

Chapter 23.60 LOCAL AMENDMENTS TO THE INTERNATIONAL ENERGY CONSERVATION CODE-2018 EDITION

23.60.100 Local Amendments to the International Energy Conservation Code-2018 Edition.

The amendments to the 2018 edition of the International Energy Conservation Code (IECC) are listed hereafter by section. The edition adopted is as listed in AMC 23.05.010. The structure of amendments is as explained in AMC 23.05.015. The last digits of the number (after the title and chapter digits) are the sections of the International Energy Conservation Code to which the amendments refer.

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23.60.C102.2—23.60.C109 C110 Delete sections.

Delete sections C102.2 through C109C110. Refer to the Anchorage Administrative Code.

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23.60.C303.1.4 Insulation product rating.

Add the following exception:

Exception: A mean testing temperature of 40°F is acceptable for demonstrating compliance with this code.

23.60.C401.3 Thermal envelope certificate.

Add the following to the end of the section:

Approved parties include energy rater or builder.

23.60. Table C402.1.23 Opaque Building Thermal Envelope Insulation Component MinimumAssembly Maximum Requirements, R-ValueU-factor Method.

Replace TABLE C402.1.3-2 with the following:

TABLE C402.1.2 OPAQUE THERMAL ENVELOPE ASSEMBLY REQUIREMENTS, U-FACTOR METHOD CLIMATE ZONE 7, All other and Group R		
Component	Approvable Maximum Factors	Enhanced Maximum Factors
Roofs		
Insulation entirely above roof deck	U-0.032	U-0.028
Metal buildings	U-0.035	U-0.029

<u>Attic and other</u>	<u>U-0.021</u>	<u>U-0.017</u>
<u>Walls, above grade</u>		
<u>Mass^c</u>	<u>U-0.071</u>	<u>N/A</u>
<u>Metal Building</u>	<u>U-0.052</u>	<u>U-0.044</u>
<u>Metal Framed</u>	<u>U-0.064</u>	<u>U-0.049</u>
<u>Wood framed and other^c</u>	<u>U-0.064</u>	<u>U-0.051</u>
<u>Insulated Metal Panels</u>	<u>U-0.050</u>	<u>N/A</u>
<u>Walls, below grade</u>		
<u>Below-grade wall^a</u>	<u>C-0.119</u>	<u>C-0.063</u>
<u>Floors</u>		
<u>Mass^b</u>	<u>U-0.057</u>	<u>U-0.042</u>
<u>Joist/Framing</u>	<u>U-0.033</u>	<u>U-0.027</u>
<u>Slab-on-grade floors</u>		
<u>Unheated slabs</u>	<u>F-0.52</u>	<u>F-0.51</u>
<u>Heated slabs^a</u>	<u>F-0.62</u>	<u>F-0.602</u>
<u>Opaque doors</u>		
<u>Nonswinging door</u>	<u>U-0.31</u>	<u>N/A</u>
<u>Swinging door^d</u>	<u>U-0.37</u>	<u>N/A</u>
<u>Garage door with less than 14% glazing^e</u>	<u>U-0.31</u>	<u>N/A</u>

a. Where heated slabs are below grade, below-grade walls shall comply with the U-factor requirements of above-grade mass walls.

b. "Mass floors" shall be in accordance with Section C402.1.3.4.

c. "Mass walls" shall be in accordance with Section C402.1.3.4.

d. Swinging door U-factors shall be determined in accordance with NFRC-100.

e. Garage doors having a single row of fenestration shall have an assembly U-factor less than or equal to 0.36, provided that the fenestration area is not less than 14 percent and not more than 25 percent of the total door area.

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TABLE C402.1.3 OPAQUE THERMAL ENVELOPE INSULATION COMPONENT MINIMUM REQUIREMENTS, R-VALUE METHOD* CLIMATE ZONE 7 All Other and Group R	
Roofs—Insulation entirely above deck	R-30_{ci}
Roofs—Metal Buildings^b	R-13+ R-19

Roofs—Attic and Other	R-38
Walls—Above-Grade—Mass^b	R-15.2ci
Walls—Above-Grade—Metal Building	R-19+ R-5.6ci
Walls—Above-Grade—Metal Framed	R-13+ R-7.5ci
Walls—Above-Grade—Wood framed and other	R-13+ R-7.5ci or R-21
Walls—Above-Grade—Insulated Metal Wall Panels	R-20
Walls—Below-Grade^d	R-8ci
Floors—Mass^e	R-15ci
Floors—Joist/Framing—Note: For framing cavities 12 inches or less in depth the entire cavity shall be filled with insulation.	R-30 wood framing R-38 metal framing
Floors—Slab-on-grade, unheated	R-8, extending 36" below
Floors—Slab-on-grade, heated	R-10, extending 36" below
Opaque Doors—Side-hinge swingingⁱ	R-2

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- a. ~~Assembly descriptions can be found in ANSI/ASHRAE/IESNA Appendix A.~~
- b. ~~Where using R-value compliance method, a thermal spacer block having a minimum R-value of 5 shall be provided; otherwise use the U-factor compliance method in Table C402.1.4.~~
- c. ~~Not used.~~
- d. ~~Where heated slabs are below grade, below-grade walls shall comply with the exterior insulation requirements for heated slabs.~~
- e. ~~"Mass floors" shall be in accordance with Section C402.2.3.~~
- f. ~~Not used.~~
- g. ~~"Mass walls" shall be in accordance with Section C402.2.2.~~
- h. ~~Not used.~~
- i. ~~Not applicable to garage doors. See Table C402.1.4.~~

23.60.C402.1.2.1 Methods of determining U-, C-, and F-factors.

Replace reference to "Table C402.1.4" with "Table C402.1.2."

23.60. Table C402.1.4-3 Opaque Building Thermal Envelope Assembly Maximum Requirements Insulation Component Minimum Requirements, U-factor value Method.

Replace TABLE C402.1.4-3 with the following:

TABLE C402.1.3 OPAQUE BUILDING THERMAL ENVELOPE INSULATION COMPONENT MINIMUM REQUIREMENTS, R-VALUE METHOD ^a CLIMATE ZONE 7, All other and Group R		
Component	R-Value (Minimum)	R-Value (Enhanced)
Roofs		
Insulation entirely above deck	30ci	35ci
Metal Buildings ^b	19+11LS	30+11LS
Attic and Other	49	60
Walls, above grade		
Mass ^c	15.2ci	N/A
Metal Building	13+13ci	13+17ci
Metal Framed	13+7.5ci or 20+6.3ci	13+12.5ci or 20+11ci
Wood framed and other	13+3.8ci or 20	13+7.5ci or 20+3.8ci
Insulated Metal Panels	20	N/A
Walls, below grade		
Below-grade walls ^c	7.5ci	15ci
Floors		
Mass ^d	14.6ci	20.9ci
Joist/Framing ^e	30 (wood) 38 (steel)	38 (wood) 38+6ci (steel)
Slab-on-grade floors		
Unheated slabs	15, 24 inches	20, 24 inches
Heated slabs ^f	15, 24 inches & 5 full slab	20, 48 inches & 5 full slab

ci = continuous insulation, LS = liner system

a. Assembly descriptions can be found in ANSI/ASHRAE/IES 90.1 Appendix A.

b. Where using R-value compliance method, a thermal spacer block shall be provided (minimum R-5), otherwise use the U-factor compliance method.

c. Where heated slabs are below grade, below-grade walls shall comply with the R-value requirements for above-grade mass walls.

d. "Mass floors" shall be in accordance with Section C402.1.3.4.

e. "Mass walls" shall be in accordance with Section C402.1.3.4.

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f. The first value is for perimeter insulation and the second value is for full, under-slab insulation. Perimeter insulation and full-slab insulation components shall be installed in accordance with Section C402.2.4.

g. For joist/framing floor cavities 12 inches or less in depth, the entire cavity shall be filled with insulation.

TABLE C402.1.4 OPAQUE THERMAL ENVELOPE ASSEMBLY MAXIMUM REQUIREMENTS, U-FACTOR METHOD^{a,b} Climate Zone 7 All Other and Group R		
Component	Maximum Allowable Factor	ANSI/ASHRAE/IESNA 90.1 APPENDIX A Section Reference
Roofs—Insulation entirely above deck	U-0.032	A2.2
Roofs—Metal Buildings (W/R 5 Thermal Blocks)	U-0.049	A2.3
Roofs—Attic and Other	U-0.027	A2.4, A2.5
Walls Above Grade—Mass^b	U-0.071	A3.1
Walls Above Grade—Metal Building	U-0.057	A3.2
Walls Above Grade—Metal Framed	U-0.064	A3.3
Walls Above Grade—Wood framed and other^c	U-0.051	A3.4
Walls above Grade—Insulated Metal Panels	U-0.050	—
Below-grade wall^c	C-0.119	A4.2
Floors—Mass^d	U-0.064	A5.2
Floors—Steel Joist/Framing	U-0.033	A5.3
Floors—Wood Joist/Framing	U-0.033	A5.4
Slab-on-grade Floors—Unheated	F-0.52	A6.3
Slab-on-grade Floors—Heated^e	F-0.84	A6.3

Opaque side hinge swinging door	U-0.37	A7
Opaque garage door with less than 14% glazing	U-0.31	A7

- a. Where assembly U-factors, C-factors and F-factors are established in ANSI/ASHRAE/IESNA 90.1 Appendix A, such opaque assemblies shall be a compliance alternative where those values meet the criteria of this table, and provided the construction, excluding the cladding system on walls, complies with the appropriate construction details from ANSI/ASHRAE/IESNA 90.1 Appendix A.
- b. Where U-factors have been established by testing in accordance with ASTM C1363, such opaque assemblies shall be a compliance alternative where those values meet the criteria of this table. The R-value of continuous insulation shall be permitted to be added to or subtracted from the original tested design.
- c. Where heated slabs are below grade, below-grade walls shall comply with the U-factor requirements of above-grade mass walls.
- d. "Mass floors" shall be in accordance with Section C402.2.3.
- e. Not used.
- f. The first value is for perimeter insulation and the second value is for full slab insulation.
- g. "Mass walls" shall be in accordance with Section C402.2.2.

23.60. Table C402.4-5 Building Thermal Envelope fenestration Maximum U-Factor and SHGC Requirements.

Replace TABLE C402.4-5 with the following:

TABLE C402.4 BUILDING THERMAL ENVELOPE FENESTRATION MAXIMUM U-FACTOR AND SHGC REQUIREMENTS CLIMATE ZONE 7		
Item	Approvable Maximum	Enhanced Maximum
Vertical Fenestration		
Fixed fenestration - includes curtain wall, storefront, picture windows, and other fixed windows	U-0.34	U-0.28
Operable fenestration - includes operable fenestration products other than "entrance doors"	U-0.45	U-0.36
Entrance doors	U-0.63	N/A
SHGC - PF < 0.2	0.36	0.4
SHGC - 0.2 ≤ PF < 0.5	0.43	0.48
SHGC - PF ≥ 0.5	0.58	0.64
Skylights		
U-factor	U-0.5	U-0.44
SHGC	NR	N/A

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TABLE C402.4 BUILDING ENVELOPE FENESTRATION MAXIMUM U-FACTOR AND SHGC REQUIREMENTS CLIMATE ZONE 7	
U-factor—Vertical fenestration, framing materials other than metal with or without metal reinforcement or cladding	0.35
U-factor—Vertical fenestration, metal framing with or without thermal break—Curtain wall/storefront	0.40
U-factor—Vertical fenestration, metal framing with or without thermal break—Entrance Doors	0.80
U-factor—Vertical fenestration, metal framing with or without thermal break—All other—including operable windows, fixed windows and non-entrance doors	0.45
SHGC—Vertical fenestration, oriented more than 45 degrees from true north, PF<25	0.45
SHGC—Vertical fenestration—PF≥0.25	No Requirement
U-factor—Skylights—Glass or plastic	0.60
SHGC—Skylights—Glass or plastic	No Requirement

23.60.C402.2.1 Roof-~~ceiling construction assembly.~~

Add the following sentence:

When eave vents are installed, baffling of the vent openings shall be provided to deflect the incoming air above the surface of the insulation.

Add the following exception:

4. ~~Continuously insulated tapered roof assemblies with an average R-value of not less than that specified in Table C402.2 and having not less than R-12.5 at each roof drain location.~~

23.60.C402.2.4 Slabs-on-grade perimeter insulation.

Revise the exception to read as follows:

Exception: Where the slab-on-grade floor is greater than 36 inches below the finished exterior grade and the below-grade wall is insulated in accordance with section C402.2.5, perimeter insulation is not required.

~~23.60.C402.2.5~~ Below-grade walls.

Amend section C402.2.5 by adding the following sentence:

In new construction, the minimum required R-value of insulating material shall be installed on the exterior side of the wall.

~~23.60.C403.3.1~~ Equipment and system sizing (Mandatory).

Amend section C403.3.1 by adding exception number 3 as follows:

3. ~~Single unit heating systems with less than 25 percent excess capacity.~~

23.60.C403.4.1.4.5 Heated or cooled vestibules (Mandatory).

Amend section C403.4.1.4 to read as follows:

Vestibule heating systems shall be controlled by a thermostat located in the vestibule.

~~23.60.C403.4.2.1~~ Thermostatic setback (Mandatory).

~~Delete section C403.4.2.1.~~

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23.60.C403.4.2.3 Automatic start (Mandatory)Optimum start and stop.

~~Delete section C403.4.2.3.~~ Add to the end of the exception after "sleeping units" the following:

"...or where systems are not controlled by Direct Digital Control..."

23.60.C403.4.4 Part load controls.

Amend section C403.4.4 by deleting "and cooling demand" from Item No. 1, and ~~revising-add~~ exception #4item 5 to read as follows:

45. Hydronic heating systems serving domestic hot water generation equipment or other equipment that requires a consistent supply temperature or flow may override temperature setback and/or flow controls in this section.

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~~23.60.C403.5 Economizers (Prescriptive).~~

Amend the first sentence in item No. 2 to read as follows:

2. ~~Individual fan systems with a cooling capacity greater than or equal to 120,000 Btu/h in buildings having other than a Group R occupancy.~~

~~23.60.C403.5.4.1 Design capacity.~~

Amend section C403.5.4.1 by deleting "indirect evaporation and".

~~23.60.C403.7.2 Enclosed parking garage ventilation controls (Mandatory).~~

In the last sentence, replace "cause the exhaust fans to operate continuously at design airflow" with "trigger audible, visible or automation system alarm".

~~23.60.C403.7.4.2 Energy recovery ventilation systems~~Spaces other than nontransient dwelling units (MandatoryEnergy recovery systems).

Revise the second sentence to read as follows:

~~The energy recovery system shall be configured to provide a change in the enthalpy or sensible heat of the outdoor air supply of not less than 50 percent of the difference between the outdoor air and return air enthalpies or sensible heats.~~

Amend the exception by revising condition Number 8 to read as follows:

8. For each system where the largest source of air exiting the building at a single location at the building exterior is less than 75 percent of the design outdoor airflow rate.

Amend the exception by adding condition number 12 as follows:

12. ~~Where the system does not operate continuously and is controlled only to operate under a safety operation such as carbon monoxide exhaust systems in garages.~~

Amend the exception by adding condition number 13 as follows:

13. ~~Where it is demonstrated that simple economic payback is greater than 20 years. Market value equipment, construction and utility costs at the time of design shall be used to determine economic payback.~~

~~23.60.C403.7.7 Shutoff dampers (Mandatory).~~

Amend section C403.2.7.7 by adding exception number 4Add additional exception to end of section as follows:

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~~Exception 4. — Motorized dampers. Dampers, nonmotorized or motorized,~~ shall not be required for exhaust systems where grease, lint, and similar particulates may accumulate on the damper and create a fire hazard.

~~23.60.C403.8.1 Allowable fan horsepower (Mandatory).~~

~~Amend section C403.8.1 by replacing 5 horsepower with 10 horsepower.~~

~~23.60.C403.8.3 Fan efficiency (Mandatory).~~

~~Amend section C403.8.3, Exception #1, by replacing 5 horsepower with 10 horsepower.~~

~~23.60.C403.11.2.3 High-pressure duct systems (Mandatory).~~

~~Amend section C403.11.2.3 by deleting the last sentence stating "Documentation shall be furnished by the designer demonstrating..."~~

~~23.60.C403.11.3 Piping insulation (Mandatory).~~

~~Amend exception #5 to read as follows:~~

~~5. — Strainers, valves, unions and system components other than piping.~~

Add exception #~~item 7-8~~ as follows:

- ~~7-8.~~ Piping within baseboard radiation assemblies serving the zone requiring conditioning and piping that is intended to serve as a terminal heating device.

~~23.60.C404.4 Insulation of piping.~~

~~Amend exception #2 to read as follows:~~

~~2. — Strainers, valves, unions and system components other than piping.~~

~~23.60.C404.5 Heated water supply piping.~~

~~Delete section C404.5.~~

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23.60.C404.6.1 Circulation systems.

Add the following exception:

Exception: Circulation pumps may be controlled by ~~manual control or~~ time clocks.

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~~23.60.C404.7 Demand circulation controls.~~

~~Delete section C404.7.~~

23.60.C405.1 General ~~(Mandatory).~~

Amend the second paragraph to read as follows:

Compliance with section C405 may be achieved by one of the following:

1. Compliance with the interior lighting power requirements specified in Section C405.3. Compliance with Section C405.2 and Sections C405.4 through C405.9-16 is not required.
2. Compliance with lighting controls specified in Section C405.2 (as amended) and compliance with the interior lighting power requirements specified in Section C405.3 where the total connected interior lighting power is no greater than 125% of the interior lighting power allowance. Compliance with Sections C405.4 through C405.9-16 is not required.

23.60.C405.2.2.2 Light-reduction controls.

Amend section C405.2.2.2 by revising the exception as follows:

Exception: Light reduction controls are not required in:

- a) Daylight zones with daylight responsive controls complying with Section C405.2.3.
- b) Spaces that have only one luminaire with a rated power of less than 100 watts.
- c) Spaces that use less than 0.6 watts per square foot.
- d) Corridors, lobbies, restrooms and similar common spaces.
- e) Equipment rooms, storerooms and similar normally unoccupied spaces.
- f) Areas where HID lighting is used as the primary light source.

23.60.C405.2.3-4 Daylight-responsive controls.

Unless using daylight-responsive controls to comply with other provisions in this code, compliance with ~~Section C405.2.3~~ this section is optional.

23.60.C405.2.4-5 Specific application controls.

Compliance with this section is ~~not required~~optional.

23.60.C405.2.6-7 Exterior lighting controls.

Revise the first sentence to read as follows:

Exterior lighting systems shall be provided with controls that comply with Section C405.2.~~67~~1 or Section C405.2.~~67~~4.

Delete the second sentence.

23.60.C405.2.9 Interior parking area lighting controls.

In the second sentence, change the word "shall" to "may."

23.60.C405.2.10 Sleeping unit and dwelling unit lighting and switched receptacle controls.

Compliance with this section is optional.

23.60.C405.15 Renewable energy systems.

Delete section in its entirety.

23.60.C406 Additional Efficiency-~~Package Options~~, Renewable and Load Management Requirements.

Delete section C406.

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23.60.C408.2 Mechanical systems and service water-heating systems commissioning and completion requirements.

Revise exception #1 to read as follows:

- 1. ~~Mechanical systems serving buildings smaller than 20,000 square feet are exempt from the commissioning requirements in this section. These exempt systems shall be tested to ensure that control elements are calibrated, adjusted and in proper working condition.~~

In exception item 2, remove the words “within dwelling units or sleeping units.”

In exception item 2.2, replace “in the dwelling” with “in a dwelling unit.”

23.60.C503.1 General (Alterations).

Rewrite the exception as follows:

Exception: The following alterations shall not be required to comply with the requirements for new construction provided that the energy use of the building is not increased:

- 1. Storm windows installed over existing fenestration.
- 2. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation.
- 3. Construction where the existing roof, wall or floor cavity is not exposed.
- 4. Roof recover.
- 5. Roof replacement where roof assembly insulation is integral to or located below the structural roof deck.
- 6. Roof replacement where roof assembly insulation is above the roof deck and the insulation cannot be increased without modifying the structure to support full snow load.
- 7. Air barriers shall not be required for roof recover and roof replacement where the alterations or renovations to the building do not include alterations, renovations or repairs to the remainder of the building thermal envelope.
- 8. Surface-applied window film installed on existing single-pane fenestration assemblies to reduce solar heat gain provided that the code does not require the glazing or fenestration assembly to be replaced.
- 9. An existing building undergoing alterations that complies with Section C407.

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23.60.C503.3.6 Replacement or added roof-mounted mechanical equipment (Alterations).

Add an exception as follows:

Exception: Curb height does not need to be increased where utilizing the existing curb and a curb adaptor is not required.

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23.60.C505 Change of use or occupancy.

Throughout this section, replace “results in the same or increased energy use intensity rank” with “results in increased energy use intensity rank.”

23.60.C505.2.1 Building thermal envelope (Change of use or occupancy).

Replace the exception with the following:

Exception: The new occupancy is exempt from Section C402.5.1 if there is not a net increase in fenestration area.

23.60.R101—23.60.R505 Residential Provisions.

Energy conservation provisions for residential buildings regulated by the International Residential Code (IRC) shall comply with IRC Chapter 11, as amended under Chapter 23.85. ~~Energy conservation provisions for residential buildings regulated by the International Building Code (IBC) shall comply with the International Energy Conservation Code.~~

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