

Introduced by: Mayor Cleworth
Introduced: February 14, 2011

ORDINANCE NO. 5832

**AN ORDINANCE TO AMEND FGC SECTION 10-456, BY
ADOPTING THE 2009 INTERNATIONAL ENERGY
CONSERVATION CODE WITH AMENDMENTS AND SETTING
AN EFFECTIVE DATE**

WHEREAS, the Building Code Review and Appeals Commission has reviewed the 2009 International Energy Conservation Code and the amendments thereto; and

WHEREAS, the City Council now desires to accept the recommendations of the Building Code Review and Appeals Commission to adopt the 2009 International Energy Conservation Code with local amendments,

NOW, THEREFORE, BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF FAIRBANKS, ALASKA, as follows:

Section 1. The current FGC Sec. 10-456 is hereby repealed and re-enacted as follows:

Sec. 10-456. Adopted; amendments.

The 2009 International Energy Conservation Code is hereby adopted.

The 2009 International Energy Conservation Code is hereby amended as follows:

Section 202 General definitions.

Vapor Retarder. Create a new definition to read as follows:

Vapor retarder. A vapor resistant material, membrane or covering having a permeance rating of .06 perm and recognized as a class 1 vapor retarder in accordance with the International Residential Code.

Section 401.3 Certificate. Delete this section in its entirety.

Table 402.1.1 Insulation and Fenestration Minimum R-Values by Component.
Delete the table in its entirety and replace with the following:

| Table 402.1.1 Insulation and Fenestration Minimum R-Values by Component | | | | | | | | |
|---|---------|-------|----------------------|----------------------------------|--------------------|-------------------------------|---------------------------|-------------------------------|
| Climate Zone | Windows | Doors | Ceiling ^a | Exterior frame wall ^d | Floor ^e | Below grade wall ^b | Slab ^c & Depth | Crawl-space wall ^b |
| 8 | 3.22 | 7 | 60 or 49 | 21 | 38 | 15/19 | 15, 4ft | 15/19 |

- a. The smaller value may be used with a properly sized, energy-heel truss.
- b. The first R-value applies to continuous insulation, the second to framing cavity insulation; either meets the requirement.
- c. R-5 shall be added to the required slab edge R-values for heated slabs. Insulation shall not be placed below the footing portion unless bearing on entirely non-frost susceptible soils.
- d. Includes rim joists
- e. For exposed floors, floors above crawl spaces do not require insulation.

Section 402.1.2 R-value Computation.
Delete the last sentence in its entirety.

Table 402.1.3 Insulation and Glazing Maximum U-Factors by component. Delete the table in its entirety and replace with the following:

| Table 402.1.3 Insulation and Glazing Maximum U-Factors by Component ^c | | | | | | | | |
|--|---------|-------|----------------------|---------------------|--------------------|-------------------------------|-------|-------------------------------|
| Climate Zone | Windows | Doors | Ceiling ^a | Exterior frame wall | Floor ^e | Below grade wall ^b | Slab | Crawl-space wall ^b |
| 8 | .31 | .14 | 0.017 or 0.020 | 0.047 | 0.0026 | 0.067/ 0.053 | 0.067 | 0.066/ .052 |

- a. The smaller value may be used with a properly sized, energy-heel truss.
- b. The first R-value applies to continuous insulation, the second to framing cavity insulation; either meets the requirement.
- c. R-5 shall be added to the required slab edge R-values for heated slabs. Insulation shall not be placed below the footing portion unless bearing on entirely non-frost susceptible soils.
- d. Includes rim joists
- e. For exposed floors, floors above crawlspaces do not require insulation.

Section 402.2.1 Ceilings with attic spaces. Amend this section by adding the following exception:

Exception: R-49 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.

Section 402.2.4 Mass walls. Delete this section in its entirety.

Section 402.2.9 Crawl space walls. Delete this section in its entirety and rename and replace as follows:

Section 402.2.9 Crawl space walls and adjacent floor.

Floors located above crawl spaces and not directly exposed to exterior ambient temperatures are not required to be insulated if such spaces contain, plumbing piping, hydronic piping or water and sewer services. Crawl spaces may be vented by natural or mechanical means as prescribed by the International Residential Code or International Building Code. Crawl spaces which are vented to the exterior and contain piping as described above shall be protected during freezing temperatures by an approved method or material. Crawl space wall insulation shall be permanently fastened to the wall and extend downward from the floor level to the top of the footing. Exposed earth in crawl space foundations shall be covered with a continuous vapor retarder. All joints of the vapor retarder shall overlap by 6 inches and be sealed or taped. The edges of the vapor retarder shall extend at least 6 inches up the stem wall and shall be attached or secured to the stem wall in an approved manner.

Section 402.3.7 Glazing limitation. Add a new section to read as follows:

Glazing shall be limited to 15% of the conditioned floor area unless substantiated by a design prepared by a licensed engineer or architect registered in the State of Alaska

Section 402.4.6 Moisture control (Mandatory) Create a new section and title to read as follows.

Moisture control (Mandatory). The building design shall not create conditions of accelerated deterioration from moisture condensation. Walls, floors, ceilings, crawl space walls, crawl space floors and concrete slabs shall incorporate an approved, continuous, vapor retarder. The vapor retarder shall be installed on the warm side of the insulation. All seams shall be lapped a minimum of one stud or joist bay or sealed with an approved tape or sealant. All voids between joists and studs shall be insulated and sealed in an approved manner.

Exceptions:

1. In construction where moisture or its freezing will not damage materials.
2. One-third of total installed insulation may be installed on the warm side of vapor retarders.

Section 403.2.2 Sealing (Mandatory). Delete this section in its entirety and replace with the following:

All ducts, air handlers, filter boxes and building cavities used as ducts shall be sealed. Joints and seams shall comply with the 2009 International Mechanical Code as adopted by the City Of Fairbanks.

Section 403.2.4 Duct material. Create a new subsection to read as follows:

A duct transporting ventilation air shall be constructed of a smooth-walled material, such as galvanized steel or lined fiberglass (rigid or semi-rigid). The use of flexible ducting is approved as a transition from rigid ducting to mechanical and air handling equipment. In all circumstances flexible ducting shall be installed per the manufacturer's instructions. Flexible ducting shall be supported to prevent sags. The radius at the centerline shall not be less than one duct diameter.

Section 403.3 Mechanical system piping insulation (Mandatory). Insert an exception to read as follows:

Exception: piping installed within the building thermal envelope.

Section 403.5 Mechanical ventilation (Mandatory) Add a second sentence to read as follows:

Exterior exhaust vents shall be located to prevent exhaust air from entering attic or soffit vents.

Section 403.6 Equipment sizing (Mandatory). Add the following to the end of the paragraph:

Heating and cooling equipment shall be sized in accordance with the 2009 International Mechanical Code as adopted by the City of Fairbanks or based on design loads determined in accordance with the procedures described in ASHRAE Fundamentals Handbook, or other approved equivalent computational procedures.

Section 403.10 Ventilation standard. Add a new section to read as follows:

Ventilation shall comply with the 2009 International Mechanical Code or the latest edition of the ASHRAE Standard 62.2 as referenced.

Section 405.3 Performance based compliance Add an exception to read as follows:

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 four star plus rating is required.
2. The maximum air infiltration rate shall not exceed seven air changes per hour at 50 Pascal's pressure difference.
3. The compliance rating shall be performed by a person authorized by AHFC.

4. Compliance with sections 404.4 through 404.6 is not required.

Chapter 5 Commercial Energy Efficiency. Delete this section in its entirety.

Chapter 6 Referenced Standards. Add the following to the ASHRAE section:

62.2-2004 Ventilation and acceptable indoor air quality in low rise buildings.

Section 2. That the effective date of this ordinance shall be the 5th day of March 2011.


JERRY CLEWORTH, Mayor

AYES: Stiver, Maherly, Gatewood, Bratcher, Eberhart, Roberts
NAYS: None

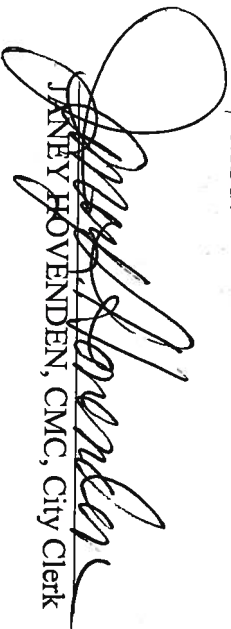
ABSTAIN:

ABSENT:

ADOPTED: February 28, 2011

ATTEST:

APPROVED AS TO FORM:


JANEY HOWENDEN, CMC, City Clerk


PAUL EWERS, City Attorney