



ORDINANCE NO. 3794

AN ORDINANCE OF THE CITY OF FARMERS BRANCH, TEXAS, AMENDING CODE OF ORDINANCES CHAPTER 22 “BUILDINGS AND BUILDING REGULATIONS” ARTICLE VII.7 “ENERGY CONSERVATION CODE” BY AMENDING SECTION 22-241 “LOCAL AMENDMENTS TO INTERNATIONAL ENERGY CODE” TO ADD PROVISIONS RELATING TO ELECTRIC VEHICLE CHARGING STATIONS; PROVIDING A REPEALING CLAUSE; PROVIDING A SAVINGS CLAUSE; PROVIDING A SEVERABILITY CLAUSE; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED TWO THOUSAND DOLLARS (\$2,000.00) FOR EACH OFFENSE; AND PROVIDING AN EFFECTIVE DATE

WHEREAS, the International Code Council (ICC) has developed a set of comprehensive and coordinated national model construction codes (known generally as the “International Codes”); and

WHEREAS, the International Code Council (ICC) has developed model code language for relating to the installation of electric vehicle charging stations; and

WHEREAS, Farmers Branch is located within Dallas County, Texas, which is listed by the U.S. Environmental Protection Agency (EPA) as a nonattainment for the pollutant “ozone”; and

WHEREAS, motor vehicles operating with gasoline-driven combustible engines are the primary contributor of the nitrogen oxide emissions responsible for ozone formation and poor air quality; and

WHEREAS, the City’s Sustainability Plan recommends the adoption of an electric vehicle (EV) ready building code to remove barriers to transition to electric motor vehicle ownership and operations with the goal of improving public health by reducing air pollution and greenhouse gas emissions associated with vehicle travel; and

WHEREAS, the Sustainability Committee has reviewed the model code language prepared by the ICC and recommends its adoption; and

WHEREAS, the City Council of the City of Farmers Branch finds it to be in the public interest to amend the Code of Ordinances to adopt local amendments to the International Energy Conservation Code relating to electric vehicle charging stations for residential uses.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FARMERS BRANCH, TEXAS, THAT:

SECTION 1. Chapter 22 “Buildings and Building Regulations” Article VII.7 “Energy Conservation Code” of the Code of Ordinances of the City of Farmers Branch, Texas, is amended

by amending Section 22-241 “Local Amendments to the International Energy Conservation Code” to read as follows:

Sec. 22-241. Local Amendments to International Energy Code.

For purposes of enforcement of the provisions of the Energy Conservation Code within the incorporated limits of the City, the following sections, paragraphs, and sentences of the *2018 Edition of the International Energy Conservation Code* are hereby amended as follows:

Section C102/R102 is amended by adding Section C102.1.2 and Section R102.1.2(N1101.4.1) to read as follows:

C102.1.2 Alternative compliance. A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency's Energy Star Program certification of energy code equivalency shall be considered in compliance.

R102.1.2 (N1101.4.1) Alternative compliance. A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency's Energy Star Program certification of energy code equivalency shall be considered in compliance. Regardless of the program or the path to compliance, each 1- and 2-family dwelling shall be tested for air and duct leakage as prescribed in Section R402.4 and R403.3.3 respectively.

Section R202 (N1101.6) is amended by adding definitions for the phrases “Dynamic Glazing,” “Electric Vehicle (EV),” “Electric Vehicle Supply Equipment (EVSE),” “EV-Capable Space,” “EV-Ready Space,” “EVSE-Installed Space,” and “Projection Factor” to read as follows:

DYNAMIC GLAZING. Any fenestration product that has the fully reversible ability to change its performance properties, including *U*-factor, solar heat gain coefficient (SHGC), or visible transmittance (VT).

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use primarily powered by an electric motor that draws current from an onboard battery charged through a building electrical service, electric vehicle supply equipment (EVSE), or another source of electric current.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE): The apparatus installed specifically for the purpose of transferring energy between the premises wiring and the Electric Vehicle.

EV-CAPABLE SPACE. A dedicated parking space with electrical panel capacity and space for a branch circuit dedicated to the EV parking space that is not less than 40-ampere and 208/240-volt and equipped with raceways, both underground and surface mounted, to enable the future installation of electric vehicle supply equipment. For two adjacent EV-Capable spaces, a single branch circuit is permitted.

EV-READY SPACE. A designated parking space which is provided with a dedicated branch circuit that is not less than 40-ampere and 208/240-volt assigned for electric vehicle supply equipment terminating in a receptacle or junction box located in close proximity to the proposed location of the EV parking space. For two adjacent EV-Ready spaces, a single branch circuit is permitted.

EVSE-INSTALLED SPACE. A parking space with electric vehicle supply equipment capable of supplying a 40-ampere dedicated branch circuit rated at 208/240 volt from a building electrical panel board.

Section R401 is amended by adding Section R401.4 to read as follows:

R401.4 Electric Vehicle Charging. Where parking is provided, new construction shall provide electric vehicle spaces in compliance with R401.4.1 through R401.4.5. Where more than one parking facility is provided on a site, electric vehicle parking spaces shall be calculated separately for each parking facility.

Exception: This section does not apply to parking spaces used exclusively for trucks or delivery vehicles.

R401.4.1 Electric Vehicle Ready Circuit. The service panel shall provide sufficient capacity and space to accommodate the circuit and over-current protective device for each EV-Ready Space.

R401.4.2 New Single Family and Two-Family Units. Single family and two-family dwelling units shall provide not less than 1 EV-Ready Space per dwelling unit.

R401.4.3 New multifamily dwellings (three or more units). EVSE-Installed, EV-Ready Spaces and EV-Capable Spaces shall be provided in accordance with Table R401.4.3. Where the calculation of percent served results in a fractional parking space, it shall round up to the next whole number.

**Table R401.4.3
EVSE-Installed and EV-Capable Space Requirements for New Multifamily
Construction**

Total Number of Parking Spaces	Minimum number of EVSE-Installed Spaces*	Minimum number of EV-Capable Spaces
1-10	1	-
11-15	1	3
16-20	2	4
21-25	2	5
26+	2	20% of total parking spaces

*Where EVSE-Installed Spaces actually installed exceed the required values in Table R401.4.3, the additional spaces shall be deducted from the EV-Capable Spaces requirement.

R401.4.4 Identification. Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EVSE. Construction documents shall also provide information on amperage of future EVSE, raceway methods, wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformers, meet the requirements of this code. Parking spaces equipped with EVSE shall be identified by signage. A permanent and visible “EV-Capable” or “EV-Ready” label shall be posted in a conspicuous place at the service panel to identify each panel space reserved to support EV-Capable or EV-Ready Spaces, respectively and at the termination point of the raceway or circuit termination point.

R401.4.4.1 Where new EVSE-Installed Spaces and/or new EV-Capable Spaces and new accessible parking are both provided, parking facilities shall be designed so that at least one accessible parking space shall be EV Capable or EVSE Installed.

Table R402.1.2 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT is amended by amending the Fenestration U-Factor for Climate Zone 3 to read “0.35”.

Table R402.1.4 EQUIVALENT U-FACTORS is amended by amending the Fenestration U-Factor for Climate Zone 3 to read “0.35”.

Section R402.3.2 is amend by adding a paragraph and table following the “Exception” to read as follows:

Where vertical fenestration is shaded by an overhang, eave, or permanently attached shading device, the SHGC required in Table R402.1.2 shall be reduced by using the multipliers in Table R402.3.2 SHGC Multipliers for Permanent Projections.

Table R402.3.2 SHGC Multipliers for Permanent Projections ^a

Projection Factor	SHGC Multiplier (all Other Orientation)	SHGC Multiplier (North Oriented)
0 - 0.10	1.00	1.00
>0.10 – 0.20	0.91	0.95
>0.20 – 0.30	0.82	0.91
>0.30 – 0.40	0.74	0.87
>0.40 – 0.50	0.67	0.84
>0.50 – 0.60	0.61	0.81
>0.60 – 0.70	0.56	0.78
>0.70 – 0.80	0.51	0.76
>0.80 – 0.90	0.47	0.75
>0.90 – 1.00	0.44	0.73

^a North oriented means within 45 degrees of true north.

Section R402.4.1.2 (N1102.4.1.2) is amended by adding the following at the end of the section:

Mandatory testing shall only be performed by individuals that are certified to perform air infiltration testing certified by national or state organizations as approved by the building official. The certified individuals must be an independent third-party entity and may not be employed or have any financial interest in the company that constructs the structure.

Section R402.4.1 is amended by adding Section R402.4.1.3 (N1102.4) and Table R402.4.1.3 (N1102.4.1.3) to read as follows:

R402.4.1.3 (N1102.4.1.3) Testing option – ACH tradeoff. As an option to the air leakage rate set out in Section R402.4.1.2 (N1102.4.1.2), 1- and 2-family homes meeting all of the listed criteria below and the *thermal envelope* requirements in Table R402.4.1.3 (N1102.4.1.3) will be considered compliant when tested and verified as having an air leakage rate to not less than or equal to four air changes per hour when tested and reported in accordance with the testing standards and reporting criteria listed in Section R402.4.1.2 (N1102.4.1.2).

The compliance equivalency is limited as follows:

1. Limited to a conditioned floor area between 1,000 and 6,000 square feet,
2. Limited to between 2 to 6 bedrooms,
3. Assumes all ductwork and mechanical equipment is located in the unconditioned attic,
4. Assumes typical wood framing in the walls and roof, and

5. Assumes one of the following heating/cooling systems:
 - a. All electric system with a heat pump for heating, or
 - b. A system with electric cooling and natural gas heating.

Dwellings using electric resistance strip heating do not qualify for this tradeoff.

TABLE R402.4.1.3 (N1102.4.1.3)^a

Envelope Component	Option #1	Option #2
R402.4 Air Leakage	≤ 4 ACH50	≤ 4 ACH50
Wall Insulation <i>R</i> -value	$R13 + R3^b$	$R13 + R3^b$
Fenestration <i>U</i> -factor	\leq	≤ 0.32
Fenestration SHGC	\leq	≤ 0.25
Ceiling <i>R</i> -value	\geq	$\geq R49$
Duct Insulation <i>R</i> -value	R8	R6
Radiant Barrier Required	No	Yes

^a Except for the values listed in the table, all other mandatory code provisions are applicable.

^b The first value listed is the *R*-value of cavity insulation, the second value is the *R*-value of the continuous insulation or insulated siding.

Section R402.4.1 is amended by adding Sections R402.4.1.4 and R402.4.1.5 to read as follows:

R402.4.1.4 Testing options for R2 multifamily dwelling units. As an option to the air leakage rate set out in Section R402.4.1.2, multifamily dwelling units will be considered compliant when tested and verified as having an air leakage rate to the air leakage rate set out in either Section R402.4.1.4.1 or Section R402.4.1.4.2 when tested and reported in accordance with the testing standards and reporting criteria listed in Section R402.4.1.2

R402.4.1.4.1 Total air leakage rate for interior multifamily dwelling units. Interior multifamily dwelling units with a measured, “unguarded” total air leakage result of 5.3 ACH50 or less shall be considered compliant.

R402.4.1.4.2 Total air leakage rate for corner multifamily dwelling units. Corner multifamily units with a measured, “unguarded” total leakage result of less than 5.0 ACH50 shall be considered compliant.

R402.4.1.5 Sampling options for R2 multifamily dwelling units. For buildings having three or more dwelling units, a minimum of 15% of the dwelling units in each building must be tested as required by Section R402.4.1.2. Prior to beginning sampling for testing, “Initial Testing” is required for each multifamily property. “Initial Testing” shall consist of the 3rd party testing contractor performing the required tests on at least three consecutive dwelling units. Test results from the “Initial Testing” must satisfy minimum

code requirements before sampling is permitted. Dwelling units selected for the “Initial Testing” must be within the same building. Dwelling units selected for “Initial Testing” shall not be included in a “sample group” or counted toward the minimum 15% of dwelling units tested. The building official shall randomly select the three dwelling units for “Initial Testing.” The building official may delegate the random selection to the designated 3rd party testing contractor.

R402.4.1.5.1 Sample group Identification and Sampling. The builder shall identify a "sample group" which may be a building, floor, fire area or portion thereof. All of the dwelling units within the “sample group” must be at the same stage of construction and must be ready for testing. The building official shall randomly select at least 15% of dwelling units from each “sample group” for testing. The building official may delegate the random selection to the designated 3rd party testing contractor.

If each tested dwelling unit within a “sample group” meets the minimum code requirements, then all dwelling units in the “sample group” are considered to meet the minimum code requirements.

Before a building may be deemed compliant with the testing as required, each “sample group” must be deemed compliant with the minimum code requirements. The sum total of all of the tested dwelling units across all “sample groups” shall not be less than a minimum of 15% of the dwelling units in a building.

R402.4.1.5.2 Failure to Meet Code Requirement(s). If any dwelling units within the identified “sample group” fail to meet a code requirement as determined by testing, the builder will be directed to correct the cause(s) of failure, and 30% of the remaining dwelling units in the “sample group” will be randomly selected for testing by the building official, or third-party testing contractor, regarding the specific cause(s) of failure.

If any failures occur in the additional dwelling units, all remaining dwelling units in the sample group must be individually tested for code compliance.

A multifamily property with three failures within a 90-day period is no longer eligible to use the sampling protocol in that community or project until successfully repeating "Initial Testing." Sampling may be reinstated after at least three consecutive dwelling units are individually verified to meet all code requirements.

A Certificate of Occupancy may not be issued for any building until testing has been performed and deemed to satisfy the minimum code requirements on the dwelling unit(s) identified for testing.

Section R403.3.3 is amended by adding the following at the end of the section:

Mandatory testing shall only be performed by individuals that are certified to perform duct testing leakage testing certified by national or state organizations as approved by the building official. The certified individuals must be an independent third-party entity, and may not be employed; or have any financial interest in the company that constructs the structure.

Section R403.3.4 is amended by adding Section 40.3.4.1 to read as follows:

R403.3.4.1 Sampling options for R2 multifamily dwelling units. For buildings having three or more dwelling units, a minimum of 15% of the dwelling units in each building must be tested as required by Section R403.3.3. Prior to beginning sampling for testing, “Initial Testing” is required for each multifamily property. “Initial Testing” shall consist of the 3rd party testing contractor performing the required tests on at least three consecutive dwelling units. Test results from the “Initial Testing” must satisfy minimum code requirements before sampling is permitted. Dwelling units selected for the “Initial Testing” must be within the same building. Dwelling units selected for “Initial Testing” shall not be included in a “sample group” or counted toward the minimum 15% of dwelling units tested. The building official shall randomly select the three dwelling units for “Initial Testing.” The building official may delegate the random selection to the designated 3rd party testing contractor.

R403.3.4.1.1 Sample group Identification and Sampling. The builder shall identify a "sample group" which may be a building, floor, fire area or portion thereof. All of the dwelling units within the “sample group” must be at the same stage of construction and must be ready for testing. The building official shall randomly select at least 15% of dwelling units from each “sample group” for testing. The building official may delegate the random selection to the designated 3rd party testing contractor.

If each tested dwelling unit within a “sample group” meets the minimum code requirements, then all dwelling units in the “sample group” are considered to meet the minimum code requirements.

Before a building may be deemed compliant with the testing as required, each “sample group” must be deemed compliant with the minimum code requirements. The sum total of all of the tested dwelling units across all “sample groups” shall not be less than a minimum of 15% of the dwelling units in a building.

R403.3.4.1.2 Failure to Meet Code Requirement(s). If any dwelling units within the identified “sample group” fail to meet a code requirement as determined by testing, the builder will be directed to correct the cause(s) of failure, and 30% of the remaining dwelling units in the “sample group” will be randomly selected for testing by the building official, or third-party testing contractor, regarding the specific cause(s) of failure.

If any failures occur in the additional dwelling units, all remaining dwelling units in the sample group must be individually tested for code compliance.

A multifamily property with three failures within a 90-day period is no longer eligible to use the sampling protocol in that community or project until successfully repeating "Initial Testing." Sampling may be reinstated after at least three consecutive dwelling units are individually verified to meet all code requirements.

A Certificate of Occupancy may not be issued for any building until testing has been performed and deemed to satisfy the minimum code requirements on the dwelling unit(s) identified for testing.

Section C402.2/R402.2 (N1102.2) is amended by adding Section C402.2.8 and R402.2.14 (N1102.2.14) to read as follows:

Section C402.2.8/R402.2.14 (N1102.2.14) Insulation installed in walls. Insulation installed in walls shall be totally enclosed on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing or other equivalent material approved by the building official.

Section C403.7.4 is amended by adding Exception #12 to read as follows:

12. Individual ventilation systems that serve an individual dwelling unit or sleeping unit.

Section C403.11.1 is amended by adding the following at the end of the section:

Environmental ducts and plenums installed in vertical chases, both supply and exhaust, where the ducts or plenums will not be accessible after construction completion, shall be leak tested in accordance with the SMACNA HVAC Air Leakage Test Manual to the installed ductwork class and pressure requirements.

Documentation shall be furnished demonstrating that representative sections totaling not less than 25 percent of the duct area have been tested and that all tested sections comply with the requirements of this section.

Section R404.1 (N1104.1) is amended to read in its entirety as follows:

Section R404.1 (N1104.1) Lighting equipment (Mandatory). Not less than 75 percent of the lamps in permanently installed lighting fixtures or not less than 75 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.

Section R405.2 (N1105.2) is amended to read as follows:

Section 405.2 (N1105.2) Mandatory requirements. Compliance with the section requires that the mandatory provisions identified in Section 401.2 be met. Supply and

return ducts not completely inside the building thermal envelope shall be insulated to an R-value of not less than R-6.

Exceptions:

1. For one and two family dwellings the maximum envelope leakage of 4 ACH50 is permitted provided the envelope leakage in the Standard Reference Design is 3 ACH50 and all other requirements of Section R405 are met, including all other mandatory measures. The annual energy cost or source energy usage of the Proposed Design must be equal to or less than that of the Standard Reference Design.
2. For multifamily or townhomes and buildings classified as Group R2 and Group R4 of three stories or less the maximum envelope leakage of less than 5 ACH50 is permitted provided the envelope leakage in the Standard Reference Design is 3 ACH50 and all other requirements of Section R405 are met, including all other mandatory measures. The annual energy cost or source energy usage of the Proposed Design must be equal to or less than that of the Standard Reference Design.

Section 405.6.2 is amended by add the following sentence to the end of paragraph:

Acceptable performance software simulation tools may include, but are not limited to, REM Rate™, Energy Gauge and IC3. Other performance software programs accredited by RESNET BESTEST and having the ability to provide a report as outlined in R405.4.2 may also be deemed acceptable performance simulation programs and may be considered by the building official.

Section C405.9 is deleted.

TABLE R406.4 is amended to read as follows:

**TABLE R406.4 (N1106.4)¹
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
3	65

¹ This table is effective until August 31, 2019.

**TABLE R406.4 (N1106.4)²
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
3	63

² The table is effective from September 1, 2019, to August 31, 2022.

**TABLE R406.4 (N1106.4)³
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
3	59

³ This table is effective on or after September 1, 2022.

Section C408.3.1 is amended to read as follows:

C408.3.1 Functional Testing. Prior to passing final inspection, the *registered design professional or approved agency* shall provide evidence that the lighting control systems have been tested to ensure that control hardware and software are calibrated, adjusted, programmed, and in proper working condition in accordance with the *construction documents* and manufacturer’s instructions. Functional testing shall be in accordance with Sections C408.3.1.1 through C408.3.1.3 for the applicable control type.

SECTION 2. Except as provided in Section 1 of this Ordinance, all provisions of the Ordinances of the City of Farmers Branch, Texas, in conflict with the provisions of this ordinance be, and the same are hereby, repealed, and all other provisions of the Ordinances of the City not in conflict with the provisions of this ordinance shall remain in full force and effect.

SECTION 3. An offense committed before the effective date of this ordinance is governed by prior law and the provisions of the Code of Ordinances, as amended, in effect when the offense was committed, and the former law is continued in effect for this purpose.

SECTION 4. Should any sentence, paragraph, subdivision, clause, phrase or section of this Ordinance be adjudged or held to be unconstitutional, illegal or invalid, the same shall not affect the validity of this Ordinance as a whole, or any part or provision thereof other than the part so decided to be invalid, illegal or unconstitutional, and shall not affect the validity of the Ordinance as a whole.

SECTION 5. Any person, firm or corporation violating any of the provisions or terms of this Ordinance shall be punished by a fine not to exceed the sum of Two Thousand Dollars (\$2,000) for each offense; and each and every day such violation shall continue shall be deemed to constitute a separate offense as set forth in Section 1-14 of the Code of Ordinances.

SECTION 6. This ordinance shall take effect on INSERT EFFECTIVE DATE, following its passage and publication in accordance with the provisions of the charter and state law.

**PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF FARMERS
BRANCH, TEXAS, THIS ___ DAY OF _____ 2023.**

ATTEST:

APPROVED:

Stacy Henderson, City Secretary

_____, Mayor

APPROVED AS TO FORM:

Peter G. Smith, City Attorney
(kbl:4/18/2023:134611)