

RESOLUTION NO. 2013-20

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FLAGSTAFF, ARIZONA, DECLARING AS A PUBLIC RECORD THAT CERTAIN DOCUMENT FILED WITH THE CITY CLERK ENTITLED THE "*(VERSION A-2009 / VERSION B-2012) ENERGY CODE AND THE 2013 AMENDMENTS TO CITY CODE / (VERSION A-2009/VERSION B-2012) ENERGY CODE, TITLE 4, BUILDING REGULATIONS*" AND PROVIDING FOR AMENDMENTS, ADDITIONS AND DELETIONS THERETO

ENACTMENTS:

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF FLAGSTAFF AS FOLLOWS:

That certain document entitled "*(VERSION A-2009 / VERSION B-2012) ENERGY CODE AND THE 2013 AMENDMENTS TO CITY CODE / (VERSION A-2009/VERSION B-2012) ENERGY CODE, TITLE 4, BUILDING REGULATIONS*" three copies of which are on file in the office of the City Clerk, is hereby declared to be a public record, and said copies are ordered to remain on file with the City Clerk.

PASSED AND ADOPTED by the City of Flagstaff Council and approved by the Mayor of the City of Flagstaff this 16th day of July, 2013.

MAYOR

ATTEST:

CITY CLERK

APPROVED AS TO FORM:

CITY ATTORNEY

EXHIBIT 'A'

**2013 AMENDMENTS TO FLAGSTAFF CITY CODE -
2009 ENERGY CONSERVATION CODE, TITLE 4, BUILDING CODE**

CHAPTER 4-09

INTERNATIONAL ENERGY CONSERVATION CODE

Sections:

[4-09-001-0001](#) **AMENDMENTS, ADDITIONS, AND DELETIONS**

Section 4-09-001-0001 Amendments, Additions, and Deletions

The following provisions shall have the effect of either amending, adding to, or deleting from the International Energy Conservation Code adopted in Flagstaff City Code, Title 4, Building Regulations, Chapter 4-01, Administrative Enactments, Section 4-01-001-0002, Adoption.

[Chapter 1, ADMINISTRATION](#)

[Amend Sections R101.2 and C101.2 Scope by adding:](#)

[Exception: Group R-2 occupancies to be able to comply with either the residential or commercial requirements of the Energy Code.](#)

CHAPTER 4, RESIDENTIAL ENERGY EFFICIENCY

Add the following amendments to Chapter 4:

Amend Section 402.1.1 by adding:

Insulation values in 2x6 wall construction will remain the same at R-19.

Exception: Insulation values in existing 2x4 wall construction will remain at R-15 (high density).

(Amended Ord. No. 2011-12, July 19, 2011)

Amend Section 402.1.3.1 Window Fenestration

All new construction and replacement windows to have National Fenestration Rating Council (NFRC) total unit U-factor of 0.45 or less. Windows shall also be low-E where practical (not recommended for southern exposures) or not being used for solar heat gain to fuel a solar massing device. (Amended Ord. No. 2011-12, July 19, 2011)

~~Amend Section 403 by adding:~~

~~Section 403.1.2 All new construction and replacement heating units (optional for hydronic in floor heating systems) will have Programmable thermostats.~~

(Amended Ord. No. 2011-12, July 19, 2011)

**2013 AMENDMENTS TO FLAGSTAFF CITY CODE -
2009 ENERGY CONSERVATION CODE, TITLE 4, BUILDING CODE**

Section 403.7 Furnaces: All furnaces installed in new construction shall be 90% condensing type furnaces.

Exception: Replacement furnaces are to be voluntarily 90% condensing type furnaces.

(Amended Ord. No. 2011-12, July 19, 2011)

~~Section 403.8 Water heaters shall either be insulated using exterior "jackets" or for "Energy Star" or energy conservation rated appliance that have pre-installed insulation. The insulation information must be available on the appliance installed at the time of final inspection. A minimum total insulation value of R-16 must be achieved. (This applies to new installation or replacements.)~~

~~Exception: The R-16 is not required when the existing room size prohibits the larger sized water heater and the Manufacturer's listing prohibits the use of insulation jackets.~~

~~(Amended Ord. No. 2011-12, July 19, 2011)~~

~~Section 403.9 A carbon monoxide (CO) detector shall be installed at the house/garage entry door and within each utility room where combustion appliances are used (sealed combustion appliances are exempt). A laundry room which uses gas appliances would require a detector.~~

Section 403.10 All hot water supply lines (both ½" and ¾") will be insulated with a minimum of R3.6 wrap insulation; or ½" foam covers. All joints between sections of insulation will be snugly butted together and wrapped with duct tape.

Section 403.11 All newly installed toilets must be "high efficiency toilets" (HET) units which have a maximum of 1.3 gallons for solids. (Special attention to this change needs to be addressed by suppliers and home improvement centers which stock the older style units).

~~Section 403.13 A construction waste reduction/reuse plan will be written and provided at the time of building permit submittal for new construction of all new commercial projects (apartments and condominiums), townhouse subdivisions and or single family detached builders who submit for more than 15 permits within a subdivision during any one calendar year. The plan must address construction waste to include cardboard, drywall, foam, metal, concrete, masonry and asphalt.~~

~~Section 403.14 All appliances, refrigerators, freezers, washers, dryers, cook stoves, that are supplied by the contractor shall be Energy Star.~~

(Amended Ord. No. 2011-12, July 19, 2011)

~~Amend Chapter 4 by adding Section 405.~~

~~Section 405 Best Practices: The following items are recommended but not required in all new residential construction.~~

**2013 AMENDMENTS TO FLAGSTAFF CITY CODE -
2009 ENERGY CONSERVATION CODE, TITLE 4, BUILDING CODE**

~~Section 405.1: Future Solar Water Heater. All new residential construction shall be built so as to accommodate a future installation of a solar water tank. Ceilings within the water heater compartment shall be a minimum 8 foot in height. Either insulated plumbing for standard inter connect to a roof mounted system will be pre-plumbed or adequately sized chase/access panel provided between the water heater compartment and the attic space will be installed.~~

~~Exception: Single story single family dwellings.~~

~~Section 405.2: Future Solar Photovoltaic. All new residential construction shall be supplied with a minimum ¼ inch electrical conduit, with a pull wire, for the future installation of a solar photovoltaic system. The conduit shall be run from the inside of an accessible attic crawl space to the electrical service entrance section.~~

~~Section 405.3: Future Alternative Energy Systems. (Wind Turbines or geothermal): Working drawings prepared by the owner builder, contractor, draftsman or design professional should indicate possible location of expansion to accept alternative energy systems. This can be demonstration by indicating location of future accessory service panels for electrical systems or expansion capability of mechanical rooms for boilers and control systems.~~

~~Section 405.4: Voluntary Sustainability Programs. This allows the voluntary use of LEED, Coconino county sustainable checklist, National Green Building Standard, NAHB 2008, ICC 700 2008. This allows the builder or property owner to participate in sustainable programs that are not listed in the International Energy Conservation Code, 2006 edition.~~

~~Section 405.5: Jump Ducts. Provide an air balancing device between adjoining rooms to allow equalization of air pressure and temperatures between rooms.~~

~~Section 405.6: Exterior Wall Insulation. Contractor to increase R-19 to R-24 insulation using high density or spray applied foam insulation in exterior framed walls.~~

~~Section 405.7: Protection of Cold Water Supply Lines. Add R-19 insulation to water supply lines that are exposed in crawl spaces.~~

~~Section 405.6: Lighting. At the time of final inspection, the builder, contractor, or owner may install compact fluorescent lights (CFLs), other fluorescent, LEDs or other energy efficient lighting equivalent to or better than fluorescents in the high use areas for new construction. High use areas are typically defined as kitchens, living room, family room, and dining area. Specialty type lighting fixtures shall be of a low wattage or low voltage type.~~

~~Exception: Specialty lighting (chandeliers and under counter halogen lights) may be used in living rooms, dining rooms and kitchens. Recessed spot lights will use CFL's or LED's and reostats must be rated for their use.~~

**2013 AMENDMENTS TO FLAGSTAFF CITY CODE -
2009 ENERGY CONSERVATION CODE, TITLE 4, BUILDING CODE**

~~Section 405.7: Wood floors in new construction may have an insulation value of R-30.~~

~~Section 405.8: Insulation in contact with the ground may be extruded polystyrene or other foam products other than expanded polystyrene.~~

~~Section 405.9: Hot water re-circulating pumps are to have a programmable timer, an on/off switch, and ¾ inch foam pipe insulation.~~

Section N1105.10 Dual Plumbing. All new residential single family detached units are "voluntarily" requested to install the piping only for dual plumbed for "gray water" disposal and conservation efforts. Access for future valving must be provided and the initial installation will be connected to sanitary sewer. The piping shall be installed in accordance Appendix C, Gray Water Recycling Systems, of the International Plumbing Code, 2009 Edition, and the regulations established by ADEQ. Reference Type 1 General Permit Best Management Practices for the 13 points of using gray water, at www.adeq.state.az.us or call at 1-800-234-5677.)

(Amended Ord. No. 2011-12, July 19, 2011)

CHAPTER 5 COMMERCIAL ENERGY EFFICIENCY

Amend Chapter 5 by deleting Sections 505.6.1 through 505.6.2 and replace with:

City of Flagstaff has an exterior lighting permit requirement, enforces a "Dark Sky Ordinance" and requires review by zoning enforcement and the Project Management Section prior to installation. Lumen calculations are required and amounts are limited by property size and use.

(Amended Ord. No. 2007-47, 12/18/2007; Amended Ord. 2007-48, 01/15/2008; Amended Ord. No. 2009-06, 07/18/2009; Amended Ord. No. 2011-12, July 19, 2011)

2013 AMENDMENTS TO FLAGSTAFF CITY CODE – 2012 ENERGY CONSERVATION CODE, TITLE 4, BUILDING CODE

CHAPTER 4-09

INTERNATIONAL ENERGY CONSERVATION CODE

Sections:

4-09-001-0001 AMENDMENTS, ADDITIONS, AND DELETIONS

Section 4-09-001-0001 Amendments, Additions, and Deletions

The following provisions shall have the effect of either amending, adding to, or deleting from the International Energy Conservation Code adopted in Flagstaff City Code, Title 4, Building Regulations, Chapter 4-01, Administrative Enactments, Section 4-01-001-0002, Adoption.

Chapter 1, ADMINISTRATION

Amend Sections R101.2 and C101.2 Scope by adding:

Exception: Group R-2 occupancies to be able to comply with either the residential or commercial requirements of the Energy Code.

CHAPTER 4, RESIDENTIAL ENERGY EFFICIENCY

Add the following amendments to Chapter 4:

Amend Section 402.1.1 by adding:

~~Insulation values in 2x6 wall construction will remain the same at R-19.~~

Exception: Insulation values in existing 2x4 wall construction will remain at R-15 (high density).

(Amended Ord. No. 2011-12, July 19, 2011)

Amend Section 402.1.3.1 Window Fenestration

All new construction and replacement windows to have National Fenestration Rating Council (NFRC) total unit U-factor of 0.45 or less. Windows shall also be low-E where practical (not recommended for southern exposures) or not being used for solar heat gain to fuel a solar massing device. (Amended Ord. No. 2011-12, July 19, 2011)

Amend Section R402.2.1, Ceilings with Attic Spaces by changing the 5th sentence to read;

"Similarly, R-30 shall be deemed to satisfy the requirement for R-49 wherever the insulation extends over the wall top plate at the eaves.

~~Amend Section 403 by adding:~~

**2013 AMENDMENTS TO FLAGSTAFF CITY CODE – 2012 ENERGY
CONSERVATION CODE, TITLE 4, BUILDING CODE**

~~Section 403.1.2 All new construction and replacement heating units (optional for hydronic in floor heating systems) will have Programmable thermostats.~~

(Amended Ord. No. 2011-12, July 19, 2011)

~~Amend Section R402.4.1.2 Testing by deleting it in its entirety.~~

~~Amend Sections R403.5 and R403.5.2 by deleting them in their entirety.~~

Section 403.7 Furnaces: All furnaces installed in new construction shall be 90% condensing type furnaces.

Exception: Replacement furnaces are to be voluntarily 90% condensing type furnaces.

(Amended Ord. No. 2011-12, July 19, 2011)

~~Section 403.8 Water heaters shall either be insulated using exterior "jackets" or for "Energy Star" or energy conservation rated appliance that have pre-installed insulation. The insulation information must be available on the appliance installed at the time of final inspection. A minimum total insulation value of R-16 must be achieved. (This applies to new installation or replacements.)~~

~~Exception: The R-16 is not required when the existing room size prohibits the larger sized water heater and the Manufacturer's listing prohibits the use of insulation jackets.~~

~~(Amended Ord. No. 2011-12, July 19, 2011)~~

~~Section 403.9 A carbon monoxide (CO) detector shall be installed at the house/garage entry door and within each utility room where combustion appliances are used (sealed combustion appliances are exempt). A laundry room which uses gas appliances would require a detector.~~

~~Section 403.10 All hot water supply lines (both ½" and ¾") will be insulated with a minimum of R3.6 wrap insulation; or ½" foam covers. All joints between sections of insulation will be snugly butted together and wrapped with duct tape.~~

Section 403.11 All newly installed toilets must be "high efficiency toilets" (HET) units which have a maximum of 1.3 gallons for solids. (Special attention to this change needs to be addressed by suppliers and home improvement centers which stock the older style units).

~~Section 403.13 A construction waste reduction/reuse plan will be written and provided at the time of building permit submittal for new construction of all new commercial projects (apartments and condominiums), townhouse subdivisions and or single family detached builders who submit for more than 15 permits within a subdivision during any one calendar year. The plan must address construction waste to include cardboard, drywall, foam, metal, concrete, masonry and asphalt.~~

2013 AMENDMENTS TO FLAGSTAFF CITY CODE – 2012 ENERGY CONSERVATION CODE, TITLE 4, BUILDING CODE

~~Section 403.14 All appliances, refrigerators, freezers, washers, dryers, cook stoves, that are supplied by the contractor shall be Energy Star.~~

(Amended Ord. No. 2011-12, July 19, 2011)

~~Amend Chapter 4 by adding Section 405.~~

~~Section 405 Best Practices: The following items are recommended but not required in all new residential construction.~~

~~Section 405.1: Future Solar Water Heater. All new residential construction shall be built so as to accommodate a future installation of a solar water tank. Ceilings within the water heater compartment shall be a minimum 8 foot in height. Either insulated plumbing for standard inter connect to a roof mounted system will be pre-plumbed or adequately sized chase/access panel provided between the water heater compartment and the attic space will be installed.~~

~~Exception: Single story single family dwellings.~~

~~Section 405.2: Future Solar Photovoltaic. All new residential construction shall be supplied with a minimum ¾ inch electrical conduit, with a pull wire, for the future installation of a solar photovoltaic system. The conduit shall be run from the inside of an accessible attic crawl space to the electrical service entrance section.~~

~~Section 405.3: Future Alternative Energy Systems. (Wind Turbines or geothermal): Working drawings prepared by the owner builder, contractor, draftsman or design professional should indicate possible location of expansion to accept alternative energy systems. This can be demonstrated by indicating location of future accessory service panels for electrical systems or expansion capability of mechanical rooms for boilers and control systems.~~

~~Section 405.4: Voluntary Sustainability Programs. This allows the voluntary use of LEED, Coconino county sustainable checklist, National Green Building Standard, NAHB 2008, ICC 700-2008. This allows the builder or property owner to participate in sustainable programs that are not listed in the International Energy Conservation Code, 2006 edition.~~

~~Section 405.5: Jump Ducts. Provide an air balancing device between adjoining rooms to allow equalization of air pressure and temperatures between rooms.~~

~~Section 405.6: Exterior Wall Insulation. Contractor to increase R-19 to R-24 insulation using high density or spray applied foam insulation in exterior framed walls.~~

~~Section 405.7: Protection of Cold Water Supply Lines. Add R-19 insulation to water supply lines that are exposed in crawl spaces.~~

~~Section 405.6: Lighting. At the time of final inspection, the builder, contractor, or owner may install compact fluorescent lights (CFLs), other fluorescent, LEDs or other energy efficient lighting equivalent to or~~

2013 AMENDMENTS TO FLAGSTAFF CITY CODE – 2012 ENERGY CONSERVATION CODE, TITLE 4, BUILDING CODE

~~better than fluorescents in the high use areas for new construction. High use areas are typically defined as kitchens, living room, family room, and dining area. Specialty type lighting fixtures shall be of a low wattage or low voltage type.~~

~~Exception: Specialty lighting (chandeliers and under counter halogen lights) may be used in living rooms, dining rooms and kitchens. Recessed spot lights will use CFL's or LED's and reostats must be rated for their use.~~

~~Section 405.7: Wood floors in new construction may have an insulation value of R-30.~~

~~Section 405.8: Insulation in contact with the ground may be extruded polystyrene or other foam products other than expanded polystyrene.~~

~~Section 405.9: Hot water re-circulating pumps are to have a programmable timer, an on/off switch, and ¾ inch foam pipe insulation.~~

Section N1105.10 Dual Plumbing. All new residential single family detached units are "voluntarily" requested to install the piping only for dual plumbed for "gray water" disposal and conservation efforts. Access for future valving must be provided and the initial installation will be connected to sanitary sewer. The piping shall be installed in accordance Appendix C, Gray Water Recycling Systems, of the International Plumbing Code, 2009 Edition, and the regulations established by ADEQ. Reference Type 1 General Permit Best Management Practices for the 13 points of using gray water, at www.adeq.state.az.us or call at 1-800-234-5677.)

(Amended Ord. No. 2011-12, July 19, 2011)

CHAPTER 5 COMMERCIAL ENERGY EFFICIENCY

Amend Chapter 5 by deleting Sections 505.6.1 through 505.6.2 and replace with:

City of Flagstaff has an exterior lighting permit requirement, enforces a "Dark Sky Ordinance" and requires review by zoning enforcement and the Project Management Section prior to installation. Lumen calculations are required and amounts are limited by property size and use.

(Amended Ord. No. 2007-47, 12/18/2007; Amended Ord. 2007-48, 01/15/2008; Amended Ord. No. 2009-06, 07/18/2009; Amended Ord. No. 2011-12, July 19, 2011)