



DENVER
THE MILE HIGH CITY

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

2021 CODE DEVELOPMENT CYCLE

1) **Name:** Kristen Salinas **Date:** 9/1/2021
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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
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.

<p><u>Code Sections/Tables/Figures Proposed for Revision:</u> Instructions: If the proposal is for a new section, indicate (new), otherwise enter applicable code section. Chapter 5: Passive Solar on Individual Lots (Residential Elective)</p>
<p><u>Proposal:</u> Instructions: Show the proposal using strikeout, <u>underline</u> format. Place an "X" next to the choice that best defines your proposal: ___ Revision ___X_ New Text ___ Delete/Substitute ___ Deletion</p> <p><u>Passive Solar Design.</u> Site selected for building shall have an unobstructed "view" of the sun within 30 degrees of the true-south-facing orientation with consideration of small trees that will continue to grow and known future zoning permitted developments. Building design shall include specified requirements in items (a) through (d)</p> <p><u>(a) Properly oriented windows.</u> Increase south-facing glazing to between 12 and 20% of the house's conditioned floor area.</p> <p><u>(b) Window shading.</u> Windows on south-facing façade shall utilize one of the following window treatments: operable window coverings, insulated cellular shades, exterior shutters or shades, awning(s), or exterior solar window screens.</p> <p><u>(c) Thermal mass.</u> Size thermal mass in rooms where south-facing windows are located. Each square foot of south-facing direct-gain glass shall have 6 ft² of exposed mass surface added within the direct-gain space by utilizing a 4" thickness of one of the following without coverings: brick, concrete masonry walls, concrete floors, phase change material</p> <p><u>(d) Ventilation.</u> Rooms where a south-facing window is located shall utilize one of the following: operable vertical fenestration with either operable skylights or roof vents for natural ventilation that accounts for 15% of the total square footage of south facing glazing or a thermostat-controlled fan set at 76°F.</p>
<p><u>Supporting Information:</u> All proposals must include a written explanation and justification as to how they address physical, environmental, and/or customary characteristics that are specific to the City and County of Denver. The following questions must be answered for a proposal to be considered.</p> <ul style="list-style-type: none"> - Purpose: What does your proposal achieve? <p>This proposal outlines what a passive solar design needs to consider to maximize energy savings.</p> <ul style="list-style-type: none"> - Reason: Why is your proposal necessary?

An important aspect of good passive solar design is that it takes advantage of the opportunities at the specific site to reduce energy use passively.

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

The vast majority of new houses still ignore a lot of energy saving opportunities available in the sunlight falling on the house, in the landscaping, breezes and other natural elements of the site, and opportunities in the structure and materials of the house itself which could be used to collect and use free energy. Passive solar design takes advantage of a building's site, climate, and materials to minimize energy use. A well-designed passive solar home first reduces heating and cooling loads through energy-efficiency strategies and then meets those reduced loads in whole or part with solar energy.

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

Window shades: <https://www.energy.gov/energysaver/energy-efficient-window-attachments>

Passive Solar Design: <https://www.energy.gov/energysaver/passive-solar-home-design>

NREL Passive Solar strategies: <https://www.nrel.gov/docs/legosti/old/17141.pdf>

Heat Storage Properties of Materials			
Material	Specific Heat (Btu/lb °F)	Density (lb/ft ³)	Heat Capacity (Btu/in-sf-°F)
Poured Concrete	0.16-0.20	120 - 150	2.0 - 2.5
Clay Masonry	0.19-0.21		
Molded Brick		120 - 130	2.0 - 2.2
Extruded Brick		125 - 135	2.1 - 2.3
Pavers		130 - 135	2.2 - 2.3
Concrete Masonry	0.19-0.22		
Concrete Masonry Units		80 - 140	1.3 - 2.3
Brick		115 - 140	1.9 - 2.3
Pavers		130 - 150	2.2 - 2.5
Gypsum Wallboard	0.26	50	1.1
Water		62.4	5.2

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: ___ Increase ___ Decrease X No Impact
 Cost of design: ___ Increase ___ Decrease X No Impact
 Restrictiveness: X Increase ___ Decrease ___ No Impact