CHAPTER 23.60 LOCAL AMENDMENTS TO THE INTERNATIONAL ENERGY CONSERVATION CODE 2012 EDITION

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23.60.100 Local amendments to the International Energy Conservation Code 2012 Edition.

The amendments to the 2012 edition of the International Energy Conservation Code are listed hereafter by section. 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.

23.60.C102-C109 Delete sections.

Delete sections C102 through C109. Refer to the Anchorage Administrative Code.

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.Table C402.1.2 Opaque Thermal Envelope Assembly Requirements

Replace TABLE C402.1.2 with the following:

TABLE C402.1.2 OPAQUE THERMAL ENVELOPE ASSEMBLY REQUIREMENTS[1] 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	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	U-0.051	A3.4
Walls, Below Grade	C-0.119	A4.2
Floors - Mass	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	F-0.84	A6.3

[1] Use of opaque assembly U-factors, C-factors and F-factors from

ANSI/ASHRAE/IESNA 90.1 Appendix A is permitted, provided the construction complies with the applicable construction details from ANSI/ASHRAE/IESNA 90.1 Appendix A.

23.60.Table C402.2 Opaque Thermal Envelope Requirements

Replace TABLE C402.2 with the following:

TABLE C402.2 OPAQUE THERMAL ENVELOPE REQUIREMENTS CLIMATE ZONE 7 All Other and Group R	
Roofs - Insulation entirely above deck	R-30ci
Roofs - Metal Buildings (with R-5 thermal blocks per ASHRAE 90.1 Appendix A)	R-13 + R-19
Roofs - Attic and Other	R-38
Walls - Above Grade - Mass	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 - Below Grade	R-8ci
Floors – Mass	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 - Swinging	U -0.50
Opaque Doors – Roll-up or sliding	U -0.50

23.60.Table C402.3 Building Envelope Requirements: Fenestration

Replace TABLE C402.3 with the following:

TABLE C402.3 BUILDING ENVELOPE REQUIREMENTS: FENESTRATION CLIMATE ZONE 7	
Vertical fenestration - U-factor - Framing materials other than metal with or without metal reinforcement or cladding	0.35
Vertical fenestration - U-factor - Metal Framing with or without thermal break – Curtain wall/storefront	0.40
Vertical fenestration - U-factor - Metal Framing with or without thermal break – Entrance Doors	0.80
Vertical fenestration - U-factor - Metal Framing with or without thermal break – All other - Including operable windows, fixed windows and non-entrance doors	0.45
Vertical fenestration - SHGC - PF<0.25	0.45

Vertical fenestration - SHGC - PF≥0.25	No Requirement
Skylights - U-factor - Glass or plastic	0.60
Skylights - SHGF - Glass or plastic	No Requirement

23.60.C402.2.1 Roof 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.

Replace exception number one with the following:

1. 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 Thermal resistance of below-grade walls.

Amend section C402.2.4 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.C402.2.6 Slabs on grade.

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 C402.2.4, perimeter insulation is not required.

23.60.C403.2.2 Equipment and system sizing.

Amend section C403.2.2 by adding exception number 3 as follows:

3. Heating equipment may be oversized by up to 25 percent.

23.60.C403.2.4.4 Shutoff damper controls.

Amend section C403.2.4.4 by adding exception number 4 as follows:

4. Motorized dampers 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.C403.2.6 Energy recovery ventilation systems.

Amend the exception by revising condition Number 8 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 10 as follows:

10. 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 11 as follows:

11. 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.C403.2.7.1.3 High-pressure duct systems.

Amend section C403.2.7.1.3 by deleting the last sentence stating "Documentation shall be furnished by the designer demonstrating…"

23.60.C403.2.8 Piping insulation.

Amend section C403.2.8 by adding exception number 7 as follows:

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

23.60.C403.2.10 Air system design and control.

Amend section C403.2.10 by replacing 5 horsepower with 10 horsepower.

23.60.C403.4.3.4 Part load controls.

Amend section C403.4.3.4 by replacing 300,000 Bth/h with 500,000 Btu/h, and adding an exception as follows:

Exception: Where the hydronic system serves domestic hot water generation equipment or other equipment that requires a consistent supply temperature and is not applicable to fluid temperature setback control.

23.60.C404.3 Temperature control.

Delete section C404.3.

23.60.C405.2.1.1 Interior lighting controls

Amend section C405.2.1.1 by adding exception number 3 as follows:

3. Equipment rooms, storerooms, restrooms, and similar common and/or normally unoccupied spaces that are already controlled by an occupancy sensor.

23.60.C405.2.1.2 Light reduction controls.

Amend section C405.2.1.2 by revising exception number 3 as follows:

3. Corridors, equipment rooms, storerooms, restrooms, public lobbies, electrical or mechanical rooms and similar common and/or normally unoccupied spaces.

Amend section C405.2.1.2 by adding exception number 7 as follows:

7. Areas where HID lighting is utilized as the primary light source.

23.60.C405.2.2 Additional lighting controls.

Amend C405.2.2 by replacing the first sentence with the following:

Provide additional controls in building areas specified in Sections C405.2.2.1 and C405.2.2.2.

23.60.C405.2.2.1 Automatic time switch control devices.

Amend section C405.2.2.1 by replacing the first sentence with the following:

Occupied areas exceeding 5000 square feet (465 square meters) and under the control of a single occupant, owner, or tenant shall be equipped with an automatic control device to shutoff lighting.

23.60.C405.2.2.2 Occupancy sensors.

Amend section C405.2.2.2 by deleting "private offices" from the first sentence.

23.60.C405.2.2.3 Daylighting zone control.

Delete section C405.2.2.3

23.60.C405.5 Interior lighting power requirements (Prescriptive).

Amend section C405.5 by replacing the first sentence with the following:

A building complies with this section if its total connected lighting power calculated under section C405.5.1 is no greater than 125 percent of the interior lighting power calculated under section C405.5.2.

23.60.C408.2 Mechanical systems commissioning and completion requirements.

Revise the exception to read as follows:

> **Exception:** Mechanical systems serving buildings smaller than 30,000 square feet or simple mechanical systems covered by Section C403.3 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.

23.60.R102-R109 Delete sections.

Delete sections R102 through R109. Refer to the Anchorage Administrative Code.

23.60.R303.1.4 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.R401.3 Certificate (Mandatory).

Add the following exception:

> **Exception:** A certificate is not required for additions, alterations, renovations, and repairs to an existing building.

23.60.Table R402.1.1 Insulation And Fenestration Requirements By Component

Replace the TABLE R402.1.1 with the following:

TABLE R402.1.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT CLIMATE ZONE 7	
COMPONENT	**R-VALUE (MINIMUM)**
FENESTRATION	3.1
SKYLIGHT	1.8
CEILING	49
WOOD FRAME WALL	21
MASS WALL	21
FLOOR	38
BASEMENT WALL	15 CONTINUOUS or 19 CAVITY
SLAB	10 FOR 36 INCHES VERTICALLY ALONG PERIMETER
SLAB, HEATED	10 UNDER ENTIRE SLAB AND FOR 36 INCHES VERTICALLY ALONG PERIMETER
CRAWLSPACE WALL	15 CONTINUOUS or 19 CAVITY

23.60.Table R402.1.3 Equivalent U-Factors

Replace TABLE R402.1.3 with the following:

TABLE R402.1.3 EQUIVALENT U-FACTORS CLIMATE ZONE 7	
COMPONENT	**EQUIVALENT MAXIMUM U-FACTOR OR F-FACTOR[b]**
FENESTRATION	U-0.32
SKYLIGHT	U-0.55
CEILING	U-0.020
WOOD FRAME WALL	U-0.057
MASS WALL	U-0.057
FLOOR	U-0.027
BASEMENT WALL	U-0.067
SLAB	F-0.51
SLAB, HEATED	F-0.55
CRAWLSPACE WALL	U-0.067

[b] Use of opaque assembly U-factors, C-factors and F-factors from ANSI/ASHRAE/IESNA 90.1 Appendix A is permitted, provided the construction complies with the applicable construction details from ANSI/ASHRAE/IESNA 90.1 Appendix A.

23.60.R402.2.1 Ceilings with attics.

Amend section R402.2.1 by adding the following exception:

> **Exception:** R-38 fiberglass blanket insulation may be compressed at the eave to provide a 1.5 inch air space when installed between wood trusses having a minimum heel height of 11.25 inches.

23.60.R402.2.10 Crawl space walls.

Delete section R402.2.10 Crawl space walls.

23.60.R402.3.7 Glazing limitation.

Add the following section:

> **R402.3.7 Glazing limitation**. Glazing shall be limited to 18% of the conditioned floor area.

23.60.R402.4.1.2 Testing.

Amend section R402.4.1.2 by adding the following exception:

Exception: Testing is recommended but not required.

23.60.R402.6 Crawl space.

Add the following section:

R402.6 Crawl space (mandatory).

R402.6.1 Unconditioned crawl space. When a crawl space is ventilated to the exterior by natural means in accordance with IRC section R408.2, the floor separating the crawl space from the living area shall be insulated in accordance with section R402.1. The crawl space shall not be heated.

R402.6.2 Conditioned crawl space. When a crawl space is ventilated by mechanical means in accordance with IRC section R408.3, the crawl space walls shall be insulated in accordance with section R402.1. The floor of the crawl space shall be covered in accordance with IRC section R408.3.

23.60.R402.7 Ventilation

Add the following section:

R402.7 Ventilation (Mandatory). Ventilation shall comply with ANSI/ASHRAE Standard 62.2-2010, including Addenda. Where there are conflicts between an adopted code and this standard, the adopted code shall apply.

23.60.R403.2.3 Building Cavities (Mandatory).

Delete section R403.2.3. Building cavities may be used as plenums in accordance with the IRC or IMC, as applicable.

23.60.R403.3 Mechanical system piping insulation.

Insert the following exception under section R403.3:

Exception: piping installed within the building thermal envelope.

23.60.R403.6 Equipment sizing (Mandatory).

Amend section R403.6 by adding the following:

Equipment shall be sized to meet the load and over sizing shall not exceed 125 percent. When this is not feasible given the discrete size options available, equipment delivering the smallest output while satisfying the calculated load shall be used.

23.60.R405.3 Performance based compliance.

Add the following exception:

Exception: Compliance may be demonstrated through a home energy rating under a program approved by the Alaska Housing Finance Corporation (AHFC) that meets the following:

1. A minimum five-star rating is required.
2. The maximum air infiltration rate shall not exceed four air changes per hour at 50 pascals pressure difference.
3. The compliance rating shall be performed by a person authorized by AHFC.

Compliance with sections R405.4 through R405.6 is not required.