABV** Alcohol by Volume.

**ASME** American Society of Mechanical Engineers.

**ASTM** American Society for Testing and Materials.

**DFD** Denver Fire Department

**HMIS** HazMat Inventory Statement.

**HMMP** HazMat Management Plan.

**HMPA** HazMat Permit Application.

**HMR** HazMat Report.

**LEL** Lower Explosive Limit.

**LFL** Lower Flammable Limit.

**MAQ** Maximum allowable quantity per control area in accordance with Section 5003.1.1 of the *International Fire Code*.

**MEC** Minimum Explosive Concentration.

**MSDS** Material Safety Data Sheet

**NEC** National Electrical Code

**TTB** Alcohol and Tobacco Tax and Trade Bureau

**4003.2 Occupancy classification.** The occupancy classification of use areas and storage areas including grain-handling and bottling/packaging systems and processes shall be classified in accordance with Sections 4003.2.1 through 4003.2.3. Quantities of ethanol mixtures exceeding the MAQs but packaged in individual, closed and unpressurized containers not exceeding 1.3 gallons (5 L) in volume shall not be counted towards the MAQs.

**4003.2.1.1 Combustible dust producing operations.** ABPFs or portions thereof containing equipment, systems and processes where grains are stored, transferred or milled in such a manner that the confinement conditions and dust concentrations create a fire or explosion hazard shall be in accordance with Chapter 22 and Chapter 50. The fire and building code officials are authorized to require technical assistance in accordance with Section 104 to establish whether the building or portion thereof is required to be assigned an H-2 occupancy classification and to determine explosion and deflagration hazard reduction criteria.

~~**Exception:** Quantities of ethanol mixtures beverages exceeding the MAQs but packaged in individual containers not exceeding 1.3 gallons (5 L) in volume shall not cause the ABPF or portion thereof to be assigned an H-3 occupancy classification.~~

**4003.3.1 Hazardous materials report (HMR).** An HMR in an approved format is required for all facilities using or storing HazMat. It shall contain at a minimum, critical personnel contact information, pertinent building construction and occupancy information, and an HMIS in accordance with Section 5001.5.2, Appendix H102 and DFD policy.

**4003.3.2 Hazardous materials management plan (HMMP).** An HMMP in accordance with Section 5001.5.1, ~~and~~ Appendix H101 and DFD policy shall be provided in an approved format.

**4003.3.5 Storage plan.** Aisle and storage plans shall be submitted in accordance with Chapters 32 and Chapter 50.

**4003.3.6 Material safety data sheets.** MSDS shall be readily available on the premises for HazMat therein and made available to DFD inspectors upon request.

**4003.6.1.1 System requirements.** Exhaust ventilation systems shall comply with all of the following:

1. Installation shall be in accordance with the International Mechanical Code.
2. Mechanical ventilation over the storage area or use area shall be at a rate of not less than 1 cubic foot per minute per square foot (cfm/ft<sup>2</sup>; 0.00508 cms/m<sup>2</sup>) of floor area.

**Exception:** Areas where Class 1 Liquids are stored in casks are permitted to be provided with an engineered ventilation system in accordance with Chapter 4 of the International Mechanical Code. The air flow rate shall not be less than the greater of:

- (1) that required to maintain the flammable vapor concentration in the storage area at or below 25 percent of the LFL, or
- (2) 0.06 cubic feet per minute per square foot (cfm/ft<sup>2</sup>; 0.000305 cms/m<sup>2</sup>).

3. Systems shall operate continuously ~~unless alternative designs are approved.~~

**Exception:** An approved engineered design alternative.

4. A manual shutoff control shall be provided outside of the room in a position adjacent to the access door to the room, or in an approved location. The switch shall be a break-glass or other approved type and shall be labeled, "VENTILATION SYSTEM EMERGENCY SHUTOFF."
5. Exhaust ventilation shall be designed to consider the density of the material released. For ethanol vapor, inlet air shall be introduced, and exhaust shall be taken, from a point within 12 inches (305 mm) of the floor. For dust, inlet air shall be introduced at a point within 12 inches (305 mm) of the floor and exhaust shall be taken as close to the dust generation source as possible.
6. The location and configuration of both the inlet and exhaust air openings shall be designed to provide air movement across all portions of the floor or room to prevent the accumulation of flammable vapors and suspended dust.
7. Exhaust air shall not be recirculated to occupied areas.

**4003.6.2.1 Indoor.** Spill control and secondary containment shall be provided for H-2 and H-3 occupancies in ABPFs where:

1. The capacity of any single ~~normally closed~~ vessel or system with holding Class 1 Liquids exceeds 55 gallons (208 L);
2. The aggregate capacity of multiple ~~normally closed~~ vessels or systems with holding Class 1 Liquids exceeds 1,000 gallons (3,785 L); or
3. Class 1 Liquids are dispensed into or from a normally open vessel or system exceeding a 5.3-gallon (20 L) capacity.

**4003.6.3.1.1 Flammable liquids.** Sprinkler discharge criteria ~~for~~ in areas of ABPFs or portions thereof, with bulk storage of Class 1 Liquid Liquids in combustible containers including casks, use areas and storage areas in ABPFs or portions thereof classified as H-2 or H-3, shall be in accordance with NFPA 30 but shall not be less than that required in accordance with NFPA 13 for Extra Hazard 2 occupancies.

**Exception:** Sprinkler discharge criteria established by an approved engineered design.

Sprinkler discharge criteria for all other Class 1 Liquid use and storage areas in ABPFs or portions thereof classified as H-2 or H-3 occupancies, shall be in accordance with NFPA 30 but shall not be less than that required by NFPA 13 for Ordinary Hazard Group 2 with over a minimum design area of 3,000 square feet (279 m<sup>2</sup>).

~~**Exception:** H-2 and H-3 occupancies with storage of Class 1 Liquids in casks shall be protected by a sprinkler system designed for Extra Hazard 2 in accordance with NFPA 13, or by an approved engineered design.~~

**4003.6.3.3.1 Initiation.** Manual fire alarm boxes shall be installed in accordance with Section 907.4.2 outside of each interior exit or exit access door in the fire barrier walls separating the H-2 or H-3 occupancies, and in the exterior walls surrounding the H-2 or H-3 occupancies.

**Exception:** On exterior walls of H-2 or H-3 occupancies, fire alarm boxes are permitted to be installed inside of and adjacent to each interior exit, exit access, or exit discharge door ~~in the exterior wall.~~

Manual fire alarm boxes shall be installed at not more than 150-foot (45,720 mm) intervals along corridors, interior exit stairways or ramps, or exit passageways where Class 1 Liquids are transported.

**4003.6.4.2.1 Conveyance equipment.** All conveyance equipment including that used for grain or Class 1 Liquid transfer shall be electrically connected by bond wires, ground cables, piping or similar means to a static grounding system. Conveyor belts shall be electrically conductive and equipped with static eliminators.

Nozzles and vessels used for the transfer of Class 1 Liquids shall be electrically interconnected by:

1. Metallic floor plates on which vessels stand while filling, when such floor plates are electrically connected to the fill stem and grounded; or
2. Where the fill stem is bonded to the container during filling by means of a bond wire.

**Exceptions:**

1. Vats or casks without internal metal or plastic components that could hold a potential difference.
2. Equipment used in post bottling operations such as packaging and box storage shall be grounded in accordance with standards applicable to that equipment and industry practice.

**4003.6.4.3 Lightning protection.** Lightning protection in accordance with NFPA 780 shall be provided on ABPFs with an H-2 occupancy; on miscellaneous structures with a combustible dust production hazard due to the storage, handling, or processing of grains; and on ABPFs with an H-2 occupancy and a still having a 750 gallon (2839L) or larger capacity or aggregate bulk storage of Class I ~~Flammable~~ Liquids of 7,800 gallons (29,526L) or greater.

**4003.6.8.3 Location.** Placards shall be located in accordance with NFPA 704 and shall be provided on the outside of each interior exit or exit access door in the fire barrier walls separating the H-2 or H-3 occupancies. Placards shall also be located on access or exit discharge doors and in the exterior walls surrounding the H-2 or H-3 occupancies.

**4003.6.9.2 Open flames.** Open flames including barrel charring operations, and devices operating at temperatures above 680 °F (360 °C) are prohibited throughout fire areas containing Class 1 Liquid storage areas, Class 1 Liquid use areas, and combustible dust production areas.

**Exceptions:**

1. Areas permitted as designated as smoking.
2. Areas where hot work permits have been issued in accordance with this Section 105. 3.
3. Listed and labeled gas fired or electric unit heaters installed in accordance with the *International Mechanical Code, International Fuel Gas Code, and NFPA 70 (NEC)*. Such equipment shall be located more than eight feet (2438 mm) from any edge of equipment where Class 1 Liquid vapor/air mixtures could exist under normal operations and more than three feet (914 mm) above the floor or grade level within 25 feet (7620 mm) horizontally from any equipment with Class 1 Liquids.
4. Other areas approved by the fire code official.

**4004.2.1.1.9 Empty containers and tanks.** Empty containers and tanks previously used for the storage of hazardous materials shall be free from residual material and vapor as defined by DOTn, the Resource Conservation and Recovery Act (RCRA) or other regulating authority or maintained as specified for the storage of hazardous material.

## **5001 GENERAL**

**Section 5001.1 Scope is amended by replacing Exception 10 and 15, deleting Exception 16, and adding Exceptions 18 and 19 as follows:**

10. The manufacture, storage, dispensing, and use of alcoholic beverages with 16 percent or less alcohol by volume and the remaining constituents having no hazardous properties regulated by the Denver Building and Fire Code ~~remainder of the beverage not being flammable shall not be limited.~~

~~11. To remain:~~

~~15. Storage and use of flammable or combustible liquids that do not have a fire point when tested in accordance with ASTM D92, not otherwise regulated by this code. The manufacture, storage, dispensing, and handling of alcoholic beverages with greater than 16 percent alcohol by volume shall be in accordance with Chapter 40.~~

~~16. Flammable or combustible 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, not otherwise regulated by this code.~~  
**Reserved.**

18. The manufacture, storage, dispensing, and use of alcoholic beverages not meeting the criteria of Exception 10, shall be in accordance with Chapter 40

19. Battery powered industrial trucks regulated by Section 309.

**Section 5701.2 Nonapplicability is amended by replacing Item 10 and adding Item 14 as follows:**

10. The manufacture, storage, dispensing, and use handling of alcoholic beverages with 16 percent or less alcohol by volume and the remaining constituents having no hazardous properties regulated by the Denver Building and Fire Code remainder of the beverage not being flammable.

14. The manufacture, storage, dispensing, and handling of alcohol beverages with greater than 16 percent alcohol by volume shall be in accordance with Chapter 40.

**Section 5704.3.3 Indoor storage is amended by deleting Exception 2**

**5704.3.3 Indoor storage.** Storage of *flammable* and *combustible liquids* inside buildings in containers and portable tanks shall be in accordance with Sections 5704.3.3.1 through 5704.3.3.10.

**Exceptions:**

1. Liquids in the fuel tanks of motor vehicles, aircraft, boats or portable or stationary engines.
- ~~2. The storage of distilled spirits and wines in wooden barrels or casks.~~

**Supporting Information (Required):**

The DBC/IFC Chapter 40 (previously Chapter 38) was originally adopted into the 2016 Denver amendments to the 2015 IFC and predates all similar regulations newly added to the I-Codes. The brand new chapter and modified sections in the I-Codes are inconsistent and in conflict with existing code (and standard) provisions, language and intent – and are still in a state of flux at the national level. The Denver regulations were developed with distillery architects, engineer and owners, and are more comprehensive, better researched and more up to date to be compatible with all the other code sections in the IBC and IFC and applicable standards.

The changes proposed here fall into 3 categories: typos, clarifications, and code changes. Several typos were included in the original draft and not all had been corrected in the subsequent code cycle. Several more were introduced in code changes to this chapter since. Typos include inconsistent formatting with the IFC, list numbers out of sequence, incorrect section references, erroneous words in sentences, etc. These do not change the intent of the code.

Clarifications include text modification to be consistent with the I-Codes, text changes to be consistent with definitions, relocating code provisions to more appropriate locations, etc. These do not change the intent of the code.

Code changes are made to new changes in the baseline codes in order to maintain consistency in regulations throughout the I-codes. This will be necessary for several national code cycles until the new regulations are compatible with the remainder of

the codes and applicable standards. In addition a new technical reference has been added that was developed in 2020, and an existing section from Chapter 50 was duplicated in 4004.2.1.1.9 (since Chapter 50 points to Chapter 40).

**Other Regulations Proposed to be Affected**

N/A

**Referenced Standards:** N/A

**Impact:**

How will this proposal impact cost and restrictiveness of code? ("X" answer for each item below)

Cost of construction:    \_\_\_ Increase    \_\_\_ Decrease     X  No Impact  
Cost of design:            \_\_\_ Increase    \_\_\_ Decrease     X  No Impact  
Restrictiveness:         \_\_\_ Increase    \_\_\_ Decrease     X  No Impact

**Departmental Impact (City use only):**

This amendment proposal increases/decreases/is neutral to the cost of plans review.

This amendment increases/decreases/is neutral to the cost of inspections.