



To: Mayor and City Council
 From: Jennifer Hoffman, City and County Manager
 Prepared by: Tim Pate, Chief Building Official
 Anna Bertanzetti, Co-Director Com Dev

Meeting Date	March 7, 2023
Agenda Category	Council Business
Agenda Item #	11(a)

Proposed Ordinance No. 2205, Adoption of Primary Codes by Reference - the 2021 International Building Codes and Amending Associated Sections in Title 15 - Second Reading

Summary

[View Correspondence](#) and visit [BroomfieldVoice.com](#)

- The Broomfield Charter authorizes the City and County to adopt standard codes, such as the International Code Council code series for buildings.
- This proposal is for adoption of the updated 2021 editions of the International Codes and related revisions to the Broomfield Municipal Code. This will include the 2021 International Building Code, 2021 International Plumbing Code, 2021 International Mechanical Code, 2021 International Fuel Gas Code, 2021 International Residential Code (IRC), 2021 International Energy Conservation Code, 2021 International Fire Code, the 2021 International Existing Building Code, the 2021 International Swimming Pool and Spa Code, the latest edition of the National Electrical Code adopted by the State of Colorado, the 1997 Uniform Code for the Abatement of Dangerous Buildings, 1997 Uniform Housing Code, and the most current version of the American Society of Mechanical Engineers A117.1 Safety Code for Elevators and Escalators.
- Adoption of the 2021 International Code package will allow Broomfield to keep pace with changes in construction materials and techniques and changes in overall life and fire safety requirements. A list of the significant changes to the various codes is included in [Attachment 1](#).
- There are numerous local amendments previously adopted through the Broomfield Municipal Code that are removed through proposed Ordinance No. 2205. These local amendments are no longer necessary as they are now included as part of the various 2021 codes.
- The City and County of Broomfield Building Division hosted a public meeting for homebuilders, homeowners, architects, engineers, and other contractors on August 11, 2022, and reviewed the significant changes between the 2018 and the 2021 International Codes for residential and commercial buildings. There were approximately 14 people representing home builders and designers that attended. Broomfield received positive feedback on the proposed 2021 codes.
- The new codes will apply to new construction, additions, and remodels. Existing structures are not required to be upgraded to the new standards unless remodeling is done.
- The 2021 IRC requires fire sprinklers in all new townhouses and all new one- and two-family homes, but would not apply retroactively to alterations or additions of existing homes unless there are existing fire sprinklers in the buildings. The recommendation of the Building Division and North Metro Fire Rescue District is to keep the adopted amendment deleting the requirements for residential fire sprinklers for one- and two-family homes and townhomes in place with the code update. Additional details regarding this issue can be found in the Fire Code section within this memorandum.
- Proposed Ordinance No. 2205 will adopt the updated editions of the Codes listed above.

Financial Considerations

As proposed, local amendments as referenced in the municipal code will remain in place. At this time, staff does not anticipate the change to the 2021 codes will impact staff resources or expenses. If Council considers local amendments to the Energy Code, there may be impacts to staff resources to implement such code amendments depending on the scope of the amendments and staff will provide information regarding those potential impacts concurrent with the study session discussion for the Energy Code strengthening amendments.

Prior Council or Other Entity Actions

- On [March 14, 2017](#), Council adopted the 2015 Edition of the International Codes with Ordinance No. 2042
- On [January 14, 2020](#), Council passed Ordinance No. 2115 on first reading.
- On [February 25, 2020](#), Council adopted the 2018 Edition of the International Codes, with Ordinance No. 2115.

- [February 7, 2023](#) - City Council held a public hearing for the first reading of Ordinance No. 2205. The ordinance was approved unanimously on first reading.

Boards & Commissions Prior Actions & Recommendations

The Advisory Committee on Environmental Sustainability was provided an overview of the code update at their January 9, 2023 meeting. ACES voted to recommend approval of the 2021 IBC Code Update by a vote of 7-0.

Council Priorities / Comprehensive Plan / Long Range Financial Plan

- | | | |
|-------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------|
| <input type="checkbox"/> Affordable Housing | <input type="checkbox"/> Mental Health Strategic Plan | <input type="checkbox"/> Comp Plan Goal - Other Long Range Financial Plan |
| <input type="checkbox"/> Diversity, Equity, Access, and Inclusion | <input type="checkbox"/> Oil and Gas | |
| <input type="checkbox"/> Economic Vitality | <input checked="" type="checkbox"/> Sustainability | |
| <input type="checkbox"/> Creative Economy | <input type="checkbox"/> Transportation | |
| | <input type="checkbox"/> Water | |

Proposed Actions/Recommendations

Based on the above, it is recommended...

- Hold the public hearing
- Following and subject to the results of the public hearing, if Council wishes to approve the ordinance, it is recommended....
That Ordinance No. 2205 be adopted on second reading as directed by the City Council and be published.

Alternatives

- Continue to enforce the currently adopted 2018 Code package.

STAFF MEMO FROM THE FIRST READING
 can be located [here](#)

Public Comments

Any public comments regarding the proposed repealing of the residential growth management regulations can be found at [this link](#) in the correspondence folder.

Follow Up After First Reading

During the meeting on February 7, 2023, questions were asked about the current local amendment in Chapter 15-16 regarding fire sprinklers for townhomes, single family, and paired homes.

As discussed during the meeting and included in the prior staff memorandum, Broomfield has not required residential sprinkler systems for townhomes, paired homes or single family homes in the past due to a number of factors:

- Cost to install sprinkler systems
- Limited availability of plumbing contractors who are willing to install a hybrid sprinkler system
- The necessity to contract with a fire sprinkler contractor (resulting in additional cost)
- Potential impact for staff resources (Broomfield and NMFRD) by the need for additional duties for plan review and inspections of sprinkler systems

Based on the experience with Baseline and also considering builders have indicated a significant reduction in the anticipated number of new single-family, paired home, and townhome permits in the coming year, staff anticipates fire sprinkler systems can be added with existing FTEs. Additional training will be needed to ensure all plan reviewers receive

training and staff believes this can be accomplished within the next few months. North Metro Fire District is fully capable of providing plan reviews and field inspections for these added residential fire sprinkler permits.

The current builders in North Park and for Century Community Interlocken townhomes are using fire sprinkler companies to do these standalone fire sprinkler systems in the new homes. Previously the feedback staff received was that plumbing companies were not trained but also did not have proper insurance to do multipurpose fire sprinkler systems and that plumbing companies were not interested in taking on the additional potential liability for these systems. Staff will do more outreach to see if this is still a current assessment as we move forward.

One of the questions from the first reading was whether staff could provide an estimate for the cost savings for homeowners in regard to insurance for homes with versus without sprinklers. Staff was able to get two estimates for average sized homes and the estimates were a savings between \$160-\$175 per year. The typical cost for adding a sprinkler system is currently around \$4-\$5 per square foot of home based on the sprinkler systems being added to homes within the Baseline subdivision. This equates to around \$8,000-\$15,000 for homes around 2,000 to 3,000 square feet in floor area. Based on these estimates, it would take an extended amount of time (50 years or more) to have the insurance savings fully reimburse a homeowner for the initial investment cost in having sprinkler systems added to a home.

Currently, Boulder County, Federal Heights, Golden, Superior, and Westminster require sprinkler systems for single family and paired homes. Fort Collins requires fire sprinklers for paired homes, but not single family detached homes. Louisville had residential sprinkler system requirements, but amended their code to remove this requirement after the Marshall fire to assist with the rebuilding process.

Greeley, Boulder, Boulder County, and unincorporated Adams County all require sprinklers for townhome developments.

Based on the questions and comments during the first reading and the ongoing success with implementing the sprinkler systems for residential development within the Baseline area, staff determined it would be appropriate to revisit this local amendment earlier rather than waiting until full adoption of the 2024 codes in three years.

Staff will continue to research the financial impacts (additional costs as well as potential savings through insurance or other incentive opportunities) of a proposed code amendment to require the fire sprinklers for all future townhomes, single family and paired homes. In addition, staff will schedule outreach with the community and developers active in Broomfield to get feedback on the potential impact of such a modification. We expect this outreach and research to occur within the next few months.

Staff will include this potential amendment in the future study session regarding the Wildland-Urban Interface codes. This study session is not yet scheduled.

Ordinance No. 2199

Proposed Ordinance No. 2205 would update Title 15 with the 2021 Editions of the International Codes. If substantially amended after second reading and approval by Council, the proposed Ordinance No. 2205 will be published by title. If Ordinance No. 2199 is amended after second reading, then it will be published in full.

ORDINANCE NO. 2205

AN ORDINANCE AMENDING CERTAIN SECTIONS WITHIN THE BROOMFIELD MUNICIPAL CODE AND ADOPTING THE 2021 INTERNATIONAL BUILDING CODE AND RELATED CODES AS PRIMARY CODES BY REFERENCE WITH AN EFFECTIVE DATE OF APRIL 15, 2023

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY AND COUNTY OF BROOMFIELD, COLORADO:

TITLE 15 - BUILDINGS AND CONSTRUCTION

Chapter 15-03 - Building Codes: Adoption and Administration

15-03-010 - Intent.

- (A) The intent of this chapter is to adopt by reference and with modifications the International Building Code, ~~2018~~ **2021** Edition; the International Residential Code, ~~2018~~ **2021** Edition; the National Electrical Code, the latest edition adopted by the State of Colorado; the International Plumbing Code, ~~2018~~ **2021** Edition; the International Mechanical Code, ~~2018~~ **2021** Edition; the International Fuel Gas Code, ~~2018~~ **2021** Edition; the International Energy Conservation Code, ~~2018~~ **2021** Edition; the International Existing Building Code, ~~2018~~ **2021** Edition; the International Swimming Pool and Spa Code, ~~2018~~-**2021** Edition; the Uniform Code for the Abatement of Dangerous Buildings, 1997 Edition; the International Fire Code, ~~2018~~-**2021** Edition; the Uniform Housing Code, 1997 Edition, and the most current edition of the American Society of Mechanical Engineers (ASME) A17.1 Safety Code for Elevators and Escalators.
- (B) Hereinafter, all such codes may be referred to as the "Building Code" of the city, hereinafter referred to as "this code." The city council finds that the adoption of such building codes is essential in the preservation of the health, safety and welfare of the citizens of the city.
- (C) The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through affordability, structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment, to provide safety to firefighters and emergency responders during emergency operations, regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of plumbing equipment and systems, fuel gas systems, mechanical systems, and to regulate the design and construction of buildings for the effective use of energy.

15-03-020 - Adoption of building codes.

The following documents, one copy of each of which is on file in the office of the city clerk, being marked and designated as stated, are hereby referred to, adopted, and made a part hereof as if fully set forth in this title, with the amendments indicated in the following sections of this title. Provisions in the appendices shall not apply unless specifically adopted.

- (1) The "International Building Code," ~~2018~~ **2021** Edition (IBC), published by the International Code Council, Inc., and in particular Chapters 2 through 35 and Appendix C Group U - Agricultural Buildings; Appendix E - Supplementary Accessibility

Requirements; Appendix G - Flood-Resistant Construction; Appendix I - Patio Covers; and Appendix J - Grading, inclusive, are hereby adopted as the building code for the city. The provisions of the International Building Code as amended shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of every building or structure or any appurtenances connected or attached to such building or structures.

EXCEPTION: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with this code or the International Residential Code.

- (2) The "International Residential Code for One- and Two-Family Dwellings," ~~2018~~ **2021** Edition (IRC), published by the International Code Council, Inc., and in particular Chapters 2 through 10 and 12 through 32, and Appendix H - Patio Covers, Appendix P – Sizing of Water Piping System. The provisions of the International Residential Code for One- and Two-Family Dwellings as amended shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above-grade plane in height with a separate means of egress and their accessory structures not more than three stories above grade plane in height.

EXCEPTIONS: The following shall be permitted to be constructed in accordance with this code where provided with a residential fire sprinkler system complying with section 2904:

- A. Live/work units located in townhomes and complying with the requirements of Section 419 of the International Building Code.
- B. Owner-occupied lodging houses with five or fewer guestrooms.
- C. A care facility with five or fewer persons receiving custodial care within a dwelling unit.
- D. A care facility with five or fewer persons receiving medical care within a dwelling unit.
- E. A care facility with five or fewer persons receiving care with a single family dwelling.

...

- (6) The "International Plumbing Code," ~~2018~~ **2021** Edition (IPC), published by the International Code Council, Inc., in particular Chapters 2 through 13, Appendix B - Rates of Rainfall for Various Cities, and Appendix E - Sizing of Water Piping System, is hereby adopted as the plumbing code for the city. The provisions of the International Plumbing Code, as amended, shall apply to the installation, alteration, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, and where connected to a water or sewage system and all aspects of a medical gas system, nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and condensate vacuum collection systems. The installation of fuel gas distribution piping and equipment,

*Bold type indicates new material to be added to the Broomfield Municipal Code.
Dashes through words indicate deletions from the Broomfield Municipal Code.*

fuel-gas-fired water heaters and water heater venting systems shall be regulated by the International Fuel Gas Code.

EXCEPTION: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the International Residential Code.

- (7) The "International Mechanical Code," ~~2018~~ **2021** Edition (IMC), published by the International Code Council, Inc., and in particular Chapters 2 through 15 and Appendix A inclusive, is hereby adopted as the mechanical code for the city. The provisions of the International Mechanical Code, as amended, shall apply to the installation, alterations, repairs and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

EXCEPTION: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the International Residential Code.

- (8) The "International Fuel Gas Code," ~~2018~~ **2021** Edition (IFGC), published by the International Code Council, Inc., and in particular Chapters 2 through 8, inclusive, is hereby adopted as the fuel gas code for the city. The provisions of the International Fuel Gas Code, as amended, shall apply to the installation of gas piping systems, gaseous hydrogen systems, fuel gas appliances and related accessories as covered in this code. These requirements apply to gas piping systems extending from the point of delivery to the outlet of the appliance shutoff valve and the installation and operation of residential and commercial fuel gas appliances and related accessories.

EXCEPTION: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the International Residential Code.

- (9) The "International Energy Conservation Code," ~~2018~~ **2021** Edition (IECC), published by the International Code Council, Inc., and in particular Chapters 2 through 6 inclusive, is hereby adopted as the energy code for the city. The provisions of the International Energy Conservation Code, as amended, shall apply to all matters governing the design and construction of buildings for energy efficiency. The International Energy Conservation Code (IECC) is intended to provide flexibility to permit the use of innovative approaches and techniques to achieve the efficient use of energy. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances.

- (10) The "International Fire Code," ~~2018~~ **2021** Edition (IFC), published by the International Code Council, 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041-3401, and in particular Chapters 1 through 45 and Appendix B, Fire-Flow Requirements for Buildings; Appendix C, Fire Hydrant Locations and Distribution; Appendix E, Hazard Categories; Appendix F, Hazard Ranking; and Appendix G, Cryogenic Fluids - Weight and Volume Equivalents, inclusive.

- (11) The most current edition of the ASME A17.1 Safety Code for Elevators and Escalators, as published by the American Society of Mechanical Engineers, Three Park Avenue, New York, New York 10016 and hereinafter referred to as the elevator and escalator code. The provisions of the ASME Codes as adopted by chapter 15-18, as amended, shall apply to the design, construction, operation, inspection, testing, maintenance, alteration and repair of the equipment defined in ASME, its associated parts and its hoistways, where located in or adjacent to a building or structure.
- (12) The "International Existing Building Code," ~~2018~~ **2021** Edition (IEBC) published by the International Code Council, 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041-3401, and in particular Chapters 1 through 16, inclusive, is hereby adopted as the existing building code for the city. The provisions of the International Existing Building Code shall apply to the repair, alteration, change of occupancy, addition to and relocation of all existing buildings other than one and two family dwellings and townhomes.
- (13) The "International Swimming Pool and Spa Code" ~~2018~~ **2021** Edition, (ISPC) published by the International Code Council, 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041-3401, and in particular Chapters 1 through 11 inclusive are hereby adopted as the swimming pool and spa code for the city. The provisions of this code shall apply to the construction, alteration, repair and maintenance of aquatic recreation facilities, pools, and spas. The pools and spas covered by this [code] are either permanent or temporary, and shall be only those that are designed and manufactured to be connected to a circulation system and that are intended for swimming, bathing, or wading.

15-03-070 - Permits.

...

- (B) *Work exempt from permit.* Exemptions from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. Permits shall not be required for the following:

Building:

1. Retaining walls that are ~~less than~~ three feet (1,219 mm) **or less** in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding flammable liquids.
2. Walks not more than thirty inches (762 mm) above adjacent grade and driveways, and not over any basement or story below.
3. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.
4. Temporary motion picture, television and theater stage sets and scenery.
5. Swings and other playground equipment.
6. Window awnings supported by an exterior wall that do not project more than fifty-four inches (1,372 mm) from the exterior wall of detached one- and

two-family dwellings and townhouses not more than three stories above-grade in height and Group R-3 and U occupancies.

7. Non-fixed and movable fixtures, cases, racks, counters and partitions not over five feet nine inches (1,753 mm) in height.
8. Fences thirty inches high or less.
9. One story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area is not greater than 120 square feet and the structure is associated with a detached single family home.

15-03-100 - Fees.

...

TABLE 1-A
Building Permit Fees

Other Inspection Fees

1. Plan review fee	65% of the building permit fee. After the original plan review fee, an annual plan review fee may be paid for each house model in a subdivision in lieu of each house built, provided that no changes are made after the original plan review.
2. Reinspection fee	\$75.00 \$150 each
3. Inspection outside of normal business hours (minimum charge 2 hours)	\$75.00/hr
4. Inspection for which no fee is specifically indicated (minimum charge one-half hour)	\$75.00/hr
5. Additional plan review required by changes, additions, or revisions to approved plans (minimum charge one-half hour)	\$50.00/hr
6. Noncompliance grading statement	\$50.00. In addition, performance guarantee shall be submitted in accordance with subsection 15-05-010(F), B.M.C.

7. Work without a permit investigation fee	An additional amount equal to the permit fee
8. Inspection fees for mobile homes and travel trailer parks per space	\$100.00
9. Demolition	\$100.00
10. Completion/clean-up	\$100.00
11. Sump to sewer	\$100.00
12. Temporary stand/kiosk	\$100.00

15-03-110 - Inspections and testing.

(C) *Required inspections.* The building official, upon notification, shall make the inspections set forth in subsections (1) through (16) below.

- (1) Footing and foundation inspection. Footing and foundation inspections shall be made after excavations for footings are complete and any required reinforcing steel is in place. For concrete foundations, any required forms shall be in place prior to inspection. The foundation inspection shall include excavations for thickened slabs intended for the support of bearing walls, partitions, structural supports, or equipment and special requirements for wood foundations.
- (2) Concrete slab and under-floor inspection. Concrete slab and under-floor inspections shall be made after in-slab or under-floor reinforcing steel and building service equipment, conduit, piping accessories, and other ancillary equipment items are in place, but before any concrete is placed or floor sheathing installed, including the subfloor. Underground inspection shall be made after trenches or ditches are excavated and bedded, piping installed, and before backfill is put in place. When excavated soil contains rocks, broken concrete, frozen chunks, and other rubble that would damage or break the piping or cause corrosive action, clean backfill shall be on the job site.

Special inspections shall be in accordance with IBC Section 1802.2.2.4, as amended, and IRC Section R401.4.4, as amended.

- (3) Lowest floor elevation. In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, the elevation certification required in IBC Section 1612.5 and IRC Section R322 shall be submitted to the building official.
- (4) Plumbing, mechanical, gas, and electrical systems inspection. Rough inspection of plumbing, mechanical, gas, and electrical systems shall be made after the roof, framing, fireblocking and bracing are in place and all ducting and other components to

be sealed are complete, prior to covering or concealment, before fixtures or appliances are set or installed, and prior to framing inspection. For single-family dwellings, all rough inspections shall be done at the same time as the rough framing inspection. ~~Exterior lath inspections shall be done either before or at the same time as other rough inspections.~~

EXCEPTION: Ground-source heat pump loop systems tested in accordance with IMC Section 1208.1.1 and IRC Section M2105.1 shall be permitted to be backfilled prior to inspection.

The requirements of this section shall not be considered to prohibit the operation of any heating equipment or appliances installed to replace existing heating equipment or appliances serving an occupied portion of a structure, provided that a request for inspection of such heating equipment or appliances has been filed with the department not more than forty-eight hours after such replacement work is completed, and before any portion of such equipment or appliances is concealed by any permanent portion of the structure.

Chapter 15-04 - International Building Code

15-04-010 - Amendments to the International Building Code.

The following amendments are hereby made to the ~~2018~~ **2021** International Building Code which shall be referred to in this chapter 15-04 as the IBC:

...

(I) **Amend footnote g for Table 705.8 to read as follows:**

g. The area of openings in an ~~open parking structure~~ open parking garage in accordance with Section 406.5 with a fire separation distance of 10 feet or greater shall not be limited.

(J) **Amend Section 707.6 to add the new exceptions below:**

6. Openings shall not be limited to an aggregate width of 25 percent of the length of the wall where opening serves a shaft enclosure in accordance with Section 713.

7. Openings shall not be limited to an aggregate of 25 percent of the length of the wall where opening serves a chute access room in accordance with Section 713.13.3 or a chute discharge room in accordance with Section 713.13.4.

...

(P) **Amend Section 1006.3 to read as follows:**

1006.3 Egress from stories or occupied roofs. ~~The means of egress system serving any story or occupied roof shall be provided with the~~ All spaces located on a

story or occupied roof shall have access to the required number of separate and distinct exits based on the aggregate occupant load served in accordance with this section.

Note: All of the corresponding amendments within Section 15-04-010 are updated to reflect the new lettering with the addition of the new amendments such that the amendments are in numerical order.

Chapter 15-05 - International Residential Code

15-05-010 - Amendments to the International Residential Code.

The following amendments are hereby made to the ~~2018~~ **2021** International Residential Code, which shall be referred to in this chapter 15-05 as the IRC:

(A) Chapter 1 is hereby deleted. Refer to chapter 15-03, B.M.C., for administrative requirements.

(B) ~~(B) Section R202 is amended as follows:~~

~~Section R202 Definitions:~~

~~STAIRWAY — One or more flights of stairs, either interior or exterior, with the necessary landings and connecting platforms to form a continuous and uninterrupted passage from one level to another.~~

Amend Section R202 Definition for Exterior Wall to read as follows:

[RE] (RB) EXTERIOR WALL.

An above-grade wall that defines the exterior boundaries of a building. Includes between-floor spandrels, peripheral edges of floors, roof and basement knee walls, dormer walls, gable end walls, gable end roof trusses, walls enclosing a mansard roof and basement walls with an average below-grade wall area that is less than 50 percent of the total opaque and nonopaque area of that enclosing side.

For the definition applicable in Chapter 11, see Section N1101.6.

(C) Table R301.2(1), Climatic and geographic design criteria is hereby amended as follows:

**TABLE R301.2(1)
Climatic and Geographic Design Criteria**

GROUND SNOW LOAD:	30
WIND SPEED (mph):	440 Design per ASCE 7-16
SEISMIC DESIGN CATEGORY:	B

SUBJECT TO DAMAGE FROM:	
Weathering:	Severe
Frost line depth:	36"
Termite:	n/s
WINTER DESIGN TEMP:	1°F
ICE BARRIER UNDERLAYMENT REQUIRED:	NO
FLOOD HAZARDS:	1973/1988
AIR FREEZING INDEX:	500-1000
ANNUAL MEAN TEMP:	50°F

FIRM Panel Dates for Printed Panels of Broomfield, Colorado:

0850730040F, 0850730059F, 0850730067F, 0850730070F, 0850730078F, 0850730105F all with an effective date ranging from August 18, 2004 to August 15, 2019.

0850730079G, 0850730083G, 0850730085G, 0850730086G, 0850730087G, 0850730088G, 0850730089G, 0850730091G all with effective dates ranging from August 18, 2004 to August 15, 2019.

0850730092H with an effective date ranging from August 18, 2004 to August 15, 2019.

(D) Tables R302.1(1) and R302.1(2) are amended as follows:

Footnote b from Table R302.1(1) and footnote c from Table R302.1(2) are deleted.

(E) **Section R302.1 is amended to read as follows:**

R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1(1); or dwellings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904 shall comply with Table R302.1(2).

Fire-resistant rated exterior walls shall extend from the top of the foundation to the underside of the roof sheathing. If the soffit is protected with one hour fire rated construction the fire-resistant rated exterior wall shall be permitted to terminate in line with the level of the soffit protection.

Exceptions:

1. **Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the fire separation distance.**
2. **Walls of individual dwelling units and their accessory structures located on the same lot.**
3. **Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.**
4. **Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).**

~~(E)~~ **(F)** Section R308.4.6 is amended to read as follows:

R308.4.6 Glazing adjacent to stairs and ramps. Glazing where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the plane of the adjacent walking surface of stairways, landings between flights of stairs and ramps shall be considered a hazardous location.

EXCEPTIONS:

1. When a rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965 mm) above the walking surface and the plane of glass is more than 18 inches (457 mm) horizontally from the rail. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot (730 N/m) without contacting the glass and be a minimum of 1½ inches (38 mm) in cross sectional height.
2. Glazing 36 inches (914 mm) or more measured horizontally from the walking surface.

~~(F)~~ **(G)** Section R308.4.7 is amended to read as follows:

R308.4.7 Glazing adjacent to the bottom stair landing. Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 60 inches (1524 mm) above the landing and within a 60 inch (1524 mm) horizontal arc less than 180 degrees the bottom tread shall be considered a hazardous location.

EXCEPTION: The glazing is protected by a guard complying with Section R312 and the plane of glass is more than 18 inches (457 mm) from the guard.

~~(G)~~ Section 310.2.2 is amended to read as follows:

~~_____ R310.2.2 Window opening height.~~

~~_____ Where a window is provided as the emergency escape and rescue opening, it shall have the bottom of the clear opening not more than 44 inches (1118 mm) above the floor, where the bottom of the clear opening is below grade, it shall be provided with a window well in accordance with Section R310.2.3.~~

~~(H) Section R311.7 is amended to read:~~

~~Section R311.7 Stairways. Where required by this code or provided, stairways shall comply with this section.~~

~~Exceptions:~~

- ~~1. Stairways not within or serving a building, porch, or deck.~~
- ~~2. Stairways leading to non-habitable attics.~~
- ~~3. Stairways leading to crawl spaces.~~

~~(H)~~ **(H)** Section R311.7.5 is hereby amended by deleting the word "carpets":

R311.7.5 Stair treads and risers. Stair treads and risers shall meet the requirements of this section. For the purposes of this section, the dimensions and dimensioned surfaces shall be exclusive of rugs and runners.

(I) Section R311.7.7 is hereby amended to read:

R311.7.7 Stairway walking surface. The walking surface of treads and landings of stairways shall be sloped not steeper than 1 unit vertical in 48 units horizontal (2-percent slope).

Exception: Where the surface of a landing is required elsewhere in the code to drain surface water, the walking surface of the landing shall be sloped not steeper than 1 unit vertical in 20 units horizontal (5-percent slope) in the direction of travel.

R311.7.7.1 Landings at grade. Stairway landings located at grade shall be solid and stable.

~~(J) Section R312.2.1 is hereby amended to read as follows:~~

~~—— R312.2.1 Window opening height.~~

~~In dwelling units, where the top bottom of the sill clear opening of an operable window opening is located less than 24 inches (610 mm) above the finished floor and greater than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, the operable window shall comply with one of the following:~~

~~(K) Section R313.1 is hereby amended to read as follows:~~

~~R313.1 Townhouse automatic sprinkler systems. An automatic residential fire sprinkler system shall be installed in all new townhouses. This subsection (l) shall not be effective until such time as the city council adopts a separate ordinance making Section R313.1 effective.~~

~~EXCEPTION 1: An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.~~

~~EXCEPTION 2: An automatic residential fire sprinkler may be required when proposed by the developer and accepted by the building code official and the fire code official as an integral part of an alternative method to gain compliance with the IRC and/or International Fire Code (IFC) as locally amended.~~

~~R313.1.1 Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section P2904 or NFPA 43D.~~

~~(L)~~ Section R313.2 is hereby amended to read as follows:

~~R313.2 One and two-family dwellings automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in one and two family dwellings. This subsection (J) shall not be effective until such time as the city council adopts a separate ordinance making Section R313.2 effective.~~

~~EXCEPTION 1: An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing buildings that are not already provided with an automatic residential sprinkler system.~~

~~EXCEPTION 2: An automatic residential fire sprinkler may be required when proposed by the developer and accepted by the building code official and the fire code official as an integral part of an alternative method to gain compliance with the IRC and/or International Fire Code (IFC) as locally amended.~~

~~(M)~~ **(J)** Section R314.2.2 is amended to read as follows:

R314.2.2 Alterations, repairs and additions. When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

EXCEPTIONS:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition of a porch or deck, are exempt from the requirements of this section.
2. Repairs of plumbing or mechanical systems are exempt from the requirements of this section.

~~(N)~~ Section R314.3 is amended to add item 5 as follows:

~~5. In dwelling units where the ceiling height of a room open to the hallway serving the bedrooms exceeds that of the hallway by 24 inches (610 mm) or more smoke alarms shall be installed in the hallway and in the adjacent room.~~

~~(O)~~ **(K)** Under the Exceptions of Subsection R314.4, Alterations, repairs and additions, the exception numbered 2 is hereby amended to read as follows:

2. Smoke alarms in existing areas shall not be required to be interconnected and hardwired where battery-operated detectors are provided and no electrical work is being performed in the area requiring a detector.

Note: Items P, Q, R, and S remain unchanged except to update the letter to correspond with L, M, N and O to make the lettering consecutive in the section and the amendments listed in numerical order.

...

(P) Amend Table R702.7(2) to allow latex paint to be used as a Class III vapor retarder

(Q) Amend section R807 to read as follows:

R807.1 Attic access. Buildings with ~~combustible ceiling or roof construction~~ attics shall have an attic access opening to attic areas that have a vertical height of 30 inches (762 mm) or greater over an area of not less than 30 square feet (2.8 m²). The vertical height shall be measured from the top of the ceiling framing members to the underside of the roof framing members.

The rough-framed opening shall be not less than 22 inches by 30 inches (559 mm by 762 mm) and shall be located in a hallway or other location with ready access. Where located in a wall, the opening shall be not less than 22 inches wide by 30 inches high (559 mm wide by 762 mm high). Where the access is located in a ceiling, minimum unobstructed headroom in the attic space shall be 30 inches (762 mm) along at least one side at some point above the access measured vertically from the bottom of ceiling framing members. See Section M1305.1.2 for access requirements where mechanical equipment is located in attics.

Note: Items T, U, V, and W remain unchanged except to update the letter to correspond with R, S, T and U to make the lettering consecutive in the section and the amendments listed in numerical order.

(V) Section P2603.5.1 is amended to read as follows:

P2603.5.1 Sewer Depth. Building sewers that connect to private sewage disposal systems shall be not less than 22 inches (559 mm) below finished grade at the point of septic tank connection. Building sewers shall be not less than 18 inches (457 mm) below grade (457 mm).

Note: Items X, Y, Z, AA, BB, CC, DD, and EE remain unchanged except to update the letter to correspond with W, X, Y, Z, AA, BB, CC and DD to make the lettering consecutive in the section and the amendments listed in numerical order.

Chapter 15-07 - International Energy Conservation Code

15-07-010 - Amendments to the International Energy Conservation Code.

The following amendments are hereby made to the ~~2018~~ **2021** International Energy Conservation Code:

...

**TABLE 302.1
Outdoor Design Conditions (Cont'd)**

Winter	Heating 99% dry bulb (degrees)	1
	Cooling 1% dry bulb (degrees)	91 94
Summer	Coincident wet bulb	62
	Design grains (50% RH)	-41
	Daily range (DR)	High (H)
Relative Humidity (winter and summer)		50%

(C) Section C404.5 is hereby deleted.

(D) **Section C503.2.1 is amended to add exception below:**

Exception: Roof replacements that do not replace the existing roof insulation are not required to upgrade the existing roof insulation to current requirements.

~~(D)~~ (E) Section C503.3.1. is hereby deleted.

~~(E)~~ (F) Section C503.3.3 is hereby deleted.

~~(F)~~ (G) Section R402.4.2.1 is amended to add following exception:

EXCEPTION: Multifamily dwelling units will need to be verified to have an air leakage rate not to exceed 5 air changes per hour. Multifamily dwelling units are ones that are built under the IBC as R-2 occupancy.

~~(G)~~ (H) Section R403.3.3 #2 is hereby deleted.

(I) Section R403.5.2 is amended to add the language below:

8. Piping that exceeds 100'.

~~(H)~~ (J) Section R403.5.3 is hereby deleted.

Chapter 15-09 - International Existing Building Code

15-09-010 - Amendments to the International Existing Building Code.

The following amendments are hereby made to the ~~2018~~ **2021** International Existing Building Code:

...

~~(E) Section 505.1 is hereby amended to read as follows:~~

~~Section 505.1 Replacement windows:~~

~~The installation or replacement of glass windows shall be as required for new installations.~~

Chapter 15-10 - International Mechanical Code

15-10-010 - Amendments to the International Mechanical Code.

The following amendments are hereby made to the ~~2018~~ **2021** International Mechanical Code:

...

Chapter 15-11 - International Swimming Pool and Spa Code

15-11-010 - Amendments to the International Swimming Pool and Spa Code.

The following amendments are hereby made to the ~~2018~~ **2021** International Swimming Pool and Spa Code:

(A) Chapter 1 is hereby deleted. Refer to 15-03, B.M.C. for administrative requirements.

~~(B) Section 305.1 exception 2 is hereby deleted.~~

~~(C) Add new Section 305.8 as follows:~~

~~Section 305.8 Means of Egress. Outdoor public pools provided with barriers shall have means of egress as required by Chapter 10 of the International Building Code.~~

(B) Section 305.1 is amended to read as follows:

305.1 General. The provisions of this section shall apply to the design of barriers restricting entry into areas having pools and spas. ~~Where s~~ Spas and hot tubs equipped with a lockable safety cover complying with ASTM F1346 , ~~and swimming pools are equipped with a powered safety cover that complies with ASTM F1346, the areas where these spas, hot tubs, or pools are located shall not be required to comply with Sections 305.2 and through 305.7.~~

(C) Section 305.1.1 is hereby deleted.

(D) Section 305.2.4 is amended to add the language below:

8. Mesh is required to be installed on the exterior side of barrier from the pool side.

Chapter 15-16 - International Fire Code

15-16-010 - Amendments to the International Fire Code.

The following amendments are hereby made to the ~~2018~~ **2021** International Fire Code which shall be referred to in this chapter 15-16 as the IFC:

...

(D) Subsection ~~405.4.4~~ **105.6.1**, Submittals, of the IFC is amended to read as follows:

~~405.4.4~~ **105.6.1** Submittals. Construction documents shall be submitted in one or more sets and in such form and detail as required by the fire code official. The construction documents shall be prepared by a registered design professional when said documents are submitted in support of an application for a construction permit required by Sections ~~405.7.1, 405.7.4, 405.7.7, 405.7.8, 405.7.10, 405.7.11, 405.7.13, 405.7.20, 405.7.21, 405.7.24, or 405.7.26~~ **105.6.1, 105.6.2, 105.6.4, 105.6.5, 105.6.6, 105.6.7, 105.6.9, 105.6.10, 105.6.12, 105.6.19, 105.6.20, 105.6.21, 105.6.23, or 105.6.25**. When requested, qualification statements shall be submitted to the fire code official for the registered design professional to demonstrate compliance with the professional qualifications defined in Section 202.

(E) A new Subsection **106.2.5** ~~405.4.7~~ of the IFC is added to read as follows:

106.2.5 ~~405.4.7~~ Fire protection and life safety analysis. . . .

(F) Subsection ~~405.6.27(1)~~ **105.5.29(1)** is amended to read as follows: . . .

(G) Subsection ~~405.6.47~~ **105.5.49** Temporary membrane structures and tents, is amended to read as follows:

~~405.6.47~~ **105.5.49** Temporary membrane structures and tents. . . .

(H) Subsection ~~405.7.6~~ **105.6.6**, Fire alarm and detection systems and related equipment, of the IFC is amended to read as follows:

~~405.7.6~~ **105.6.6** Fire alarm and detection systems and related equipment. . . .

(I) A new Subsection ~~405.7.26~~ **105.6.25**, Explosion control, of the IFC is added to read as follows:

~~405.7.26~~ **105.6.25** Explosion control. A construction permit is required to install or modify explosion control provided as required in Section 911.

(J) Subsection ~~405.7.12~~ **105.6.15** LP-Gas is amended to read as follows:

~~405.7.12~~ **105.6.15** LP-Gas. . . .

(K) Subsection ~~405.7.24~~ **105.6.20** Solar photovoltaic power systems . . .

(L) Subsection ~~405.7.25~~ **105.6.24** Temporary membrane structures and tents, is amended to read as follows:

~~405.7.25~~ **105.6.24** Temporary membrane structures and tents. . . .

(M) Subsections ~~406.2, 406.3 and 406.5~~ **107.2, 107.4, and 107.6** are amended by substituting the words “applicable governing authority” with “North Metro Fire Rescue District”.

(N) Subsection ~~407.2.4~~ **108.2.1**, Inspection requests, of the IFC is amended by adding the following sentence:

(O) Section ~~409-111~~, of the IFC, is deleted in its entirety and replaced with language to read as follows:

SECTION ~~409-111~~
APPEALS

~~409.4~~ **111.1** Appeals procedure - general. . . .

~~409.2~~ **111.2** Appeals procedure - administrative decisions. . . .

(P) Subsection ~~440.4~~ **112.4**, Violation penalties, of the IFC is amended to read as follows:

~~440.4~~ **112.4** Violation penalties. . . .

(Q) Subsection ~~442.4~~ **113.4**, Failure to comply of the IFC is amended to read as follows:

~~442.4~~ **113.4** Failure to comply. . . .

(S) Section 202, General definitions, Occupancy Classification, of the IFC is amended by defining "Institutional Group I-1, ~~Six~~ **Nine** to 16 persons receiving custodial care” to read as follows:

(T) Section 202, General definitions, Occupancy Classification, of the IFC is amended by defining "Institutional Group I-1, **Five Eight** or fewer persons receiving custodial care” to read as follows:

(U) Section 202, General definitions, Occupancy Classification, of the IFC is amended by defining "Institutional Group I-4, day care facilities, ~~Five-Eight~~ **Five** or fewer occupants receiving care in a dwelling unit” to read as follows:

~~(EE)~~ A new Section ~~603.10~~ **605.10**, Carbon monoxide alarm and detector maintenance, inspection, and testing, of the IFC is added to read as follows:

~~603.10~~ **605.10** Carbon monoxide alarm and detector maintenance, inspection, and testing. . . .

(KK) **Subsection 903.3.1.2.1, Balconies and decks, is amended to read as follows:**

903.3.1.2.1 Balconies and decks. Sprinkler protection shall be provided for exterior balconies, decks, and ground floor patios of dwelling units and sleeping units including all closets and usable storage spaces located thereto and accessed therefrom where either of the following conditions exist:

Rest of code language stays the same

~~(KK)~~(LL) Subsection 905.2, Installation standard, of the IFC is amended to read as follows: . .

~~(LL)~~ (MM) Subsection 907.2.4.2, Signs, of the IFC is amended to read as follows: . . .

~~(MM)~~ **(NN)** Subsection 907.5.2.1.1, . . .

~~(NN)~~ **(OO)** Subsection 912.1, Installation, of the IFC is amended to read as follows: . . .

~~(OO)~~ **(PP)** Subsection ~~1010.1.9.43(2)(2.1)~~ **1010.2.4(3)(3.1)** is amended to read as follows:

~~2.1~~ **3.1** The locking device is

Note: Items PP through YY remain unchanged except to update the letter to correspond to make the lettering consecutive in the section and the amendments listed in numerical order.

~~(ZZ)~~ **(AAA)** The NFPA standards in Chapter 80, Referenced Standards, of the IFC are retained except as modified in the following table:

Note: The existing NFPA Standards chart included within B.M.C. 15-16-010(ZZ) is deleted in its entirety and replaced with the following:

NFPA Standards

<i>Standard reference number:</i>	<i>Change to:</i>
02-19	02-20
11-16	11-21
12-18	12-22
12A-18	12A-22
13-19	13-22
13D-19	13D-22
13R-19	13R-22
15-17	15-22
17-20	17-21
17A-20	17A-21
20-19	20-22
24-19	24-22

32-16	32-21
33-18	33-21
34-18	34-21
35-16	35-21
40-19	40-22
55-19	55-20
68-13	68- 18
72-19	72-22
76-16	76-20
77-14	77-19
80-19	80-22
92-18	92-21
96-20	96-21
105-19	105-22
110-19	110-22
111-19	111-22
253-15	253-19
170-18	170-21
204-18	204-21
232-17	232-22
241-19	241-22

318-18	318-22
385-17	385-22
400-19	400-22
407-17	407-22
409-16	407-22
484-19	484-22
704-17	704-22
780-17	780-20
1123-18	1123-22
1124-17	1124-22
1125-17	1125-22
1142-17	1142-22
2001-18	2001-22

Chapter 15-22 - International Fuel Gas Code

15-22-010 - Amendments to the International Fuel Gas Code.

The following amendments are hereby made to the ~~2018~~ **2021** International Fuel Gas Code:

...

Chapter 15-24 - International Plumbing Code

15-24-010 - Amendments to the International Plumbing Code.

The following amendments are hereby made to the ~~2018~~ **2021** International Plumbing Code:

- (A) Chapter 1 is hereby deleted. Refer to chapter 15-03, B.M.C. for administrative requirements.
- (B) Subsection 305.6.1, Sewer depth, is amended by inserting "~~36 inches~~ **18 inches (457 mm)** for the [NUMBER].

...

Section 16. This ordinance shall be effective April 15, 2023.

INTRODUCED for first reading on February 7, 2023, and ordered published in full.

INTRODUCED A SECOND TIME and approved on March 7, 2023, and further ordered published.

THE CITY AND COUNTY OF BROOMFIELD,
COLORADO

Mayor

ATTEST:

Office of the City and County Clerk

APPROVED AS TO FORM:

NCR

City and County Attorney

First Publication:

Second Publication: