

# **CITY of ALBUQUERQUE**

## **SEVENTEENTH COUNCIL**

COUNCIL BILL NO. F/S(2) O-07-73

ENACTMENT NO. \_\_\_\_\_

SPONSORED BY: Isaac Benton, Michael Cadigan, Martin Heinrich

**ORDINANCE**

**AMENDING SECTION 14-1-3(M) ROA 1994 TO ADOPT THE 2006  
INTERNATIONAL ENERGY CONSERVATION CODE; CREATING THE  
ALBUQUERQUE HIGH PERFORMANCE BUILDING ORDINANCE  
ESTABLISHING CERTAIN ENVIRONMENTALLY SENSITIVE PRACTICES IN  
CONSTRUCTION.**

**BE IT ORDAINED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF  
ALBUQUERQUE:**

**Section 1. SHORT TITLE. Sections 1 through 3 of this ordinance may be  
cited as the “Albuquerque High Performance Buildings Ordinance”.**

**Section 2. Council Findings.**

**The Council makes the following findings:**

**(1) The green building design and construction standards established in  
this Chapter are intended to reduce human exposure to noxious materials;  
conserve energy, both non-renewable and renewable, as well as scarce  
resources; minimize the ecological impact of building construction; use  
renewable energy and protect and restore local air, water, flora and fauna.**

**(2) These standards will help use energy, water and materials more  
efficiently, reduce greenhouse gas emissions and reduce the cost of building  
operations.**

**(3) The requirements set out in this ordinance set standards that can be  
achieved with low effort and first cost, while achieving a significantly lower life  
cycle cost. These requirements establish minimum standards that should be  
expected in any building.**

**(4) Periodic review and revision of this code will be necessary in order  
to adopt higher standards of energy efficiency that reflect advancements in**

1 technology, construction standards, and public policy. The designated  
2 Planning Department code enforcement manager (building official) shall  
3 regularly prepare amendments to the International Energy Conservation Code  
4 (IECC) for adoption as part of the City's Uniform Administrative Code by the  
5 City Council. Amendments shall be submitted for approval consistent with a  
6 maintenance schedule that shall also be subject to Council approval.

7 Section 3. A High Performance Building Ordinance is adopted as follows,  
8 and shall be incorporated by the Planning Department in revisions to the  
9 Uniform Administrative Code of the City of Albuquerque, the Technical Code  
10 of the City of Albuquerque and applicable regulations, and manuals:

11 A. Applicability. The provisions of this ordinance shall apply to all new  
12 buildings and to the replacement of specific components and systems  
13 described herein. Sections D, E, F, J, L, M, and N of this ordinance shall apply  
14 to existing buildings undergoing repairs, alterations or rehabilitation when the  
15 work area, as defined in the International Existing Building Code, exceeds 50  
16 percent of the aggregate area of the building regardless of the costs of  
17 repairs, alteration, or rehabilitation, replacement of specific components and  
18 systems described herein shall comply with this Ordinance. Exception:  
19 Historic buildings as defined in the International Existing Building Code.

20 B. Green Building Certification. The building official shall develop a  
21 program for expedited permitting of high-performance buildings that  
22 substantially exceed City code standards.

23 C. Documentation of Heating, Ventilating and Air Conditioning (HVAC)  
24 Sizing. Documentation verifying the methodology and accuracy of heating  
25 and cooling equipment and duct sizing shall be submitted with the mechanical  
26 code compliance package. Documentation shall include the following  
27 information:

28 (1) Address of permit application, or indication of the model type  
29 for bulk reissue plans.

30 (2) Name of individual performing load calculations.

31 (3) Name and version of load calculation software.

1                   (4)     Design temperatures (outdoor and indoor) according to the Air  
2     Conditioning Contractors of America's (ACCA) Manual J, ACCA Manual N,  
3     American Society of Heating, Refrigeration and Air Conditioning Engineers,  
4     U.S. Department of Energy standards, or other methodology approved by the  
5     City of Albuquerque.

6                   (5)     Area of walls, windows, skylights and doors.

7                   (6)     Orientation of building, windows and glass doors, infiltration  
8     rate, duct loads, internal gains, insulation values, and Solar Heat Gain  
9     Coefficient (SHGC) of windows and glass doors.

10                  (7)     Heating and cooling load calculations.

11                  (8)     Duct sizing according to ACCA Manual D, equipment sizing  
12     according to ACCA Manual J and equipment selection according to ACCA  
13     Manual S, or other methodologies approved by the City of Albuquerque.

14                  D.     HVAC controls. All evaporative coolers installed in newly  
15     constructed buildings shall be controllable by thermostat controls. After June  
16     1, 2008, all other heating and air conditioning shall be controllable by automatic  
17     setback thermostats.

18                  E.     Evaporative coolers shall not use continuous bleed sump dumps.

19                  F.     Residential HVAC Equipment. In buildings regulated by the  
20     International Residential Code the following equipment standards shall apply:

21                         (1)     Forced air heating furnaces shall have minimum 90% Annual  
22     Fuel Utilization Efficiency (AFUE) as rated on the manufacturer's label or be  
23     Energy Star rated.

24                         (2)     Cooling equipment shall have minimum 15 SEER, as rated by  
25     the Air-Conditioning and Refrigeration Institute (ARI), or be evaporative  
26     coolers.

27                         (3)     Heat pumps shall have a minimum heating season  
28     performance factor (HSPF) of 8.

29                         (4)     The primary source of space heating shall not be electric  
30     resistance. Exceptions: a) Buildings that do not use fossil fuels or electricity  
31     produced by fossil fuels; b) Where approved by the Green Building Program  
32     Manager, electric-resistance heaters may be used as a source of backup heat in  
33     buildings with passive-solar collection and storage systems capable of

1 supplying 100 percent of the buildings space heating requirements; c) Where  
2 approved by the Green Building Program Manager, electric-resistance heaters  
3 may be used as a source of backup heat in portions of buildings with passive-  
4 solar collection and storage systems capable of supplying 100 percent of the  
5 space heating requirements for the space, provided that such space is  
6 separated from the remainder of the building by a thermal envelope that  
7 complies with this ordinance.

8 G. Residential Building Leakage. In all one and two-family dwellings  
9 regulated by the International Residential Code, framing inspections shall  
10 include a Thermal Bypass inspection as required by Energy Star. The  
11 Planning Department shall train building inspectors for this added inspection  
12 requirement.

13 H. Duct System Leakage. In all building types, joints in supply ducts  
14 and return plenum/ducts shall be properly sealed using foil tape or fabric with  
15 water-based mastic. Flexible duct shall be supported horizontally every four  
16 feet and vertically every six feet on center maximum. Exception: Existing  
17 construction with no modification of or addition to the existing ductwork.

18 I. Building Insulation, thermal barrier, and roof reflectance.

19 (1) In all one and two-family dwellings regulated by the  
20 International Residential Code, roofs shall be insulated to at least R-38; walls  
21 shall be insulated to at least R-13; framed floors shall be insulated to at least  
22 R- 21 if over unheated uninsulated space; floor slabs on grade shall be  
23 insulated at their perimeter edges to at least R-5; basement walls shall be  
24 insulated to at least R-11.

25 (2) Where the roof of an existing building is being replaced and  
26 the roof is a component of the thermal envelope of a building regulated by this  
27 ordinance and the R-value of the existing roof insulation is less than 30,  
28 insulation shall be added to achieve R-30. Exceptions: a) Reroofing where  
29 either the roof sheathing or the roof insulation is not exposed; b) Where the  
30 insulation is continuous and is applied entirely above the roof sheathing, R-20  
31 shall be allowed; c) Insulation may be tapered to drain to existing scuppers  
32 provided the average R-value of the roof insulation complies with this section  
33 and the minimum added R-value is 3; d) Where the overall U-value of the entire

roof assembly is 0.034 or less. The Planning Department and Family and Community Services Department shall coordinate to jointly create a financial assistance program for elderly and low-income homeowners to assist them in compliance with this provision, to be managed by Family and Community Services.

(3) Roof coverings that meet one of the following standards shall be installed on new roofs and on existing roofs that are being re-roofed or replaced:

(a) Reflective roof coverings that are Energy Star qualified.

(b) Low slope (2 inches in 12, or less) roof coverings that have an initial solar reflectance of 0.65 or greater as determined by the Cool Roof Rating Council.

(c) Steep slope (greater than 2 inches in 12) roof coverings that have an initial solar reflectance of 0.25 or greater as determined by the Cool Roof Rating Council.

Exception: Vegetated “green roofs” when approved by the building official.

(4) Alternative systems that achieve equivalent thermal performance are allowed if approved by the building official.

#### J. Water Heating.

(1) Until January 1, 2009, gas and electric storage-type water heaters shall have a minimum energy factor (EF) equal to or greater than those listed in the following table. After January 1, 2009, service water heating equipment shall be Energy Star certified. Exception: water heaters of 6 gallon capacity or less with an added insulation blanket of minimum R-12.

Gas	
Size (gallons)	EF
40 or less	0.62
50	0.60
65	0.55
75	0.53
Electric	
30 or less	0.95
40	0.94
50	0.92
65	0.90

**(2) Electric-resistance water heating.** Installation of electric-resistance water heaters is not permitted. Exceptions: a) Tankless electric water heaters until January 1, 2009; b) Where the electricity is provided by an on-site solar photovoltaic system; c) When approved by the Green Building Program Manager as backup for an on-site solar water heating system; d) Water heaters with a maximum capacity of six gallons that are equipped with an insulating blanket that has a minimum R-value of 12; e) The building official may approve electric-resistance water heaters where is shown that natural gas is not available.

**(3) Solar collectors shall be the primary source to heat all swimming pool water.** Exception: Indoor swimming pools that are accessory to occupancies regulated by the International Building Code provided that the building is 30 percent more energy efficient than the same building built to ASHRAE 90.1 – 1999 standards and that the energy used to heat the pool is included in performance-rating calculations complying with Normative Appendix G of ASHRAE 90.1 – 2004.

**K. Pipe Insulation.** All hot water distribution and re-circulating system piping shall be thermally insulated between the heater and the end-use fixtures. Until June 1, 2008, pipe insulation shall have a minimum R-value of 2. After June 1, 2008, pipe insulation shall have a minimum R-value of R-4 for piping two inches or less in diameter and a minimum R value of 6 for larger diameter piping.

**L. Exhaust Ventilation Systems.** Newly installed restroom, bathroom or laundry ventilation equipment in any residential occupancy shall be Energy Star certified. All such equipment shall be controlled by an occupancy sensor or automatic timer switch.

**M.** The following, when installed by the builder in a new building, shall be Energy Star certified:

**Clothes Washers**

**Freezers**

**Refrigerators**

1           **Dishwashers**

2           **N.     In all residential occupancy types, 70 percent of the light fixtures**  
3           **shall be Energy Star rated, or shall be standard fixtures with T-5, T-6 or T-8**  
4           **fluorescent tubes or screw-in fluorescent bulbs.**

5           **O.     Windows and glass doors. North-, east-, and west-facing window**  
6           **and door glass shall be low-e coated. Exception: unheated greenhouse**  
7           **structures that can be decoupled from the building's conditioned thermal**  
8           **envelope.**

9           **Section 4.   SEVERABILITY CLAUSE. If any section, paragraph, sentence,**  
10          **clause, word or phrase of this ordinance is for any reason held to be invalid or**  
11          **unenforceable by any court of competent jurisdiction, such decision shall not**  
12          **affect the validity of the remaining provisions of this ordinance. The Council**  
13          **hereby declares that it would have passed this ordinance and each section,**  
14          **paragraph, sentence, clause, word or phrase thereof irrespective of any**  
15          **provision being declared unconstitutional or otherwise invalid.**

16          **Section 5.   COMPILATION. This ordinance shall be incorporated by the**  
17          **Administration into the Uniform Administrative Code of the City of**  
18          **Albuquerque and Technical Code of the City of Albuquerque and made part of**  
19          **the Revised Ordinances of Albuquerque, New Mexico, 1994.**

20          **Section 6.   EFFECTIVE DATE. This ordinance shall take effect ninety**  
21          **days after publication by title and general summary.**

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