

## Amendments to the 2006 International Residential Code

### **Chapter 1, Administration**

#### **Subsection R102.4, Referenced codes and standards; is changed to read as follows:**

The Codes, when specifically adopted, and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference made to NFPA 70 or the ICC *Electrical Code* shall mean the Electrical Code as adopted.

Where differences occur between provisions of this Code and referenced Codes and standards, the provisions of this code shall apply.

*Exception:* Where enforcement of a Code provision would violate the conditions of the listing of the equipment or appliance, the conditions of the listing and manufacturer's instructions shall apply.

#### **Subsection R104.2, Applications and permits; is amended by the addition of Subsection R104.2.1.**

##### **Subsection R104.2.1, Adequate toilet facilities.**

Every construction project requiring a building permit within the City limits of the City of Murphy shall have adequate toilet facilities for workers associated with the project.

At least one permanent or temporary toilet facility shall be maintained in each subdivision for the employees or subcontractors of each builder holding a permit for a building in that subdivision. A toilet facility must be provided by each builder as long as the builder holds an active building permit in the subdivision.

Permanent toilet facility is defined as a room in an existing building or in the building being constructed with a water closet installed in such a room, which conforms to the *Plumbing Code* and is continuously available to all workers involved in a construction project.

Temporary toilet facility is defined as a portable, fully enclosed, chemically sanitized toilet, which is serviced and cleaned at least once each week.

In addition to the justifications in the *Building Code* and in addition to other remedies, the building official may issue a Stop Work Order as described in the *Building Code* for any work done on a project not in compliance with this section.

#### **Subsection R105.2, Work exempt from permit, items number 1, number 2 and number 5; are deleted in their entirety, and remaining numbers are renumbered accordingly.**

#### **Subsection R105.3, Application for permit; is amended by the addition of the following paragraphs:**

Registration:

- a. To obtain a permit the applicant shall be registered as a contractor.

*Exception:* Homeowners may obtain permits to do work at their residence without being registered.

- b. Registration Requirements: Contractor may register by making application on forms provided by the Building Official. Electrical, irrigation, mechanical, and plumbing contractors shall provide proof of required licenses.

Licenses:

Electrical license is a license issued by the State of Texas under provisions of title 8, Occupations Code, Chapter 1305, Administered by the Texas Department of Licensing and Regulation.

Mechanical license is authorization issued by the State of Texas allowing an individual to install air conditioning, heating and ventilating systems or their components.

Plumbing license is a license issued by the State of Texas under the provisions of Article 6243.101, Vernon's Texas Civil Statutes, as amended, (known as "The Plumbing License Law of 1974").

- c. Revocation/Suspension: A contractor's registration may be suspended for the following causes:
  - 1. The contractor fails to finalize permits by obtaining the required, approved inspections.
  - 2. The contractor allows use or occupancy of a structure for which a permit was obtained without first obtaining the required authorization.
  - 3. The contractor has been found by the Building and Fire Codes Appeal Board to have been grossly negligent in the performance of his/her work. For purposes of this Section, a contractor may be found to have acted in a grossly negligent manner if such contractor has received six (6) municipal court convictions for city code violations and if such violations occurred in the twelve (12) month period preceding the revocation/suspension action before the Commission.
  - 4. Expiration, suspension or revocation of required license, bond or insurance.

**Section R105, is amended by the addition of Subsection R105.9 to read as follows:**

**Subsection R105.9, Withdrawn Permits.** Permits may be withdrawn by the applicant if no work has commenced on the project. Permit fees exceeding \$50.00 may be partially refunded. Where applicable, fees will be refunded at 80 percent of their original value, excluding the plan review and fire protection plan review deposits.

Permits for which work has commenced may not be withdrawn unless a subsequent permittee has obtained a permit to complete the work, or when work has started unless an inspection has been made and the Building Official has determined that the existing work has created no violation of any code or ordinance.

Expired permits may be withdrawn if determined by the Building Official that no work has commenced.

Withdrawn permits with fees of fifty (\$50) dollars or less are nonrefundable.

**Subsection R106.1, Submittal documents; is amended by the addition of the following paragraph:**

Foundation plans shall be submitted with each application. These plans shall be designed by an engineer licensed by the State of Texas and shall bear that engineer's seal.

*Exception:* These plans shall not be required for Group U Occupancies when not attached to another occupancy, other than those which are required by separate ordinance.

All structural plans for residential buildings in excess of 7,000 square feet in area shall be designed by an engineer licensed by the State of Texas and shall bear that engineer's seal.

**Subsection R106.3.1, Approval of construction documents; is changed to read as follows:**

When the building official issues a permit, the construction documents shall be approved, in writing, or by a stamp which states "APPROVED AND APPROVED AS NOTED BY THE BUILDING OFFICIAL" {the remainder of the section is unchanged}

**Subsection R109.1.3, Floodplain inspections; is changed to read as follows:**

For construction permitted in areas prone to flooding as established by Table R301.2(1), upon placement of the lowest floor, including basement, and prior to further vertical construction, the building official may require submission of documentation, prepared and sealed by a registered design professional of the elevation of the lowest floor, including basement, required in Section R324.

**Subsection R110 (R110.1 through R110.4); are deleted in its entirety.**

**Section R112, Board of Appeals;** is changed so that the Section title shall read "Building and Fire Codes Appeal Board."

**Subsection R112.2.1, Determination of substantial improvement in areas prone to flooding;** is deleted in its entirety.

**Subsection R112.2.2, Criteria for issuance of a variance of areas prone to flooding;** is deleted in its entirety.

**Subsection R112.3, Qualifications;** deleted in its entirety

**Subsection R114, Stop Work Order; is amended by the addition of Subsection R114.3, to read as follows:**

**Subsection R114.3, Construction debris**

a. Whenever work is being done that is authorized by a permit, and construction debris from that work is not confined to a container or to a site on the property approved by the Building Official or his designee, and such construction debris poses a threat to public health, safety and comfort so that it constitutes a nuisance, the Building Official or his designee may order the work stopped and the Contractor shall clean up the construction debris within thirty-six (36) hours of receiving written notice of the violation. After the expiration of the thirty-six (36) hour period, Contractor shall pay City a fifty dollar (\$50.00) reinspection fee to offset costs incurred by City due to the necessary reinspection before the stop work order is lifted.

b. Upon the issuance of the first stop work order by City pursuant to 114.3(a), the Contractor responsible for the job site where the violation occurred shall clean up such debris within thirty-six (36)

hours of notice and shall pay City a fifty dollar (\$50.00) reinspection fee to offset costs incurred by City due to the necessary reinspection before the stop work order is lifted.

c. Upon issuance of the second stop work order at the specific job site because of a violation of this section pursuant to 114.3(a), the Contractor responsible for the job site shall clean up the debris causing the violation within thirty-six (36) hours, pay City a fifty dollar (\$50.00) reinspection fee to reimburse City for all costs incurred due to the necessary reinspection, and shall post a five hundred dollar (\$500.00) clean-up deposit for the job site before the stop work order is lifted. If a Contractor objects to posting such clean-up deposit, Contractor may, within five (5) days after receiving notice of the second violation at a specific job site, appeal that requirement to the Building Official. The decision of the Building Official shall be final. Interest shall not accrue on a deposit posted pursuant to this Subsection.

d. Upon issuance of a third stop work order at a job site pursuant to 114.3(a) above, the Contractor responsible for the job site shall clean up the debris causing the violation within thirty-six (36) hours and shall pay a fifty dollar (\$50.00) reinspection fee. If Contractor fails to remedy the violation within such thirty-six (36) hour period, City may, at its option, clean up the debris on the job site or cause such debris on the job site to be cleaned up. If City exercises its option hereunder, Contractor shall forfeit all or a portion of its five hundred dollar (\$500.00) deposit posted pursuant to 114.3(c) for the job site at which the violation occurred.

e. The amount deducted from a Contractor's deposit pursuant to 114.3(d) shall be based upon the costs incurred by City for the cleaning of the job site and shall be an amount sufficient to reimburse City for costs incurred due to the violation. All evidence of the existence of a violation upon a job site shall be retained by the Building Inspection Department, and prior to deducting any amount for the Contractor's deposit for a job site, the Building Official or his designee shall submit to the contractor copies of all evidence establishing the existence of the violation for which the deduction was taken. If Contractor objects, to such deduction from its such clean-up deposit, Contractor may, within five (5) days after receiving notice of the deduction, appeal to the Building Official. The decision of the Building Official shall be final.

f. Upon forfeiture of all or a portion of Contractor's initial five hundred dollar (\$500.00) deposit for a job site. Contractor shall be required to post an amount sufficient to maintain a five hundred dollar (\$500.00) clean-up deposit for the job site or to post an additional five hundred dollar (\$500.00) clean-up deposit when the costs of clean-up for the job-site are equal to or in excess of \$500.00 before the stop-work order at the job site will be lifted by the Building Official.

g. A Contractor that is required hereunder to post a five hundred dollar (\$500.00) deposit for a job site pursuant to 114.3(c) above, shall be required to maintain such deposit with the City until completion of work at the job site.

h. As used herein, the term "Construction Debris" shall include all materials utilized in the construction process, including all litter and debris deposited and left remaining upon the premises of a job site by a Contractor, Subcontractor, and their employees, agents, and assigns.

i. As used herein "Costs" shall mean all expense incurred by City for the cleaning of the job site and the amount of any unpaid municipal court fine.

## **Chapter 2, Definitions**

### **Section R202, definition of "Glazing Area" is changed to read as follows:**

Total area of the glazed fenestration measured using the rough opening and including sash, curbing, or other framing elements that enclose conditioned space. Glazing area includes the area of glazed fenestration assemblies in walls bounding conditioned basements. For doors where the daylight opening area is less than 50 percent of the door area, the glazing area is the daylight opening area. For

all other doors, the glazing area is the rough opening area for the door including the door and the frame.

**Section R202, definition of "Townhouse"; is changed to read as follows:**

A single-family dwelling unit constructed in a group of attached units separated by property lines in which each unit extends from foundation to roof and with open space on at least two sides.

**Section R202, add definition of "Floor Area, Gross" as follows;**

The floor area within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and courts, without deduction for corridors, stairways, closets, the thickness of interior walls, columns, or other features. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include shafts with no openings or interior courts

**Section R202; add definition of "Recreation Room" as follows;**

A room in a dwelling unit, which is intended for such uses as viewing television or films, listening to recordings, or participating in video or similar games. The area of this room is not to exceed one-tenth of the floor area of the habitable space of the dwelling unit.

**Chapter 3, Building Planning**

**Table R301.2(1), Climatic and Geographic Design Criteria; is filled in as follows:**

GROUND SNOW LOAD	WIND SPEED <sup>ed</sup> (mph)	SEISMIC DESIGN CATEGORY <sup>9h</sup>		
5 lb/ft <sup>2</sup>	90 (3-sec-gust)/75 fastest mile	A		
SUBJECT TO DAMAGE FROM				
Weathering <sup>a</sup>	Frost line depth <sup>b</sup>	Termite <sup>c</sup>	Decay <sup>d</sup>	
moderate	6"	very heavy		
WINTER DESIGN TEMP <sup>fe</sup>	ICE SHIELD UNDER-LAYMENT REQUIRED <sup>ih</sup>	FLOOD HAZARDS <sup>hg</sup>	AIR FREEZING INDEX <sup>ji</sup>	MEAN ANNUAL TEMP <sup>ki</sup>
22°F	No	local code	69	64.9°F

**Section R302 Exterior Wall Location is amended with the addition of the following subsection R302.1.1.**

**R302.1.1 Encroachments:** In town homes and patio homes, roof overhangs not exceeding two feet in width, and brick ledges, which support exterior veneer walls not exceeding six inches in width, may project onto an adjoining property where an easement is provided for this specific purpose.

**Subsection R303.3, Bathrooms; exception; is changed to read as follows:**

*Exception:* The glazed areas shall not be required where artificial light and a mechanical ventilation system, complying with one of the following, are provided:

1. The minimum ventilation rates shall be 50 cfm (24 L/s) for intermittent ventilation or 20 cfm (10 L/s) for continuous ventilation. Ventilation air from the space shall be exhausted directly to the outside.
2. Bathrooms that contain only a water closet, lavatory or combination thereof may be ventilated with an approved mechanical recirculating fan or similar device designed to remove odors from the air.

**Subsection R303.8, Required heating; is changed to read as follows:**

Every dwelling unit shall be provided with heating facilities capable of maintaining a minimum room temperature of 68°F (20°C) at a point 3 feet (914 mm) above the floor and 2 feet (610 mm) from exterior walls in all habitable rooms at the design temperature.

**Subsection R311.2.2; change to read as follows:**

**R311.2.2 Under stair protection.** Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 5/8-inch (15.8 mm) fire-rated gypsum board or one-hour fire-resistive construction.

**Subsection R311.5.6.3 Handrail grip size; is changed to read as follows:**

The handgrip portion of handrails shall have a circular cross section of 1 ¼ inches (32 mm) minimum to 3 1/8 inches (80 mm) maximum. Other handrail shapes that provide an equivalent grasping surface are permissible. Edges shall have a minimum radius of 1/8-inch (3.2 mm).

**Subsection R313.2 Locations; is amended with the addition of the following location:**

4. Recreation/Media Rooms. Recreation/Media rooms shall be provided with a strobe, listed as a visible notification appliance in accordance with NFPA 72.

**Section R313 Smoke Alarms; is amended with the addition of the following subsection R313.4 Carbon Monoxide Detector:**

A Carbon Monoxide detector shall be installed in new dwelling units. The detector may be omitted where there are neither fuel burning appliances nor an attached garage. The detectors may be either hard-wired or battery operated. Carbon Monoxide detectors shall be installed in accordance with their listing.

**Subsection R317.1, Two Family Dwellings; is amended by the addition of a third exception as follows:**

Exceptions:

3. Two-family dwelling units that are also divided by a property line through the structure shall be separated as required for townhouses.

***Subsection R318.1, Moisture control; is changed in its entirety to read as follows:***

In all framed walls, floors and roof/ceilings comprising elements of the building thermal envelope, a vapor retarder, when installed, shall be installed in a manner so as to not trap moisture.

***Subsection R321.1, Premises Identification; is changed to read in its entirety as follows:***

Approved numerals of minimum three (3) inches height and of a color contrasting with the background designating address shall be placed on all new and existing buildings or structures in such a position as to be plainly visible and legible from the street or road fronting the property and from all rear alleyways where said alleyways exist.

***Section R324.1; change to read as follows:***

***R324.1 General.*** Buildings and structures, when permitted to be constructed in flood hazard areas . . . {bulk of section unchanged} . . . shall be designed and constructed as required in accordance with the provisions contained in this section or by other local provisions as applicable.

***Chapter 3, Building Planning; is amended by the addition of Section R325.***

***Section R325, Automatic Sprinkler Systems.*** An automatic sprinkler system shall be installed in all new buildings 6,000 square feet and greater, and in all existing buildings that are enlarged to be 6,000 square feet or greater, and in building greater than 6,000 square feet which are enlarged. Only gross floor area within the exterior walls shall be used to calculate the building area.

*Exception:* The floor areas of covered patios and porches open entirely on at least one side, except for guardrails, need not be included in the calculation of the area of the building.

***Chapter 6, Wall Construction***

***Subsection R602.6, Drilling and notching – studs; is amended by the addition of a sentence to read as follows:***

Studs that are drilled or notched for plumbing pipes shall be a minimum of 2x6 studs.

***Chapter 7, Wall Covering***

***Subsection R703.7.2 Exterior Veneer Support; is amended by the addition of a second paragraph to read as follows:***

The maximum height of masonry veneer supported by wood or cold-formed steel shall not exceed (twenty-five) 25 feet. A licensed professional engineer's design with a detail is required on all brick on wood/steel installations exceeding (five) 5 square feet, to verify the requirements of this section.

***Subsection R703.7.4.1, Size and Spacing; is amended by the addition of a second paragraph to read as follows:***

For 2.67 square feet (0.248 m<sup>2</sup>) of wall area, the following dimensions shall be adhered to:

1. When ties are placed on studs 16" o.c., they shall be spaced no further apart than 24" vertically starting approximately 12" from the foundation.
2. When ties are placed on studs 24" o.c., they shall be spaced no further apart than 16" vertically starting approximately 8" from the foundation.

**Subsection R703.7.4.3, Mortar or grout fill; is amended by the addition of a second paragraph to read as follows:**

When using ties that will flex when pushed, spot bedding of cement mortar shall be installed on all ties.

## **Chapter 9, Roof Assemblies**

**Section R902; is amended by the addition of Subsection R902.3, to read as follows:**

**Subsection R902.3, Minimum Roof Class.** All roof coverings shall be a minimum Class C. All individual replacement shingles or shakes shall be a minimum Class C.

*Exception:* Non-classified roof coverings shall be permitted on buildings of U occupancies having not more than 120 sq. ft. of projected roof area. When exceeding 120 sq. ft. of projected roof area, buildings of U occupancies may use non-rated non-combustible coverings.

**Subsection R905.1, Roof covering applications; is amended by the addition of the following paragraphs:**

Roof systems in place prior to January 18, 1988, may be repaired with roof coverings of the same type as the original roof when all the following conditions are met:

1. The repair does not exceed twenty-five (25) percent of the roof.
2. The repair does not result in an increase in the total surface area of the roof.
3. Repairs shall not exceed (twenty-five) (25) percent of the roof surface area within any twelve month period unless Class C or better roof covering is provided.

Shingles and shakes shall be applied to roofs with solid sheathing. Existing roofs may be replaced over spaced sheathing. When spaced sheathing is used, sheathing boards shall not be less than 1-inch by 4-inches (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners. When 1-inch by 4-inch (25 mm by 102 mm) spaced sheathing is installed at 10 inches (254 mm) on center, additional 1-inch by 4-inch (25 mm by 102 mm) boards must be installed between the sheathing boards.

**Subsection R905.7.1 Deck Requirements; is changed to read as follows:**

Wood shingles shall only be installed on solid sheathing except as allowed for existing roofs in subsection R905.1.

**Subsection R905.8.1 Deck Requirements; is changed to read as follows:**

Wood shakes shall only be installed on solid sheathing except as allowed for existing roofs in subsection R905.1.

**Subsection R907.1, General; is amended by the addition of a second paragraph to read as follows:**

All individual replacement shingles or shakes shall comply with Section R902.3. Repairs exceeding twenty-five (25) percent of the roof surface area within any twelve month period require a building permit.

**Chapter 11, Energy Efficiency**

**Subsection N1102.2.1, Warm humid counties.** Warm humid counties are listed in Table N1101.2.1 and Table N1102.2.2

**TABLE N1102.2.2 WARM HUMID COUNTIES FOR TEXAS**

ANDERSON	2.2	DUVAL	2.1	KAUFMAN	3.2	RED RIVER	3.2
ANGELINA	2.2	EDWARDS	2.2	KENDALL	3.1	REAL	2.2
ARANSAS	2.1	ELLIS	3.2	KENEDY	2.1	REFUGIO	2.1
ATASCOSA	2.1	ERATH	3.2	KINNEY	2.2	ROBERTSON	2.2
AUSTIN	2.2	FALLS	2.2	KLEBERG	2.1	ROCKWALL	3.2
BANDERA	2.2	FAYETTE	2.2	LA SALLE	2.1	RUSK	3.2
BASTROP	2.2	FORT BEND	2.2	LAMAR	3.2	SABINE	3.2
BEE	2.1	FRANKLIN	3.2	LAMPASAS	3.2	SAN AUGUSTINE	3.2
BELL	2.2	FREESTONE	2.2	LAVACA	2.2	SAN JACINTO	2.2
BEXAR	2.2	FRIO	2.1	LEE	2.2	SAN PATRICIO	2.1
BLANCO	3.1	GALVESTON	2.1	LEON	2.2	SAN SABA	3.2
BOSQUE	2.2	GILLESPIE	3.1	LLANO	3.1	SHELBY	3.2
BOWIE	3.2	GOLIAD	2.1	LIBERTY	2.2	SMITH	3.2
BRAZORIA	2.1	GONZALES	2.2	LIMESTONE	2.2	STARR	2.1
BROWN	3.2	GREGG	3.2	LIVE OAK	2.1	SOMMERVELL	3.2
BRAZOS	2.2	GRIMES	2.2	MADISON	2.2	TARRANT	3.2
BROOKS	2.1	GUADALUPE	2.2	MARION	3.2	TITUS	3.2
BURLESON	2.2	HAMILTON	3.2	MATAGORDA	2.1	TRAVIS	2.2
BURNET	3.1	HARDIN	2.2	MAVERICK	2.1	TRINITY	2.2
CALDWELL	2.2	HARRIS	2.2	MCLENNAN	2.2	TYLER	2.2
CALHOUN	2.1	HARRISON	3.2	MCMULLEN	2.1	UPSHUR	3.2
CAMERON	2.1	HAYS	2.2	MEDINA	2.2	UVALDE	2.2
CHAMBERS	2.2	HENDERSON	3.2	MILAM	2.2	VAL VERDE	2.2
CAMP	3.2	HIDALGO	2.1	MILLS	3.2	VAN ZANDT	3.2
CASS	3.2	HOOD	3.2	MONTGOMERY	2.2	VICTORIA	2.1
CHEROKEE	2.2	HOPKINS	3.2	MORRIS	3.2	WALKER	2.2
COLLIN	3.2	HILL	2.2	NACOGDOCHES	3.2	WALLER	2.2
COLORADO	2.2	HOUSTON	2.2	NAVARRO	3.2	WASHINGTON	2.2
COMAL	2.2	HUNT	3.2	NEWTON	2.2	WEBB	2.1
COMANCHE	3.2	JACKSON	2.1	NUECES	2.1	WHARTON	2.1
CORYELL	2.2	JASPER	2.2	ORANGE	2.2	WILLACY	2.1
DALLAS	3.2	JEFFERSON	2.2	PALO PINTO	3.2	WILLIAMSON	2.2
DELTA	3.2	JIM HOGG	2.1	PANOLA	3.2	WILSON	2.2
DENTON	3.2	JIM WELLS	2.1	PARKER	3.2	WOOD	3.2
DE WITT	2.1	JOHNSON	3.2	POLK	2.2	ZAPATA	2.1
DIMMIT	2.1	KARNES	2.1	RAINS	3.2	ZAVALA	2.1

**Subsection N1101.7; is changed to read as follows:**

**N1101.7 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.

**\*\*\*Amend Figure N1101.2 to read as follows:**

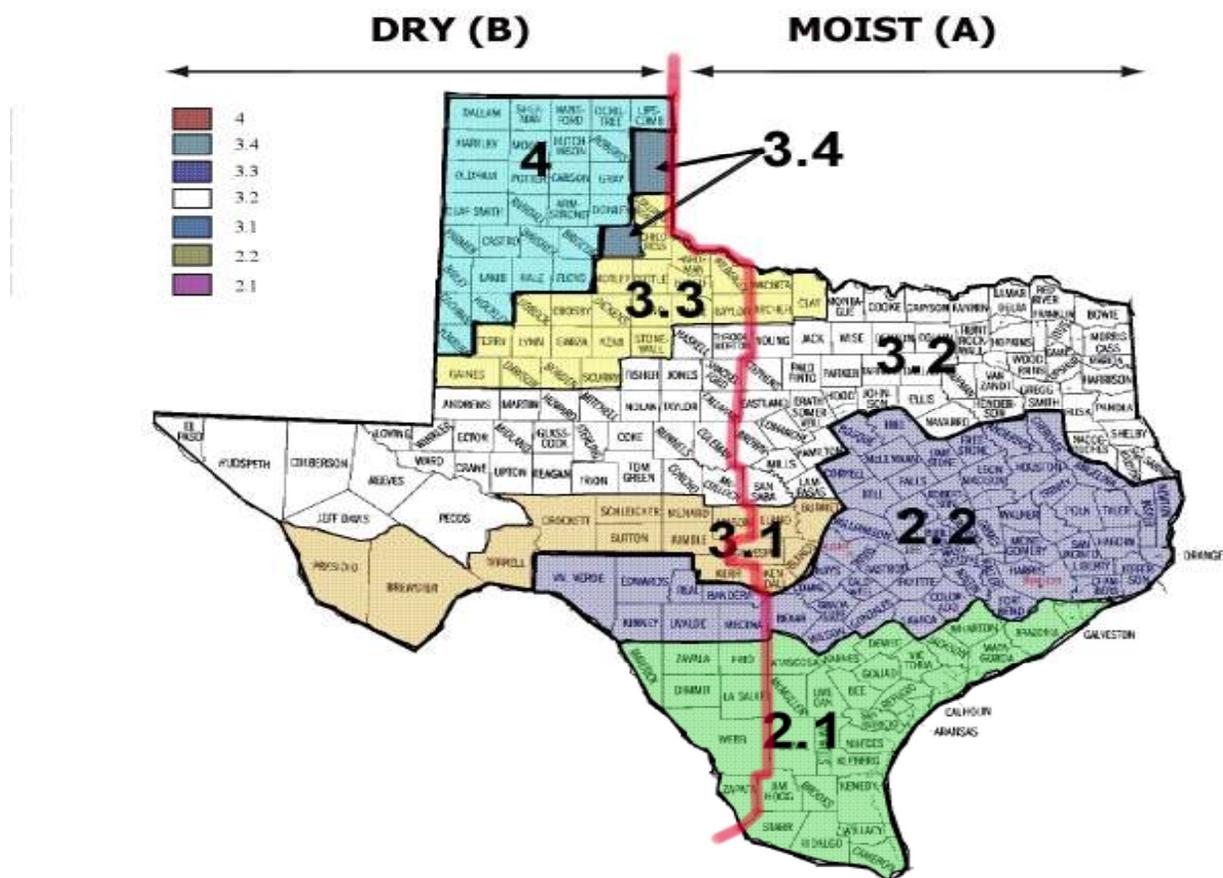


Figure N1101.2 TEXAS CLIMATE ZONES

\*\*\*Add Table N1101.2.1 to read as follows:

**TABLE N1101.2.1 CLIMATE ZONES AND SUB CLIMATE ZONES FOR TEXAS**

**Zone 2**

ANDERSON	2.2	DE WITT	2.1	JIM HOGG	2.1	ORANGE	2.2
ANGELINA	2.2	DIMITT	2.1	JIM WELLS	2.1	POLK	2.2
ARANSAS	2.1	DUVAL	2.1	KARNES	2.1	REAL	2.2
ATASCOSA	2.1	EDWARDS	2.2	KENEDY	2.1	REFUGIO	2.1
AUSTIN	2.2	FALLS	2.2	KINNEY	2.2	ROBERTSON	2.2
BANDERA	2.2	FAYETTE	2.2	KLEBERG	2.1	SAN JACINTO	2.2
BASTROP	2.2	FORT BEND	2.2	LA SALLE	2.1	SAN PATRICIO	2.1
BEE	2.1	FREESTONE	2.2	LAVACA	2.2	STARR	2.1
BELL	2.2	FRIO	2.1	LEE	2.2	TRAVIS	2.2
BEXAR	2.2	GALVESTON	2.1	LEON	2.2	TRINITY	2.2
BOSQUE	2.2	GOLIAD	2.1	LIBERTY	2.2	TYLER	2.2
BRAZORIA	2.1	GONZALES	2.2	LIMESTONE	2.2	UVALDE	2.2
BRAZOS	2.2	GRIMES	2.2	LIVE OAK	2.1	VAL VERDE	2.2
BROOKS	2.1	GUADALUPE	2.2	MADISON	2.2	VICTORIA	2.1
BURLESON	2.2	HARDIN	2.2	MATAGORDA	2.1	WALKER	2.2
CALDWELL	2.2	HARRIS	2.2	MAVERICK	2.1	WALLER	2.2
CALHOUN	2.1	HAYS	2.2	MCLENNAN	2.2	WASHINGTON	2.2
CAMERON	2.1	HIDALGO	2.1	MCMULLEN	2.1	WEBB	2.1
CHAMBERS	2.2	HILL	2.2	MEDINA	2.2	WHARTON	2.1
CHEROKEE	2.2	HOUSTON	2.2	MILAM	2.2	WILLACY	2.1
COLORADO	2.2	JACKSON	2.1	MONTGOMERY	2.2	WILLIAMSON	2.2
COMAL	2.2	JASPER	2.2	NEWTON	2.2	WILSON	2.2
CORYELL	2.2	JEFFERSON	2.2	NUECES	2.1	ZAPATA	2.1

**Zone 3**

ANDREWS	3.2	EL PASO	3.2	KERR	3.1	ROCKWALL	3.2
ARCHER	3.3	ELLIS	3.2	KIMBLE	3.1	RUNNELS	3.2
BAYLOR	3.3	ERATH	3.2	KING	3.3	RUSK	3.2
BLANCO	3.1	FANNIN	3.2	KNOX	3.3	SABINE	3.2
BORDEN	3.3	FISHER	3.2	LAMAR	3.2	SAN AUGUSTINE	3.2
BOWIE	3.2	FOARD	3.3	LAMPASAS	3.2	SAN SABA	3.2
BREWSTER	3.1	FRANKLIN	3.2	LLANO	3.1	SCHLEICHER	3.1
BROWN	3.2	GAINES	3.3	LOVING	3.2	SCURRY	3.3
BURNET	3.1	GARZA	3.3	LUBBOCK	3.3	SHACKELFORD	3.2
CALLAHAN	3.2	GILLESPIE	3.1	LYNN	3.3	SHELBY	3.2
CAMP	3.2	GLASSCOCK	3.2	MARION	3.2	SMITH	3.2
CASS	3.2	GRAYSON	3.2	MARTIN	3.2	SOMERVELL	3.2
CHILDRESS	3.3	GREGG	3.2	MASON	3.1	STEPHENS	3.2
CLAY	3.3	HALL	3.4	MCCULLOCH	3.2	STERLING	3.2
COKE	3.2	HAMILTON	3.2	MENARD	3.1	STONEWALL	3.3
COLEMAN	3.2	HARDEMAN	3.3	MIDLAND	3.2	SUTTON	3.1
COLLIN	3.2	HARRISON	3.2	MILLS	3.2	TARRANT	3.2
COLLINGSWORTH	3.3	HASKELL	3.2	MITCHELL	3.2	TAYLOR	3.2
COMANCHE	3.2	HEMPHILL	3.4	MONTAGUE	3.2	TERRELL	3.1
CONCHO	3.2	HENDERSON	3.2	MORRIS	3.2	TERRY	3.3
COOKE	3.2	HOOD	3.2	MOTLEY	3.3	THROCKMORTON	3.2
COTTLE	3.3	HOPKINS	3.2	NACOGDOCHES	3.2	TITUS	3.2
CRANE	3.2	HOWARD	3.2	NAVARRO	3.2	TOM GREEN	3.2
CROCKETT	3.1	HUDSPETH	3.2	NOLAN	3.2	UPSHUR	3.2
CROSBY	3.3	HUNT	3.2	PALO PINTO	3.2	UPTON	3.2
CULBERSON	3.2	IRION	3.2	PANOLA	3.2	VAN ZANDT	3.2
DALLAS	3.2	JACK	3.2	PARKER	3.2	WARD	3.2
DAWSON	3.3	JEFF DAVIS	3.2	PECOS	3.2	WHEELER	3.4

DELTA	3.2	JOHNSON	3.2	PRESIDIO	3.1	WICHITA	3.3
DENTON	3.2	JONES	3.2	RAINS	3.2	WILBARGER	3.3
DICKENS	3.3	KAUFMAN	3.2	REAGAN	3.2	WINKLER	3.2
EASTLAND	3.2	KENDALL	3.1	RED RIVER	3.2	WISE	3.2
ECTOR	3.2	KENT	3.3	REEVES	3.2	WOOD	3.2
						YOUNG	3.2

**Zone 4**

ARMSTRONG	DEAF SMITH	HOCKLEY	PARMER
BAILEY	DONLEY	HUTCHINSON	POTTER
BRISCOE	FLOYD	LAMB	RANDALL
CARSON	GRAY	LIPSCOMB	ROBERTS
CASTRO	HALE	MOORE	SHERMAN
COCHRAN	HANSFORD	OCHILTREE	SWISHER
DALLAM	HARTLEY	OLDHAM	YOAKUM

**Subsection N1102.1, Insulation and fenestration criteria.** The building thermal envelope shall meet the requirements of Table N1102.1 based on the climate zone specified in Table N1101.2.

When compliance using Table 1102.1 is demonstrated with a ceiling R-value of R30 or less, no more than 33% of the total projected ceiling area may be of cathedral type construction (ceiling joist/rafter assembly) and the required insulation R-value may be reduced to a minimum of R22 insulation when the remaining ceiling area insulation is increased to R38.

**\*\*\*Amend Table N1102.1 to read as follows:**

**TABLE N1102.1**

**INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT (TEXAS)<sup>a</sup>**

CLIMATE - SUB CLIMATE ZONE	MAX GLAZED AREA TO WALL AREA RATIO	MAX GLAZED FENESTRATION U-FACTOR	MAX SKYLIGHT U-FACTOR <sup>b</sup>	MAX GLAZED FENESTRATION SHGC	MIN CEILING R-VALUE	MIN WOOD FRAME WALL R-VALUE <sup>d</sup>	MASS WALL R-VALUE	MIN FLOOR R-VALUE	MIN BASEMENT WALL R-VALUE	MIN SLAB R-VALUE & DEPTH <sup>c</sup>	MIN CRAWL SPACE WALL R-VALUE
2.1	15	0.75	0.75	0.358	19	13	6	19	0	0	5
	20	0.70	0.75	0.38	30	13	6	19	0	0	5
	25	0.65	0.75	0.35	30	13	6	19	0	0	5
	30	0.54	0.75	0.35	38	13	6	19	0	0	5
2.2	15	0.65	0.75	0.38	30	13	6	19	5	0	6
	20	0.65	0.75	0.38	38	13	6	19	6	0	6
	25	0.54	0.75	0.35	38	13	6	19	8	0	10
	30	0.46	0.75	0.35	38	16, 13 + 3.7 <sup>e</sup>	6	19	8	0	10
3.1	15	0.65	0.65	0.40	30	13	6	19	5	0	6
	20	0.55	0.65	0.40	38	13	6	19	5	0	6
	25	0.54	0.65	0.35	38	13	6	19	8	0	10
	30	0.46	0.65	0.35	38	16, 13 + 3.7 <sup>e</sup>	7	19	8	0	10
3.2	15	0.60	0.65	0.40	30	13	6	19	6	0	7
	20	0.54	0.65	0.40	38	13	6	19	6	0	7
	25	0.51	0.65	0.40	38	16, 13 + 3.7 <sup>e</sup>	7	19	6	0	7

	30	0.46	0.65	0.38	38	16, 13 + 3.7 <sup>e</sup>	7	19	6	0	7
3.3	15	0.51	0.65	0.40	30	13	6	19	7	0	8
	20	0.45	0.65	0.40	38	13	6	19	7	0	9
	25	0.40	0.65	0.40	38	16, 13 + 3.7 <sup>e</sup>	7	19	7	0	9
	30	0.40	0.65	0.40	38	19, 13 + 8.1 <sup>e</sup>	9	19	7	0	9
3.4	15	0.45	0.60	NR	38	13	6	19	8	5, 2 ft	11
	20	0.37	0.60	NR	38	13	6	19	8	6, 2 ft	13
	25	0.37	0.60	NR	38	19, 13 + 8.1 <sup>e</sup>	9	19	8	6, 2 ft	13
	30	0.37	0.60	NR	38	19, 13 + 8.1 <sup>e</sup>	9	30	8	6, 2 ft	13
4	15	0.45	0.60	NR	38	13	8	19	8	5, 2 ft	11
	20	0.37	0.60	NR	38	13	8	19	9	6, 2 ft	13
	25	0.37	0.60	NR	38	19, 13 + 8.1 <sup>e</sup>	10	19	9	6, 2 ft	13
	30	0.37	0.60	NR	38	19, 13 + 8.1 <sup>e</sup>	10	30	9	6, 2 ft	13

For SI: 1 foot = 304.8 mm.

- R*-values are minimums. *U*-factors and SHGC are maximums. R-19 shall be permitted to be compressed into a 2 x 6 cavity.
- The fenestration *U*-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- R-5 shall be added to the required slab edge *R*-values for heated slabs.
- The total *R*-value may be achieved with a combination of cavity insulation and insulating sheathing that covers 100% of the exterior wall.
- The wall insulation may be the sum of the two values where the first value is the cavity insulation and the second value is insulating sheathing. The combination of cavity insulation plus insulating sheathing may be used where structural sheathing covers not more than 25% of the exterior wall area and insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of exterior wall area then the wall insulation requirement may only be satisfied with the single insulation value.

\*\*\*Amend Table N1102.1.2 to read as follows:

**TABLE N1102.1.2  
EQUIVALENT U-FACTORS<sup>a</sup>**

CLIMATE - SUB CLIMATE ZONE	MAX GLAZED AREA TO WALL AREA RATIO	MAX GLAZED FENESTRATION U-FACTOR	MAX SKYLIGHT U-FACTOR	MAX CEILING U-FACTOR	MAX WOOD FRAME WALL U-FACTOR	MAX MASS WALL U-FACTOR	MAX FLOOR U-FACTOR	MAX BASEMENT WALL U-FACTOR	MAX CRAWL SPACE WALL U-FACTOR
2.1	15	0.75	0.75	0.039	0.082	0.124	0.047	0.360	0.136
	20	0.70	0.75	0.034	0.082	0.124	0.047	0.360	0.136
	25	0.65	0.75	0.034	0.082	0.124	0.047	0.360	0.136
	30	0.54	0.75	0.030	0.082	0.124	0.047	0.360	0.136
2.2	15	0.65	0.75	0.034	0.082	0.124	0.047	0.210	0.100
	20	0.65	0.75	0.030	0.082	0.124	0.047	0.210	0.100
	25	0.54	0.75	0.030	0.082	0.124	0.047	0.119	0.065
	30	0.46	0.75	0.030	0.071	0.124	0.047	0.119	0.065
3.1	15	0.65	0.65	0.034	0.082	0.124	0.047	0.210	0.100
	20	0.55	0.65	0.030	0.082	0.124	0.047	0.210	0.100
	25	0.54	0.65	0.030	0.082	0.124	0.047	0.119	0.065
	30	0.46	0.65	0.030	0.071	0.112	0.047	0.119	0.065
3.2	15	0.60	0.65	0.034	0.082	0.124	0.047	0.179	0.075
	20	0.54	0.65	0.030	0.082	0.124	0.047	0.179	0.075
	25	0.51	0.65	0.030	0.071	0.112	0.047	0.179	0.075
	30	0.46	0.65	0.030	0.071	0.112	0.047	0.179	0.075
3.3	15	0.51	0.65	0.034	0.082	0.124	0.047	0.149	0.061

	20	0.45	0.65	0.030	0.082	0.124	0.047	0.149	0.058
	25	0.40	0.65	0.030	0.075	0.112	0.047	0.149	0.058
	30	0.40	0.65	0.030	0.061	0.094	0.047	0.149	0.058
3.4	15	0.45	0.60	0.030	0.082	0.124	0.047	0.119	0.083
	20	0.37	0.60	0.030	0.082	0.124	0.047	0.119	0.152
	25	0.37	0.60	0.030	0.061	0.094	0.047	0.119	0.152
	30	0.37	0.60	0.030	0.061	0.094	0.033	0.119	0.152
4	15	0.45	0.60	0.030	0.082	0.102	0.047	0.119	0.083
	20	0.37	0.60	0.030	0.082	0.102	0.047	0.089	0.152
	25	0.37	0.60	0.030	0.061	0.087	0.047	0.089	0.152
	30	0.37	0.60	0.030	0.061	0.087	0.033	0.089	0.152

- a. Nonfenestration *U*-factors shall be obtained from measurement, calculation or an approved source.

***Subsection N1102.3.2, Glazed fenestration SHGC, is changed to read as follows:***

An area-weighted average of fenestration products more than 50 percent glazed shall be permitted to satisfy the SHGC requirements. In sub climate zones 2.1, 2.2, 3.1, 3.2 and 3.3 the maximum area-weighted average and the maximum SHGC shall not exceed 0.40.

***Subsection N1102.2.11, Insulation installed in walls, is added to read as follows:***

Insulation batts installed in walls shall be totally surrounded by an enclosure on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing or other equivalent material approved by the building official.

***Subsection N1102.3.3, Glazed fenestration exemption, is amended to read as follows:***

Up to 1 percent of glazed fenestration per dwelling unit shall be permitted to be exempt from *U*-factor and SHGC requirements in Section 402.1.

***Subsection N1102.3.5, Thermally isolated sunroom U-factor, is amended to read as follows:***

New windows and doors separating the sunroom from conditioned space shall meet the building thermal envelope requirements.

***Subsection N1102.3.6, Replacement fenestration, is amended to read as follows:***

Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for *U*-factor in Table N1102.1.

Exceptions:

1. Replacement skylights shall have a maximum *U*-factor for 0.60 when installed in all sub climate zones except for 2.1.
2. For buildings constructed in conformance with an energy code as required by State of Texas Senate Bill Number 5, 77<sup>th</sup> Legislature, replacement fenestration units may comply with the original construction documents or applicable *U*-factor in Table 402.1.1.

**Subsection N1102.3.7, Prescriptive path for additions, is added to read as follows:**

As an alternative to demonstrating compliance, additions with a conditioned floor area less than 500 square feet (46.5 m2) to existing single-family residential buildings and structures shall meet the prescriptive envelope component criteria in Table N1102.3.7 for the sub climate zone applicable to the location. The U-factor of each individual fenestration product (windows, doors and skylights) shall be used to calculate and area-weighted average fenestration product U-factor for the addition, which shall not exceed the applicable listed values in Table N1102.3.7. For additions, other than sunroom additions, the total area of fenestration products shall not exceed 40 percent of the gross wall and roof area of the addition. The R-values for opaque thermal envelope components shall be equal to or greater than the applicable listed values in Table N1102.3.7.

Conditioned sunroom additions shall maintain thermal isolation; shall not be used as kitchens or sleeping rooms.

In sub climate zones 2.1, 2.2, 3.1, 3.2 and 3.3, the combined solar heat gain coefficient (the area weighted average) of all glazed fenestration products used in additions and as replacement windows in accordance with this section shall not exceed 0.40.

**Table N1102.3.7, Prescriptive Envelope Component Criteria Additions to and Replacement Windows for Existing Detached One-and Two-Family Dwellings, is added to read as follows:**

**Table N1102.3.7 PRESCRIPTIVE ENVELOPE COMPONENT CRITERIA  
ADDITIONS TO AND REPLACEMENT WINDOWS FOR EXISTING DETACHED  
ONE- AND TWO-FAMILY DWELLINGS<sup>d</sup>**

SUB CLIMATE ZONES	MAXIMUM	MINIMUM					
	Fenestration U-factor	Ceiling R-value <sup>a, e</sup>	Wall R-value <sup>e</sup>	Floor R-value	Basement wall R-value <sup>b</sup>	Slab perimeter R-value	Crawl space wall R-value
2.1	0.75	R-26	R-13	R-11	R-5	R-0	R-5
2.2, 3.1, 3.2, 3.3 and 3.4	0.50	R-30	R-13	R-19	R-8	R-0	R-10
4	0.50	R-38	R-13	R-21	R-10	R-0	R-19

- "Ceiling R-value" shall be required for flat or inclined (cathedral) ceilings. Floors over outside air shall meet "Ceiling R-value" requirements.
- Basement wall insulation to be installed in accordance with Section 402.2.6.
- "Crawl space wall R-value" shall apply to unventilated crawl spaces only. Crawl space insulation shall be installed in accordance with Section 402.2.8.
- Sunroom additions shall be required to have a maximum fenestration U-factor of 0.5. in all sub climate zones except sub climate zone 2.1. In all sub climate zones, the minimum ceiling R-value for sunroom additions shall be R-19 and the minimum wall R-value shall be R-13.

## **Chapter 13, General Mechanical System Requirements**

### **Subsection M1305.1.3, Appliances in attics, is changed to read as follows:**

Attics containing appliances requiring access shall be provided with an opening and a clear and unobstructed passageway large enough to allow removal of the largest appliance, but not less than 30 inches (762 mm) high and 22 inches (559 mm) wide and not more than 20 feet (6096 mm) in length when measured along the centerline of the passageway from the opening to the appliance. The passageway shall have continuous unobstructed solid flooring in accordance with Chapter 5 not less than 30 inches (610 mm) wide. A level service space at least 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present along all sides of the appliance where access is required. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), or larger where such dimensions are not large enough to allow removal of the largest appliance. As a minimum, access to the attic space shall be provided by one of the following:

1. A permanent stair.
2. A pull down stair.
3. An access door from an upper floor level.
4. Access panel may be used in lieu of items 1, 2, or 3 with prior approval of the code official due to structural conditions.

#### **Exceptions:**

1. The passageway and level service space are not required where the appliance is capable of being serviced and removed through the required opening.

### **Subsection M1305.1.4.1, Ground clearance, is changed to read as follows:**

Appliances supported from the ground shall be level and firmly supported on a concrete slab or other approved material extending above the adjoining ground a minimum of 3 inches (76mm). Appliances suspended from the floor shall have a clearance of not less than 6 inches (152 mm) above the ground.

### **Subsection M1305.1.4.3, Electrical requirements, is amended by the addition of a sentence to read as follows:**

Low voltage wiring of 50 volts or less shall be installed in a manner to prevent physical damage.

### **Subsection M1305.1, Appliance access for inspection service, repair and replacement; is amended by the addition of subsection M1305.1.5 and M1305.1.5.1 to read as follows:**

**Subsection M1305.1.5**, Water heaters above ground or floor. When the mezzanine or platform in which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building.

**Subsection M1305.1.5.1**, Whenever the mezzanine or platform is not adequately lighted or access to a receptacle outlet is not obtainable from the main level, lighting and a receptacle outlet shall be provided in accordance with Section M1305.1.3.1.

### **Subsection M1307.3.1, Protection from impact; is deleted in its entirety.**

## **Chapter 15, Exhaust Systems**

### **Subsection M1502.3, Exhaust duct size; is changed to read as follows:**

The minimum diameter of the exhaust duct shall be as recommended by the manufacturer, shall be at least the diameter of the appliance outlet and shall be a minimum nominal size of 4 inches (102 mm) in diameter. The size of duct shall not be reduced along its developed length nor at the point of termination.

### **Subsection M1502.6, Length limitation; is changed to read as follows:**

The maximum length of a clothes dryer exhaust duct shall not exceed 25 feet (7620 mm) from the dryer location to the wall or roof termination with not more than two bends. When extra bends are installed, the maximum length of the duct shall be reduced 2.5 feet (762 mm) for each 45-degree (0.79 rad) bend and 5 feet (1524 mm) for each 90-degree (1.6 rad) bend that occur after the first two bends, measuring in the direction of airflow. The maximum length of the exhaust duct does not include the transition duct.

#### **Exception:**

Where the make and model of the clothes dryer to be installed is known and the manufacturer's installation instructions for such dryer are provided to the code official, the maximum length of the exhaust duct shall not exceed 40 feet, including any transition duct, shall be permitted to be in accordance with the dryer manufacturer's installation instructions, and provided that a 4 inch by 6 inch sign red in color with white letters is permanently affixed to the structure stating the following:

Warning: Dryer must be approved for vent length of at least 40 feet  
Total Developed Length (TDL).  
Duct Size: (Number)  
Total Developed Length: (Number)

## **Chapter 20, Boilers/Water Heaters**

### **Subsection M2005.2, Prohibited locations; is changed to read as follows:**

Fuel-fired water heaters shall not be installed in a room used as a storage closet. Water heaters located in a bedroom or bathroom shall be installed in a sealed enclosure so that combustion air will not be taken from the living space. Access to such enclosure may be from the bedroom or bathroom when through a solid door, weather-stripped in accordance with the exterior door air leakage requirements of the *International Energy Conservation Code* and equipped with an approved self-closing device. Direct-vent water heaters are not required to be installed within an enclosure.

### **Subsection G2407.10, Louvers and grilles, is changed to read as follows:**

The required size of openings for combustion, ventilation and dilution air shall be based on the net free area of each opening. Where the free area through a design of louver, grille or screen is known, it shall be used in calculating the size opening required to provide the free area specified. Where the design and free area of louvers and grilles are not known, it shall be assumed that wood louvers will have 25-percent free area and metal louvers and grilles will have 50 percent free area. Screens shall have a mesh size not smaller than ¼ inch (6.4 mm). Nonmotorized louvers and grilles shall be fixed in the open position. Motorized louvers shall be interlocked with the appliance so that they are proven to be in the full open position prior to main burner ignition and during main burner operation. Means shall be provided to prevent the main burner from igniting if the louvers fail to open during burner start up and to shut down the main burner if the louvers close during operation.

***Subsection G2407.11, Combustion air ducts, Exception number 8, is amended to read as follows:***

8. Combustion air intake openings located on the exterior of a building shall have the lowest side of such openings located not less than 12 inches (305 mm) vertically from the adjoining grade level *or the manufacturer's recommendation, whichever is more stringent.*

***Subsection G2408.3, Private garages; is deleted in its entirety.***

***Subsection G2408.4, Clearances from grade, is amended to read as follows:***

Equipment and appliances installed at grade level shall be supported on a level concrete slab or other approved material extending a minimum of 3 inches (76 mm) above adjoining grade or shall be suspended a minimum of 6 inches (152 mm) above adjoining grade.

***Subsection G2412.5, Identification; is amended by the addition of a second paragraph to read as follows:***

Both ends of each section of medium pressure gas piping shall identify its operating gas pressure with an approved tag. The tags are to be composed of aluminum or stainless steel and the following wording shall be stamped into the tag:

"WARNING  
1/2 to 5 psi gas pressure  
Do Not Remove"

***Subsection G2413.3, Sizing; is amended by the addition of an exception to read as follows:***

*Exception:* Corrugated stainless steel tubing (CSST) shall be a minimum of 1/2".

***Subsection G2415.9, Minimum burial depth; is changed to read as follows:***

Underground piping systems shall be installed a minimum depth of 18 inches (458 mm) below grade.

***Subsection G2415.9.1, Individual outside appliances; is deleted in its entirety.***

***Subsection G2417.1, General; is changed to read as follows:***

Prior to acceptance and initial operation, all piping installations shall be inspected and pressure tested to determine that the materials, design, fabrication, and installation practices comply with the requirements of this code. The permit holder shall make the applicable tests prescribed in Sections 2417.1.1 through 2417.1.5 to determine compliance with the provisions of this code. The permit holder shall give reasonable advance notice to the code official when the piping system is ready for testing. The equipment, material, power and labor necessary for the inspections and test shall be furnished by the permit holder and the permit holder shall be responsible for determining that the work will withstand the test pressure prescribed in the following tests.

**Subsection G2417.4, Test pressure measurement; is changed to read as follows:**

Test pressure shall be measured with a monometer or with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made.

**Subsection G2417.4.1, Test pressure; is changed to read as follows:**

The test pressure to be used shall be not less than 3 psig (20 kPa gauge), or at the discretion of the Code Official, the piping and valves may be tested at a pressure of at least six (6) inches (152 mm) of mercury, measured with a manometer or slope gauge. For tests requiring a pressure of 3 psig, gauges shall utilize a dial with a minimum diameter of three and one half inches (3 ½”), a set hand, 1/10 pound incrementation and pressure range not to exceed 6 psi for tests requiring a pressure of 3 psig. For tests requiring a pressure of 10 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one-half inches (3 ½”), a set hand, a minimum of 2/10 pound incrementation and a pressure range not to exceed 20 psi. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa) (1/2 psi) and less than 200 inches of water column pressure (52.2 kPa) (7.5 psi), the test pressure shall not be less than ten (10) pounds per square inch (69.6 kPa). For piping carrying gas at a pressure that exceeds 200 inches of water column (52.2 kPa) (7.5 psi), the test pressure shall be not less than one and one-half times the proposed maximum working pressure.

**Subsection G2417.4.2, Test duration; is changed to read as follows:**

Test duration shall be held for a length of time satisfactory to the Code Official, but in no case for less than fifteen (15) minutes. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa), the test duration shall be held for a length of time satisfactory to the Code Official, but in no case for less than thirty (30) minutes.

**Subsection G2420.1, General; is amended by the addition of Subsection G2420.1.4 to read as follows:**

**Subsection G2420.1.4, Valves in CSST installations.** *Shutoff valves installed with corrugated stainless steel (CSST) piping systems shall be supported with an approved termination fitting, or equivalent support, suitable for the size of the valves, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration but in no case greater than 12-inches from the center of the valve. Supports shall be installed so as not to interfere with the free expansion and contraction of the system's piping, fittings, and valves between anchors. All valves and supports shall be designed and installed so they will not be disengaged by movement of the supporting piping.*

**Subsection G2421.1, Pressure regulators; is amended by the addition of a second paragraph and exception to read as follows:**

Access to regulators shall comply with the requirements for access to appliances as specified in Section M1305.

*Exception:* A passageway or level service space is not required when the regulator is capable of being serviced and removed through the required attic opening.

**Subsection G2439.5, Clothes dryer ducts; is amended by the addition of a sentence to read as follows:**

The size of duct shall not be reduced along its developed length nor at the point of termination.

**Subsection G2439.5.1, Maximum length; is changed to read as follows:**

The maximum length of a clothes dryer exhaust duct shall not exceed 25 feet (7620 mm) from the dryer location to the outlet terminal with not more than two bends. When extra bends are installed, the maximum length of the duct shall be reduced 2 1/2 feet (762 mm) for each 45-degree (0.79 rad) bend and 5 feet (1524 mm) for each 90-degree (1.6 rad) bend that occur after the first two bends, measuring in the direction of airflow.

*Exception:* Where the make and model of the clothes dryer to be installed is known and the manufacturer's installation instructions for such dryer are provided to the code official, the maximum length of the exhaust duct shall not exceed 40 feet, including any transition duct, shall be permitted to be in accordance with the dryer manufacturer's installation instructions, and provided that a 4 inch by 6 inch sign red in color with white letters is permanently affixed to the structure stating the following:

Warning: Dryer must be approved for a vent length of at least 40 feet  
Total Developed Length (TDL).  
Duct Size: (Number)  
Total Developed Length: (Number)

**Subsection G2445.2, Prohibited use; is changed to read as follows:**

One or more unvented room heaters shall not be used as the sole source of comfort heating in a dwelling unit.

*Exception:* Existing approved unvented heaters may continue to be used in dwelling units, in accordance with the code provisions in effect when installed, when approved by the Code Official unless an unsafe condition is determined to exist as described in *International Fuel Gas Code*, Section 108.7.

**Subsection G2448.1.1, Installation requirements; is changed to read as follows:**

The requirements for water heaters relative to access, sizing, relief valves, drain pans and scald protection shall be in accordance with this Code.

**Chapter 27, Plumbing Fixtures**

**Subsection P2709.1, Construction; is amended by the addition of an exception to read as follows:**

*Exception:* Showers designed to comply with ICC/ANSI A117.1.

**Subsection P2717.3 Sink, dishwasher and food grinder; is amended to read as follows:**

The combined discharge from a sink, dishwasher, and waste grinder is permitted to discharge through a single 1.5 inch (38 mm) trap. The discharge pipe from the dishwasher shall be increased to a minimum of 0.75 inch (19.1 mm) in diameter and shall connect with a wye fitting between the discharge of the food-waste grinder and the trap inlet or to the head of the food grinder. Dishwashing equipment shall discharge to the drainage system through by an approved air gap fitting.

## **Chapter 28, Water Heaters**

**Subsection P2801.5, Required Pan; is amended by the addition of the following sentence at the end of the paragraph:**

The pan drain pipe material shall comply with Table 2904.4 as amended.

**Subsection P2801.6, Water heaters installed in garages; is amended by the addition of exceptions to read as follows:**

*Exception:*

1. Electric Water Heater.

## **Chapter 29, Water Supply and Distribution**

**Subsection P2902.5.3, Lawn Irrigation Systems; is changed to read as follows:**

The potable water supply system to lawn irrigation systems shall be protected against backflow by an atmospheric-type vacuum breaker, a pressure-type vacuum breaker, a double-check assembly or a reduced pressure principle backflow preventer . . . {remainder of section unchanged}.

**Table P2904.4, Water Service Pipe, and Table P2904.5 Water Distribution Pipe; are amended by the deletion of the following:**

Cross-linked polyethylene (PEX) plastic tubing  
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe  
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)  
Polybutylene (PB) Plastic pipe and tubing,  
Polyethylene/aluminum/polyethylene (PE-AL-PE)  
Polyvinyl chloride (PVC) plastic pipe

**Subsections P2904.5.1 and 2904.15; is amended by deleting all references to "PB" plastic pipe.**

## **Chapter 30, Sanitary Drainage**

**Subsection P3005.2.6, Base of Stacks; is changed to read as follows:**

**P3005.2.6, Upper terminal;** Each horizontal drain shall be provided with a cleanout at its upper terminal.

*Exception:* Cleanouts may be omitted on a horizontal drain less than five (5) feet (1524 mm) in length unless such line is serving sinks or urinals.

## **Chapter 31, Vents**

**Subsection P3111; is deleted in its entirety**

**Subsection P3112.2; delete and replace with the following:**

**P3112.2 Installation.** Traps for island sinks and similar equipment shall be roughed in above the floor and may be vented by extending the vent as high as possible, but not less than the

drainboard height and then returning it downward and connecting it to the horizontal sink drain immediately downstream from the vertical fixture drain. The return vent shall be connected to the horizontal drain through a wye-branch fitting and shall, in addition, be provided with a foot vent taken off the vertical fixture vent by means of a wye-branch immediately below the floor and extending to the nearest partition and then through the roof to the open air or may be connected to other vents at a point not less than six (6) inches (152 mm) above the flood level rim of the fixtures served. Drainage fittings shall be used on all parts of the vent below the floor level and a minimum slope of one-quarter (1/4) inch per foot (20.9 mm/m) back to the drain shall be maintained. The return bend used under the drainboard shall be a one (1) piece fitting or an assembly of a forty-five (45) degree (0.79 radius), a ninety (90) degree (1.6 radius) and a forty-five (45) degree (0.79 radius) elbow in the order named. Pipe sizing shall be as elsewhere required in this Code. The island sink drain, upstream of the return vent, shall serve no other fixtures. An accessible cleanout shall be installed in the vertical portion of the foot vent.

***Subsection P3114.7, Vent required; is changed to read as follows:***

Within each plumbing system, a minimum of one 3" stack vent or 3" vent stack shall extend outdoors to the open air.

***Chapters 33-42, Delete these chapters entirely.*** Replace with the 2008 National Electrical Code.

***Part X -Appendix E, Manufactured Housing Used as Dwellings; is deleted in its entirety.***

***Appendix G, Swimming Pools, Spas and Hot Tubs***

***Subsection AG105.2, Outdoor swimming pool; item number 4 is changed to read as follows:***

When the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence, or shall be so constructed as to not provide a climbable surface. Spacing between vertical members shall not exceed 1.75 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

***Subsection AG105.2, Outdoor swimming pool; item number 8.1 is changed to read as follows:***

8.1. The release mechanism shall be located on the pool side of the gate at least 6 inches (152 mm) below the top of the gate

***Appendix H, Patio Covers; is deleted in its entirety.***

***Appendix I, Private Sewage Disposal; is deleted in its entirety.***

***Appendix K, Sound Transmission; is deleted in its entirety.***

***Appendix L, Permit Fees; is deleted in its entirety.***

**Appendix M, Requirements for Group R, Division 3.1 Occupancies; is changed to read as follows:**

REQUIREMENTS FOR GROUP R  
DIVISION 3.1 OCCUPANCIES  
"In-Home Day Care"

**Section AM101 – Definition**

For the purpose of this division, Group R, Division 3.1 Occupancies or "In-Home Day\_Care" shall be a Single-family detached residence used for the purpose of providing daycare. The use is allowed in the caretaker's residence under these three options:

1. Provides care for less than 24 hours a day to no more than six children under the age of fourteen, plus no more than six additional elementary school-age children (age five to thirteen). The total number of children (counting the caretaker's own children) is no more than twelve at any time. Registration with the Texas Department of Protective and Regulatory Services is required, unless exempted by state law.
2. Provides care for less than 24 hours a day for seven to twelve children (including the caretaker's and staff's children) under the age of 14. A license from the Texas Department of Protective and Regulatory Services is required. Care provided to nine or more children that does not comply with Option 1 requires a Specific Use Permit as defined in local zoning.
3. All group day care homes which were licensed by the State of Texas or had a license application pending on or before October 25, 1993, are considered to be a legal use in residential districts and will not require SUP approval as long as a valid license is maintained for the operation in its original location and it provides care for less than 24 hours a day for no more than twelve children (including the caretaker's and staff's children) under the age of 14.

**Section AM102 - Construction, Height and Allowable Area**

**AM102.1 General.** Building or parts of buildings classified as R3.1 because of the use and character of the occupancy shall comply with the provisions for an R-3.1 occupancy with the exception of the provisions located in this appendix chapter.

**AM102.2 Special Provisions.** All rooms or spaces used for the purpose of providing daycare shall be located on the ground floor. All stairways or ramps providing access to areas above or below the ground floor shall be made inaccessible to children by means of an approved permanent barrier located at the ground floor.

**AM102.3.** A Certificate of Occupancy is required for all buildings containing R-3.1 occupancy. Such Certificate of Occupancy must be renewed annually in conjunction with the State mandated inspections conducted by the Fire Department. The Certificate of Occupancy will only be renewed when it is determined by the Fire Department that the building complies with all the provisions of this Chapter. Application for the Certificate of Occupancy shall be made in the Office of the Building Official and a fee shall be collected as prescribed in the Administrative Code.

**Section AM103 - Location of Lot**

**AM103.1.** For requirements for fire resistance of exterior walls and openings, refer to Section R302 – Location of Lot.

**Section AM104 - Access and Exit Facilities and Emergency Escapes**

**AM104.1.** No room or space used for the purpose of daycare may be enclosed by doors equipped with double-keyed dead bolts. An approved emergency plan shall be posted and maintained in the facility.

### **Section AM105 – Light, Ventilation and Heating**

**AM105.1** For requirements for light, ventilation and heating Section R303, Light, Ventilation and Heating.

### **Section AM106 – Minimum Room Areas**

**AM106.1.** For requirements of room dimensions, refer to Section R304, Minimum Room Areas

### **Section AM107 - Smoke Detectors and Fire Extinguishing Equipment**

**AM107.1.** Every habitable room in buildings housing R3.1 Occupancies shall be equipped with an approved smoke detector. All such smoke detectors shall be interconnected in such a manner that if smoke is detected by a detector, all of the detectors will alarm.

*Exceptions:* An approved heat detector may be substituted for the required smoke detector located in the kitchen in R3.1 Occupancies.

All other requirements for smoke detection equipment for R3.1 Occupancies must be met.

**AM107.2.** Kitchens in buildings housing R3.1 Occupancies shall be equipped with an approved 2A:10-B:C fire extinguisher. An additional approved 2A:10-B:C fire extinguisher shall be located in the area of the building used for daycare purposes.

### **Section AM108 - Heating**

**AM108.1.** All equipment used for heating and air conditioning and all water heaters shall comply with the provisions for such equipment found in Part V – Mechanical, Part VI – Fuel Gas and Part VII – Plumbing of this code.

### **Appendix P, Sprinkling**

**AP101,** adopt Subsection AP101 as follows: An approved automatic fire sprinkler system shall be installed in new one- and two-family dwellings and townhomes in accordance with Section 903.3.1 of the *International Building Code*.