



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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Email: Brian.lukus@denvergov.org **Representing (organization or self):** Organization

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 |
| IBC | International Building Code | IRC | International Residential Code |
| IECC | International Energy Conservation Code | IFGC | International Fuel Gas Code |
| IEBC | International Existing Building Code | IMC | International Mechanical Code |
| IFC | International Fire Code | DGC | Denver Green Code |

AMENDMENT PROPOSAL

Please provide all the following items in your amendment proposal.

Code Sections/Tables/Figures Proposed for Revision:

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

Proposal:

Instructions: Show the proposal using ~~strikeout~~, underline format.

Place "X" next to choice that best defines your proposal: X Revision X New Text ___ Delete/Substitute ___ Deletion

5307.5 Carbon Dioxide (CO2) Gas Enrichment Systems Using a Natural Gas Burner in Plant Growing (Husbandry)

Applications. Natural gas burners that are utilized to generate CO2 in plant growing applications shall comply with Sections 5307.5.1 through 5307.5.6 ~~5307.5.5. A mechanical exhaust system shall be provided as required by the *International Mechanical Code*.~~

5307.5.3.2 Carbon monoxide (CO) gas detection.

1. CO gas detection shall be provided to monitor products of combustion continuously.
2. Detectors shall be:
 - a. Listed or *approved* devices.
 - b. Permanently mounted.
 - c. Installed per manufacturer’s recommendations and directions.
 - d. Directly connected to building electrical supply and fire alarm systems and protected from accidental disconnection or damage.
3. CO detection shall be at set at 35 PPM and upon activation shall initiate the following:
 - Close the automatic valve to each burner.
 - Activate the mechanical ~~exhaust~~ ventilation system.
4. All CO2 burner systems shall shut down in the event of a loss of electrical power to the CO detector.
5. A minimum of one portable CO meter shall be in use during business hours.

5307.5.4.2.1 Acceptance testing. Appliances and equipment shall not be placed in operation until after the detectors, notification appliances automatic gas control valves and mechanical ~~exhaust~~ ventilation system have been tested by a qualified service company. Acceptance testing is required to be witnessed by *fire code officials*.

5307.5.4.2.5 Annual testing. All detectors, alarms, gas control valves and mechanical ~~exhaust~~ ventilation systems shall be tested annually by a qualified service company.

5307.5.6 Mechanical Ventilation. A mechanical ventilation system shall be provided in accordance with the *International Mechanical Code* that complies with all of the following:

1. Mechanical ventilation system shall be provided in enriched spaces capable of producing a ventilation airflow rate of 0.75 cfm per square foot (0.0038 m³/s • m²) of floor area.
2. The ventilation system shall discharge to the outdoors.
3. When active, the ventilation system shall operate at a negative pressure to adjacent indoor spaces.

Supporting Information (Required):

- Purpose: What does your proposal achieve?

This change clarifies and aligns with IMC terminology for ventilation systems; instead of exhaust systems. Also, it is revised to clarify requirements for exhaust rates which are not specified in the IMC for these systems. References to “exhaust” have been updated in associated sections to “ventilation”

5307.5.3.2 section 4, is updated to include “detector” which is missing from the code.

- Reason: Why is your proposal necessary?

As currently written in the DFC, because the IMC has no direct code requirement for CO₂ enrichment ventilation systems, the system would not be required. Additionally, there is no requirements for ventilation rates specified in the DFC or IMC. There is a known carbon monoxide hazard with these systems as they are unvented fuel fired appliances. The DFC IMC reference was never intended to ignore this hazard, this revision clarifies code language.

- Substantiation: Why is your proposal valid? (i.e. technical justification)

The currently DFC language is ambiguous because the IMC has no direct requirement for CO₂ enrichment systems using CO₂ burners. Ventilation systems for CO₂ burners have been regulated in the past similarly to those in enclosed parking garages. This concept is maintained and just clarified in revised language.

Bibliography and Access to Materials (as needed when substantiating material is associated with the amendment proposal):

Other Regulations Proposed to be Affected

***For proposals to delete content from the 2019 Denver Green Code in conjunction with adding it to other mandatory Denver codes and/or regulations, only.**

Please identify which other mandatory codes or regulations are suggested to be updated (if any) to accept relocated content.

Referenced Standards:

List any new referenced standards that are proposed to be referenced in the code.

Impact:

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

| | | | |
|-----------------------|-----------------------------------|-----------------------------------|---|
| Cost of construction: | <input type="checkbox"/> Increase | <input type="checkbox"/> Decrease | <input checked="" type="checkbox"/> No Impact |
| Cost of design: | <input type="checkbox"/> Increase | <input type="checkbox"/> Decrease | <input checked="" type="checkbox"/> No Impact |
| Restrictiveness: | <input type="checkbox"/> Increase | <input type="checkbox"/> Decrease | <input checked="" type="checkbox"/> 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.

