

DALLAS COUNTY FIRE CODE



AS

ADOPTED: 8-25-2015

EFFECTIVE: 8-25-2015

COURT ORDER: 2015-1143

**DALLAS COUNTY FIRE MARSHAL'S OFFICE
DALLAS COUNTY, TEXAS**

Latest Update: August 2015

DALLAS COUNTY FIRE CODE

Table of Contents

PART 1 – ADMINISTRATION & PRELIMINARY PROVISIONS.....	3
PART 2 – USE OF TERMS.....	5
PART 3 – GENERAL PROVISIONS.....	7
PART 4 – PERMITS.....	7
PART 5 – PERMITTEE.....	8
PART 6 – APPEALS AND HEARING PROCEDURES.....	9
PART 7 – ENFORCEMENT.....	11
PART 8 - FORMS, RECORDS, AND FEES.....	11
PART 9 – SEVERABILITY AND CONSTRUCTION.....	12

EXHIBITS

<u>EXHIBIT A</u> – ADDITIONS, INSERTIONS, DELETIONS AND CHANGES TO INTERNATIONAL FIRE CODE, 2009 EDITION.....	13
<u>EXHIBIT B</u> – THE FEE SCHEDULE IS ESTABLISHED BY A SEPARATE DALLAS COUNTY COMMISSIONERS COURT ORDER.....	18
<u>EXHIBIT C</u> – APPENDIX SECTIONS B, C, D, and G.....	Attached

DALLAS COUNTY FIRE CODE

PART 1 – ADMINISTRATION AND PRELIMINARY PROVISIONS

SECTION 1.1 – AUTHORITY

This Code is adopted as a fire Code by the Dallas County Commissioners Court of, Dallas County, Texas (Commissioners Court), acting in its capacity as the governing body of Dallas County. The authority of Dallas County to adopt this Code and the contents hereof is derived from Chapter 233, Subchapter C, Texas Local Government Code, Section 233.061 et seq., as amended. These regulations adopted by the Commissioners Court shall be known as the Dallas County Fire Code, hereinafter referred to as “this Code”. This Code may be amended at any time by a majority vote of the Commissioners Court.

SECTION 1.2 – SCOPE OF DALLAS COUNTY FIRE CODE

On the date this Code is effectively adopted by the Commissioners Court, this Code shall apply and be enforced in all unincorporated areas of Dallas County, Texas and on land and facilities owned/or operated by Dallas County

SECTION 1.3 – PURPOSE

The purpose of this Code is to promote and protect buildings constructed in the unincorporated areas of the County from fire.

- (a) This Code establishes the minimum standards to provide for the health, safety, and welfare of the general public and the citizens of Dallas County. This Code is intended to provide minimum requirements, with due regard to function, for the Design and Construction or Substantial Improvements to any Public Buildings, Commercial Establishments, and Multi-Family Dwellings with four or more units to reduce the risk to life and property from fire.
- (b) Fire safety in regard to operation and use of buildings and structures after construction, whether or not their construction was subject to this Code, shall be enforced independent of this Code by the County Fire Marshal in accordance with applicable law, including but not limited to his independent authority to inspect for the presence of fire and life safety hazards and order their correction under Chapter 352 of the Texas Local Government Code.
- (c) This Code is not intended in any way to limit the statutory authority of the Fire Marshal, and it is intended that such authority be retained to the fullest extent that the law would authorize.

SECTION 1.4 – CONSTRUCTION OF REGULATIONS

- (a) This Code is to be construed liberally to accomplish its purpose. Where no applicable standards or requirements are set forth in this Code, or are contained within other laws, codes, regulations, ordinances, or Commissioners Court orders, compliance with applicable standards of the National Fire Protection Association (NFPA), including NFPA 101 – Life Safety Code, International Building Codes and its reference codes or other nationally recognized fire safety standards, as approved, shall be deemed as prima facie evidence of compliance with the intent of this Code.

- (b) Nothing herein shall derogate from the authority of the Dallas County Fire Marshal to determine compliance with codes or standards for those activities or installations with the Dallas County Fire Marshal's jurisdiction or responsibility. Requirements that are essential for the public safety of a building or structure or for the safety of the occupants thereof or the general public which are not specifically provided for by this Code shall be determined by the Dallas County Fire Marshal.
- (c) The codes and standards referenced in this Dallas County Fire Code shall be those that are listed in Chapter 46 of the International Fire Code of 2009, and such codes and standards shall be considered part of the requirements of this Code to the prescribed extent of such reference(s).
- (d) Where differences occur between the provision(s) of this Code and other referenced standards, the provisions of this Code shall apply.
- (e) Where there is a conflict between a general requirement and a specific requirement with this Code, the specific requirement shall be applicable.

SECTION 1.5 – ABROGATION AND GREATER RESTRICTIONS

This Code is not intended to repeal, abrogate, or impair any existing laws, regulations, easements, covenants, or deed restrictions. Except as provided in Part 9, where this Code and legal requirements conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

SECTION 1.6 – WARNING AND DISCLAIMER OF LIABILITY

The degree of fire protection required by this Code is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. This Code does not imply that any building or the uses permitted within any building will be free from a fire hazard. This Code shall not create liability on the part of Dallas County or any officer or employee thereof for any damages that result from reliance on this Code or any administrative decision lawfully made there under. The granting of a permit or issuance of a Certificate of Compliance does not imply that the building can be insured for fire coverage.

SECTION 1.7 – FINDINGS OF FACT

It is hereby found by the Dallas County Commissioners Court that fires have occurred in the past within its jurisdiction and are likely to occur in the future, and that damage to property and loss of life occurs for many reasons including fires that could have been prevented or minimized by providing additional safeguards to provide adequate egress time and protection for people exposed to fire.

SECTION 1.8 – BASIS FOR REGULATION

The Dallas County Fire Code shall consist of this Code plus the International Fire Code, 2009 Edition, including appendix chapters listed below, which Code and appendices are incorporated herein as if fully set out herein, with the additions, insertions, deletions and changes, prescribed in EXHIBIT “A” hereto.

- (a) Appendix A – Board of Appeals IS DELETED
- (b) Appendix B – Fire-Flow Requirements for Buildings is adopted in its entirety.
- (c) Appendix C – Fire Hydrant Locations and Distribution is adopted, except that in Sections C103.1 and C105.1, the phrase “or the rules of the jurisdiction in whose Extraterritorial Jurisdiction (ETJ) the project is located, whichever is more stringent” is added behind the works Table C105.1.
- (d) Appendix Chapter D – Fire Apparatus Access Roads, is adopted in its entirety.
- (e) Appendix Chapter E – Hazard Categories, IS DELETED
- (f) Appendix Chapter F – Hazard Ranking, IS DELETED
- (g) Appendix Chapter G – Cryogenic Fluids – Weight and Volume Equivalents, is adopted in its entirety.

SECTION 1.9 – ALTERNATIVE MATERIALS AND METHODS

The provisions of this Code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this Code, provided that any such alteration has been approved by the Dallas County Fire Marshal. The Dallas County Fire Marshal is authorized to approve an alternative material or method of construction where the Dallas County Fire Marshal finds that the proposed design is satisfactory and complies with the intent of the provisions of this Code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this Code in quality, strength, effectiveness, fire resistance, durability and safety. (*ref. 104.9 IFC 2009*)

PART 2 – USE OF TERMS

SECTION 2.1 – CERTIFICATE OF COMPLIANCE/ **CERTIFICATE OF OCCUPANCY**

A “Certificate of Compliance” or “**Certificate of Occupancy**” means a certificate issued by the Dallas County Fire Marshal indicating that a building or substantial improvement is in compliance with this Code, as of a specific date and for a specific occupancy. The certificate may be filed in the Real Property Records as outlined in Section 7.1 of this Code. A Certificate of Compliance under this Fire Code shall not be construed as authorizing the owner or operator of any building to afterward operate or maintain such building in such a way as to create, cause or allow the existence of a fire or life safety condition, which condition shall be subject to the independent enforcement authority of the County Fire Marshal.

SECTION 2.2 – CERTIFICATE OF NON-COMPLIANCE

A “Certificate of Non-Compliance” means a certificate issued by the Dallas County Fire Marshal indicating that a building or substantial improvement is not in compliance with the Dallas County Fire Code as of a specific date. This certificate may be filed in the Real Property Records as outlined in Section 7.1 of this Code.

SECTION 2.3 – CONSTRUCTION

“Construction” begins on the date that ground is broken for a building, or if no ground is broken, on the date that:

- (a) the first materials are added to the original property;
- (b) foundation pilings are installed on the original property; or
- (c) a manufactured building or relocated structure is placed on a foundation on the original property.

SECTION 2.4 – FIRE CODE OFFICIAL

The term “Fire Code Official” is synonymous with the term “Dallas County Fire Marshal” or a designee of such individual; however, only the duly appointed Dallas County Fire Marshal has the authority to overrule his or her subordinates or grant variances before applicants for permits or variances may make written objections (appeals) to the Dallas County Commissioners Court.

SECTION 2.5 – DALLAS COUNTY FIRE MARSHAL

“Dallas County Fire Marshal” means the holder of the statutory office of County Fire Marshal for Dallas County, Texas or the employee(s) designated by the Dallas County Fire Marshal to perform a task required by this Code.

SECTION 2.5 – DALLAS COUNTY DIRECTOR OF PUBLIC WORKS

The Dallas County Director of Public Works is responsible for any duties designated for a “County Engineer” in this Fire Code or any Exhibit or Appendix thereof.

SECTION 2.6 – PERSON

“Person” includes any individual or group of individuals, corporation, partnership, association, limited liability company, or any other organized group of persons. “Person” does not include a State Agency that is authorized to prevent and extinguish forest and grass fires.

SECTION 2.7 –BUILDING

“Building” includes an establishment or multifamily dwelling.

SECTION 2.8 – SUBSTANTIAL IMPROVEMENT

“Substantial improvement” means:

- (a) the repair, restoration, reconstruction, improvement, or remodeling of a building for which the cost exceeds 50 percent of the building’s value according to the certified tax appraisal roll for the County for the year preceding the year in which the work was begun; or
- (b) a change in occupancy classification involving a change in the purpose or level of activity in a building, including the renovation of a warehouse into a loft apartment.

A substantial improvement begins on the date that the repair, restoration, reconstruction, improvement, or remodeling or the change in occupancy classification begins or on the date materials are first delivered for that purpose.

The Dallas County Fire Marshal may require the submittal of an independent certified damage assessment in cases where the structure has suffered other than minor damage.

SECTION 2.9 – UNINCORPORATED AREA

“Unincorporated Area” means any real property in Dallas County, Texas, which is not within the city limits of a municipality. Other than any buildings owned or operated by Dallas County, Texas in or on any portion of Dallas County, Texas, this Fire Code shall only apply to buildings constructed in or on any portion of an unincorporated area of Dallas County that are commercial establishments, public buildings, or multifamily residential dwellings consisting of four or more units. All buildings owned or operated by Dallas County, Texas in or on any portion of Dallas County, Texas shall be governed by this Fire Code. This Fire Code does not apply to any industrial facility that the Dallas County Fire Marshal determines qualifies for the exception specified in Section 233.062(b) of the Texas Local Government Code. The Dallas County Fire Marshal shall have the authority to seek the assistance of the Occupational Health and Safety Administration and the **International Building Codes 2009** in making the aforesaid determination.

PART 3 - GENERAL PROVISIONS

SECTION 3.1 – ADMINISTRATION BY THE DALLAS COUNTY FIRE MARSHAL

The Dallas County Fire Marshal is responsible for the administration of this Code, issuance of permits required by this Code, enforcement of this Code and maintenance of proper records.

SECTION 3.2 – RESPONSIBILITY OF THE DALLAS COUNTY FIRE MARSHAL

The County Fire Marshal or the County Fire Marshal’s designee may conduct inspections provided for in this Code or by Subchapter C of Chapter 233 of Subtitle B of Title 7 of the Texas Local Government Code.

SECTION 3.3 – RESPONSIBILITY OF OTHER OFFICIALS

Under this Code, the Dallas County Fire Marshal is responsible for all administrative decisions, determinations and duties. The Dallas County Fire Marshal may seek and secure the assistance of other officials of Dallas County in making decisions and determinations and in performing the administrative duties but is not required to conform to the recommendations of others, provided however, that any decision by the Dallas County Fire Marshal may be appealed by the process in PART 6 of this Code.

PART 4 - PERMITS

SECTION 4.1 – PERMITS REQUIRED

No person shall start or authorize Construction of a building or Substantial Improvement within an unincorporated area of Dallas County without first securing a permit under this Code. Refer to EXHIBIT “B” – Fee Schedule.

SECTION 4.2 – APPLICATION FOR PERMIT

The application for a permit will be on a form prescribed by the Dallas County Fire Marshal and must be supported by the following:

- (a) A completed Fire Code Design and Compliance Review Sheet provided by the Dallas County Fire Marshal and signed and sealed by a duly licensed architect or engineer authorized to practice in the State of Texas;
- (b) Two complete sets of construction and site plans, drawn to scale for each level of the proposed buildings or systems containing all specification including the following:
 1. types of construction materials and class of interior finish;
 2. location of all exits with distances between exits called out – exit width, type and any special requirement shall be stated; and
 3. The location of any fire alarm equipment, automatic sprinklers, emergency lighting, etc. required to meet this Code; and
- (c) A permit fee in accordance with those found in EXHIBIT “B” of this Code.

If the Dallas County Fire Marshal is unable to determine from the information submitted whether a permit should be issued, the Dallas County Fire Marshal may require the submission of additional information, drawings, specifications or documents.

SECTION 4.3 – DETERMINATION OF PERMIT ELIGIBILITY

After the application is filed, the Dallas County Fire Marshal shall determine if the proposed building or substantial improvement meets the minimum requirements of this Code based on the information provided.

- (a) If it is determined that the proposed building or substantial improvement meets the requirements, then a permit will be issued after the collection of the appropriate fees as outlined in Section 8.3 – Fees, of this Code, and as referred to in EXHIBIT “B” – Fee Schedule.

- (b) If it is determined that the proposed building or substantial improvement does not comply with the requirements of this Code, then the application package shall be returned to the applicant with an explanation of why it was not approved.

SECTION 4.4 – ISSUANCE OF PERMITS

When the Dallas County Fire Marshal determines that a permit shall be issued, the Dallas County Fire Marshal shall issue the permit after the proper fee is collected. If applicable, the permit shall be issued as an addendum to the development permit issued under the Regulations of Dallas County, Texas for Flood Plain Management.

SECTION 4.5 – TERM OF PERMITS

Construction of a building or a substantial improvement must be started within 180 days of the date the permit is issued or the permit shall be null and void. Upon written request, two (2) six-month extensions may be obtained.

PART 5 - PERMITTEE

SECTION 5.1 – RESPONSIBILITIES OF ALL PERMITTEES

All permit holders must:

- (a) post the permit on the jobsite in a place clearly visible from the nearest road or street;
- (b) post and maintain the street number on the jobsite in a place visible from the road or street and in a manner meeting the requirements of the standards for permanent numbers set forth in The International Fire Code 2009 – Section 505.1; and
- (c) allow the Dallas County Fire Marshal to inspect the work pursuant to a permit. The Dallas County Fire Marshal may make as many scheduled or unscheduled inspections as deemed necessary to enforce this Code.

The holder of a permit issued pursuant to this Code that wishes to make a change to the proposed building or substantial improvement, or to construct any building or substantial improvement other than that authorized by the permit, must submit supplemental drawings and/or specifications to the Dallas County Fire Marshal for review. If the changes do not comply with this Code, the Dallas County Fire Marshal shall not approve the change. If a change complies with this Code and is approved, a copy of the supplemental drawings and/or specifications shall be added to the permittee's file, and the Dallas County Fire Marshal shall amend the permit accordingly.

SECTION 5.2 – INSPECTIONS

- (a) The permittee shall employ an Independent Third Party, International Code Council Certified Building Inspector or Engineer to conduct compliance inspections throughout all phases of the construction process, to assure that the building and its components are meeting all construction codes. That Third Party Certified Inspector or Engineer shall complete a final inspection report certifying that the site has passed all Code requirements. An inspection log shall also be submitted showing all inspection activities.

- (b) The permittee shall ensure their Engineer, Architect, or International Code Council Certified Building Official (ICC-CBO) has made sufficient inspections so that they can complete the as-built certificate as outlined below.
- (c) When the building or substantial improvement is complete and ready for occupancy, an as-built certification form supplied by the Dallas County Fire Marshal must be completed, signed and sealed by a licenses engineer authorized to practice in the State of Texas, a registered architect authorized to practice in the State of Texas, or an ICC-CBO, indicating that, to the best of his or her knowledge, all the minimum requirements of this Code have been met. If the building has an automatic fire protection system, forms as promulgated by the State Fire Marshal’s office shall be included with the as-built certificate. Receipt by the Dallas County Fire Marshal of a completed, signed and sealed as-built certificate will serve as a request for final inspection.
- (d) Once a completed, signed and sealed form has been turned into the Dallas County Fire Marshal, and the Dallas County Fire Marshal determines, after a final occupancy inspection is conducted, that the building or substantial improvement complies with this Code, the Dallas County Fire Marshal will issue a Certificate of Compliance. The Dallas County Fire Marshal, at such time, will provide a release of final utilities to the appropriate utility company. Should the Dallas County Fire Marshal determine that the applicable certifications have not been provided and/or the provisions of Section 5.1 of this Code were not followed, then enforcement procedures as outlines in Part 7 shall commence. No person shall occupy a building or a substantial improvement that the Dallas County Fire Marshal determines, after inspection, not to be in compliance with this Code unless and until a Certificate of Compliance is subsequently issued for such building or substantial improvement.
- (e) Should the Dallas County Fire Marshal have to make additional inspections due to non-compliance with this Code, additional fees may be assessed per EXHIBIT “B”.

PART 6 – APPEALS AND HEARING PROCEDURES

SECTION 6.1 – APPEALS

If a permit applicant is denied a permit, the applicant may appeal the denial as provided in this Section. The term “Appellant” is used to refer to the appealing party. An appellant must seek a remedy or relief under this procedure before seeking a remedy or relief in a court of law. Application for a permit is deemed to be a waiver by the Applicant of the right to challenge this Code in a court of law before exhausting the relief or remedies provided for in this Code.

- (a) To appeal the denial of a permit application by an appointee of the Dallas County Fire Marshal, an appellant must submit a written statement to the Dallas County Fire Marshal setting forth the reasons why the permit application should be approved. If the Dallas County Fire Marshal sustains the appointee’s denial of the permit, the appellant must seek review of the decision by the Dallas County Commissioners Court pursuant to Section 6.2 below.

(b) If the permit application is denied by the Dallas County Fire Marshal personally, an appellant must seek review of the decision by the Dallas County Commissioners Court pursuant to Section 6.2 below.

SECTION 6.2 – REVIEW BY COMMISSIONERS COURT

If an appellant wishes to appeal the Dallas County Fire Marshal’s decision to deny a permit application, a written objection (appeal) must be filed with the Commissioners Court Administrator within ten (10) days of the date the Dallas County Fire Marshal, not an appointee, provides the appellant with a written denial of the permit. The Commissioners Court Administrator will place the matter on the Agenda of the Commissioners Court for review at a regularly scheduled meeting of Commissioners Court within thirty days of receiving the written objection (appeal). Notice that the matter is on the Agenda will be sent to the appellant by regular First Class U.S. mail at the appellant’s address shown on the permit, application, or written objection (appeal). The Commissioners Court will review the matter. The Commissioners Court may either affirm or reverse the decision of the Dallas County Fire Marshal. The decision of the Dallas County Fire Marshal shall remain in full force and effect pending review and action by the Commissioners Court.

SECTION 6.3 – VARIANCES

If any person wishes an exception to any provision of this Code, that person shall request a variance from the Dallas County Fire Marshal. The Dallas County Fire Marshal shall deny or grant the variance. Variances will be granted only if the following are met:

- (a) the applicant has shown good and sufficient cause;
- (b) it has been determined that failure to grant the variance would result in an exceptional hardship to the applicant; and
- (c) the granting of a variance will not result in an increased risk of fire, additional threats to public safety, extraordinary public expense, or create nuisances, cause fraud or victimization of the public.

Economic hardship shall not constitute the sole basis for granting a variance.

If the Dallas County Fire Marshal issues a variance, the Dallas County Fire Marshal shall only issue a variance to the extent minimally necessary, considering any possible fire hazards, to afford relief to the person requesting the variance. If a variance is granted, a permit shall be issued and the permittee shall conform to all applicable provisions of this Code except the specific Sections for which a variance is granted. If the Dallas County Fire Marshal denies a variance, the applicant for the variance may make a written objection (appeal) in the same manner as provided in Section 6.2 of this Code.

PART 7 – ENFORCEMENT

SECTION 7.1 – ENFORCEMENT

If any person violates any provisions of this Code, the Dallas County Fire Marshal may notify the Criminal District Attorney and request that the Criminal District Attorney take whatever action is necessary to remedy the violation, including but not limited to filing suit to enjoin the violation and/or seek a civil penalty under Sections 233.066 or 233.067 of the Texas Local Government Code of up to \$200 for each day that a violation exists. If a violation continues, Dallas County may file a Certificate of Non-Compliance in the Real Property Records of Dallas County. Once the violation has been resolved, any individual may request that a Certificate of Compliance be filed in the Real Property Records of Dallas County. A fee for this action will be charged in accordance with Section 8.3 of this Code. The violator shall bear this and all other cost of effecting compliance. Should the building be occupied without final occupancy inspection as required under this Code, or for any violation of Section 352.016 of the Texas Local Government Code, the County Fire Marshal may submit a case for review to the Criminal District Attorney's Office of alleged violations punishable pursuant to Section 352.022 of Texas Local Government Code.

SECTION 7.2 – VIOLATION OF CONDITIONS OF REGULATIONS

Any person having knowledge of a violation of this Code may file a complaint with the Dallas County Fire Marshal.

PART 8 - FORMS, RECORDS, AND FEES

SECTION 8.1 – FORMS

Forms to be used in the administration of this Code shall be promulgated by the Dallas County Fire Marshal.

SECTION 8.2 – MAINTENANCE OF RECORDS

The Dallas County Fire Marshal must maintain all applications for, and file copies of, permits for a retention period of three (3) years. Drawings and specifications on file with the Dallas County Fire Marshal may be destroyed after completion of the structure.

SECTION 8.3 – FEES

Fees for permits and inspections are to be set by Commissioners Court. Fees shall be paid by exact cash, cashiers check, money order, or personal check. Should the check be returned for insufficient funds, the permit(s) issued becomes null and void. Fees shall be paid at the time plans are submitted for review unless other arrangement have been made and approved by the County Auditor. The County shall deposit all fees received under this section in a special fund in the County treasury, pursuant to Texas Local Government Code 233.065(c), and money in that fund shall be used only for the administration and enforcement of the Fire Code.

The fees required under this Code are established by a separate Dallas County Commissioners Court Order.

PART 9 - SEVERABILITY AND CONSTRUCTION

The provisions of this Code are severable. If any word, phrase, clause, sentence, section, provision, or part of this Code should be invalid or unconstitutional, it shall not affect the validity of the remaining portions and it is hereby declared to be the intent of the Commissioners Court that this Code would have been adopted as to the remaining portions, regardless of the invalidity of any part. In the event that any provision of this Code might be interpreted in such a way as exceeding the County's authority, such provision should be construed to apply only to the extent authorized by law.

EXHIBIT A

ADDITIONS, INSERTIONS, DELETION AND CHANGES TO INTERNATIONAL FIRE CODE 2009 EDITION

CHAPTER 1 - Administration

Section 101 - General

101.1 Title.

These regulations shall be known as the Dallas County Fire Code, hereinafter referred to as “this Code”.

An addition referencing to the 2009 edition of the *International Building Code and its appendixes and reference standards*, regulating and governing the conditions and maintenance of all property, buildings and structures; by providing the standards for supplied utilities and facilities and other physical things and conditions essential to ensure that structures are safe, sanitary and fit for occupation and use; and the condemnation of buildings and structures unfit for human occupancy and use and the demolition of such structures in the Dallas County; providing for the issuance of permits and collection of fees therefor; Dallas County jurisdiction; and all other court orders and parts of the regulations in conflict therewith. County of Dallas in the jurisdiction of Dallas County does ordain as follows:

Coordination between the International Building and Fire Codes

Because the coordination of technical provisions is one of the benefits of adopting the ICC family of model codes, users will find the

ICC codes to be a very flexible set of model documents. To accomplish this flexibility some technical provisions are duplicated in some of the model code documents. While the International Codes are provided as a comprehensive set of model codes for the built environment, documents are occasionally adopted as a stand-alone regulation. When one of the model documents is adopted as the basis of a stand-alone code, that code should provide a complete package of requirements with enforcement assigned to the entity for which the adoption is being made.

The model codes can also be adopted as a family of complimentary codes. When adopted together there should be no conflict of any of the technical provisions. When multiple model codes are adopted in a jurisdiction it is important for the adopting authority to evaluate the provisions in each code document and determine how and by which agency(ies) they will be enforced. It is important, therefore, to understand that where technical provisions are duplicated in multiple model documents that enforcement duties must be clearly assigned by the local adopting jurisdiction.

Codes made referencing:

[E] = International Energy Conservation Code

[EB] = International Existing Building Code

[F] = International Fire Code

[FG] = International Fuel Gas Code

[M] = International Mechanical Code

[P] = International Plumbing Code

[R] = International Residential Code

102.3 Change of use or occupancy

Deleted in its entirety.

102.5 Historic buildings.

Deleted in its entirety.

Section 108 Board of Appeals

Part 6 of this Code provides for appeals of the decisions of the Dallas County Fire Marshal.

CHAPTER 2 - Definitions

Section 201 General

201.3 Terms defined in other codes.

Where terms are not defined in this Code and are defined in the codes and regulation referenced in Chapter 45, Referenced Standards, such terms shall have the meanings ascribed to them as in those codes.

Section 202 General Definitions

The following definitions will be included:

Cul-de-sac. A dead-end street with a turn-around at the closed end.

Dead-ends. A street or alley that has no regular exit or outlet. A closed end street.

High-Rise Building. A building that has floors used for human occupancy located more than 65 feet above the lowest level of fire department vehicle access.

Self-Service Storage Facility. Real property designed and used for the purpose of renting or leasing individual storage

CHAPTER 3 - General Precautions against Fire

Section 307 Open Burning and Recreational Fires

307.1 General.

A person shall not kindle or maintain or authorize to be kindled or maintained any open burning unless conducted and approved in accordance with this section.

307.1.1 Prohibited open burning.

Open burning that is offensive or objectionable because of smoke or odor emissions or when atmospheric conditions or local circumstances make such fire hazardous shall be prohibited.

307.2 Permit required.

A permit shall be obtained from the Dallas County Fire Marshal in accordance with Section 105 prior to kindling a fire for recognized agricultural or range or wildlife management practices, prevention or control of disease or pest, open burning or a bonfire. Application for such approval shall only be presented by and permits issued to the owner of the land, or their designee, upon which the fire is to be kindled. The Dallas County Fire Marshal may revoke any permit that is found not to be in compliance with this section, causing said permit to be null and void and any fees related to the permit shall not be refunded.

307.2.1 Authorization.

All outdoor burning in unincorporated Dallas County shall be done in accordance with Texas Outdoor Burning Rule Title 30 Texas Administrative Code (30 TAC) Sections 111.201 through 111.221. If a conflict should arise between this Code and the Texas Outdoor Burning Rule Title 30 Texas Administrative Code (30 TAC) Sections 111.201 through 111.221, then the more stringent rule shall apply. Where required by state or local law or regulations, open burning shall only be permitted with prior approval from the state and/or local air and water quality management authority provided that all conditions specified in the authorization are followed.

307.2.1.1 Daily Burn Approval.

All burning activities shall be approved by the Dallas County Fire Marshal, and shall require a daily burn approval from the Dallas County Fire Marshal's Office.

307.2.2 Prohibited open burning.

Open burning that will be offensive or objectionable because of smoke or odor emissions when atmospheric conditions or local circumstances make such fires hazardous shall be prohibited.

307.2.3 Restricting outdoor burning.

It shall be unlawful for a person, firm or corporation to ignite or burn materials when the Dallas County Fire Marshal or proper authority has determined a "No Burn Day" or when the Dallas County Commissioners Court has an "Outdoor Open Burning Ban" in effect.

307.3 Extinguishment authority.

The Dallas County Fire Marshal is authorized to order the extinguishment by the permit holder or the fire department of open burning which creates or adds to a hazardous or objectionable situation.

307.4 Location.

The location for open burning shall not be less than 300 feet from any structure, and provisions shall be made to prevent the fire from spreading to within 300 feet of any structure.

Exceptions:

1. Fires in approved containers that are not less than 25 feet from a structure.
2. The minimum required distance from a structure shall be 25 feet where the pile size is 3 feet or less in diameter and 2 feet or less in height.

307.4.1 Bonfires.

A bonfire shall not be conducted within 300 feet of a structure or combustible material unless the fire is contained in a barbecue pit. Conditions which could cause a fire to spread within 300 feet of a structure shall be eliminated prior to ignition. Fires found to be out of control or that are being conducted in an unsafe manner will be extinguished by the assigned Fire Department and cost will be charged back to the permit holder.

307.4.2 Recreational Fires.

Recreational fires shall not be conducted within 25 feet of a structure or combustible materials. Conditions which could cause a fire to spread within 25 feet of a structure shall be eliminated prior to ignition.

307.4.3 Trench burns.

Trench burns shall be conducted in air curtain trenches and in accordance with Section 307.2 and the State requirements for trench burns.

307.4 Attendance.

Open burning, bonfires, or recreational fires shall be constantly attended by a competent adult until the fire is extinguished with no remaining embers. A minimum of one portable fire extinguisher complying with Section 906 with a minimum 4-A rating or other approved on-site fire-extinguishing equipment, such as dirt, sand, water barrel with approved bucket, garden hose, or water truck, shall be available for immediate utilization. The fire-extinguishing equipment that is available on site shall be comparable to the size of the fire.

307.5 Open-flame cooking devices.

Charcoal burners and other open-flame cooking devices shall not be operated on combustible balconies or within 10 feet of combustible construction.

Exceptions:

1. One and two-family dwellings.

307.6 Penalties and Violations:

Persons who shall violate a provision of this, General Precautions against Fire, or fail to comply with any of the requirements thereof, or who fail to follow the directives of the Dallas County Fire Marshal, shall be guilty of a Class C Misdemeanor, punishable by a fine of not more than \$500.00. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

SECTION 506 – KEY BOXES is deleted in its entirety

SECTION 508 – FIRE PROTECTION WATER SUPPLIES

Section 508.1 is amended by adding the following sentence:

In the unincorporated areas of Dallas County where water supply is not normally found, a water supply as otherwise required by this section will not be required if the responsible emergency services district or fire department provides a letter stating they can provide sufficient fire flow for the specific project.

SECTION 601 BUILDING SERVICES AND SYSTEMS

Section 601.1 Scope is amended and 601.1.1 is added, to read as follows:

The provisions of this chapter shall apply to the installation, operation and maintenance of fuel-fired appliances and heating systems, emergency and standby power systems, electrical systems and equipment, mechanical refrigeration systems, elevator recall, stationary lead-acid battery systems and commercial kitchen hoods. Such design and construction shall comply with this section and the appropriate State Requirements, Rules, and Regulations and/or Federal Requirements, Rules, and Regulations.

601.1.1 Conflict between provisions.

If there is a conflict between the provisions of this section and the State Requirements, Rules, and Regulations and/or Federal Requirements, Rules, and Regulations, the more stringent of the provisions shall apply.

CHAPTER 33 - Explosives and Fireworks

Section 3302.1 Definitions is amended and/or added to read as follows:

Fireworks. Any composition or device for the purpose of producing a visible or an audible effect for entertainment purposes by combustion, deflagration, or detonation, and/or activated by ignition with a match or other heat producing device that meets the definition of 1.4G fireworks or 1.3G fireworks as set forth herein.

SECTION 3309 FIREWORKS 1.4G RETAIL, STORAGE, DISPLAY, AND SALE is added:

3309.1 General.

The sale, storage, and display of Fireworks 1.4G is subject to the authority of the Dallas County Fire Marshal, including the authority to inspect, determine the presence of fire hazards, and order corrections pursuant to Texas Local Government Code, Chapter 352.016.

3309.2 – Building Services. All building service in Fireworks 1.4G retail sales and storage buildings must comply with the provisions of this section.

3309.2.1 - Electrical work.

Electrical work performed in an unincorporated area of the state must be installed in accordance with the requirements of the National Electrical Code.

3309.2.2 - Required listing.

All electrical equipment, battery-powered equipment, and electrical cords shall be listed and shall be used in accordance with their listing.

3309.2.3 - Temporary Power.

The Dallas County Fire Marshal is authorized to give permission or deny temporarily supply and use power for up to 180 days.

3309.2.4 - Temporary Electrical Conductors

All temporary conductors shall comply with the National Electrical Code.

3309.2.5 - Portable generators.

Portable generators supplying power to consumer fireworks retail sales facilities shall comply with this section.

(5.1) Portable generators shall be located not less than 20 ft. from the consumer fireworks retail sales facility and in an area free from grass, trash, and other combustible flammable materials.

(5.2) Generator fuel shall be stored in an approved safety container at least 20 ft from the consumer fireworks retail sales facility. If the fuel is located less than 50 feet from the sales facility, the quantity shall be limited to not more than 5 gallons. Where the generator fuel storage is located at least 50 feet from the consumer fireworks retail sales facility, the quantity of such fuel is not limited.

EXHIBIT B - FEE SCHEDULE

Established and set by separate Dallas County Commissioners Court Order.

Fire & Safety Final Inspection		
Fire & Safety Final Inspection	Fire & Safety Final Inspection	\$35.00
Fire & Safety Final Re-Inspection		
Fire & Safety Final Re-Inspection	Re-Inspection 1st time	No Charge
	Second & Thereafter	\$25.00
CERTIFICATE OF OCCUPANCY - The review and inspection required for the issuance of the Certificate		
	The fee is \$100	\$100.00
Open Burning		
Special Open Burning - Bon Fires (Each Occurrence)	Filed Permit Required	\$25.00
Private (Annual for individual)	Filed Permit Required	\$25.00
Agriculture (Silva culture) - Allowed by law	Filed Permit Required	No Charge
Commercial (per project)	Less than 20 Acres	\$250.00
Commercial (per project)	Greater than 20 Acres	\$500.00
Fireworks		
Outdoor Retail Stands Temporary or Permanent	Per Individual Stand	\$50.00
Indoor Stands Small indoor stands	Stands less than 1000 Sq. Ft.	\$100.00
Large to Mega Indoor Stands	Stands greater than 1000 Sq. Ft.	\$150.00
Fireworks Display/Show	Per Display/Show	\$100.00
Construction Permits		
Building and Site Plans	Per 1000 sq. ft. of Structure	\$100.00
[top]		
Automatic Fire-Extinguishing Systems		
Automatic Fire-Extinguishing Systems	1 to 20 heads	\$100.00
Automatic Fire-Extinguishing Systems	21 to 250 heads	\$175.00
Automatic Fire-Extinguishing Systems	251 to 499 heads	\$250.00
Automatic Fire-Extinguishing Systems	500 heads or greater \$350+ 50¢ per additional head	\$350.00+
Automatic Fire-Extinguishing Systems Remodels, Additions, and Relocations	\$100.00 + 50¢ per device and maximum fee is \$2,000	\$50.00
[top]		

Fire Alarm Detection Related Equipment

Fire Alarm/Detection Related Equipment	1 to 10 devices	\$100.00
Fire Alarm/Detection Related Equipment	11 to 25 devices	\$175.00
Fire Alarm/Detection Related Equipment	26 to 150 devices	\$250.00
Fire Alarm/Detection Related Equipment	151 to 499 devices	\$350.00
Fire Alarm/Detection Related Equipment	500 devices or greater \$35 + .50¢ per additional device	\$350.00+
Fire Alarm System Remodels, Additional, and Relocations	\$100.00 + .50¢ per device and maximum fee is \$2,000	\$100.00+

[top]

Other Systems and Operations

Smoke Control, Elevator Recall, Door access control		\$50.00
Fire Pumps and Related Equipment		\$100.00
Standpipe Systems		\$50.00
Private Fire Hydrants		\$50.00
Flammable and Combustible Liquids		\$100.00
Hazardous Materials		\$100.00
LLP-Gas		\$100.00
Spraying or Dipping Operations		\$100.00
Temporary Membrane Structures-Tents and Canopies	Per Unit	\$75.00
Carnival or Circus	Small Facility Large Facility	\$100.00 \$200.00

[top]

Annual Inspections

Commercial/Public	1-5,000 sq. ft.	\$25.00
Commercial/Public	5,001-12,000 sq. ft.	\$50.00
Commercial/Public	12,001-25,000 sq. ft.	\$75.00
Commercial/Public	25,001-50,000 sq. ft.	\$100.00
Commercial/Public	50,001-100,000 sq. ft.	\$125.00
Commercial/Public	100,001-250,000 sq. ft.	\$175.00
Commercial/Public	≥250,000 each 10,000 sq. ft.	\$25.00
Multi-family Residences	Per building	\$50.00
Service Stations and Other Flammable Liquid or oxidizer storage facilities		\$100.00
Mass Gatherings & Assignments of Inspection Personnel and Permit	The fee is \$250 In addition, a fee of \$75.00 for each hour, or portion of an hour, per each inspection personnel required on site during the event.	\$250.00 +Standby
The fee is due when the site/safety/operations plans are submitted for review		
Texas Alcoholic Beverage Commission License Inspection	For each annual inspection for each bar, club, or retail establishment	\$100.00
One inspection and one re-inspection in case of failure for one location.		
Re-Inspections	1st Re-Inspection	No Charge

2nd and Beyond \$50.00

[top]

Licensed Facilities

Foster or Adoptive Homes	Licensed for 1-6 children	\$75.00
Foster Group Homes	Licensed for 7-12 children	\$100.00
Day Care Centers	1-50 children	\$75.00
Day Care Centers	50-99 children	\$100.00
Day Care Centers	100-49 children	\$125.00
Day Care Centers	150 or more children	\$150.00
Schools and Educational Occupancies (Public)	Public Schools K thru 12th	No Charge
Schools and Educational Occupancies (Private)	All other schools-see commercial rates above	_____
Hospitals/Nursing Homes	Licensed for 1-99 Beds	\$150.00
Hospitals/Nursing Homes	Licensed for 100-199 Beds	\$200.00
Hospitals/Nursing Homes	Licensed for 200-499 Beds	\$300.00
Hospitals/Nursing Homes	Licensed for 500 or more Beds	\$400.00

[top]

Hourly Rates: Inspectors

Charges during normal office hours	Normal Office Hours or Shifts	No Charge
Special Inspections , (after hours) per inspector hour	Per Hour Per Inspector for each hour of portion thereof	\$75.00
Fire Watch/Standby: For qualified personnel for purpose of identifying and controlling fire hazards and life safety	Per Hour Per Inspector for each hour or portion thereof	\$75.00

[top]

Operational Permits

Aerosol Products	\$50.00
Amusement Building	\$75.00
Aviation Facilities	\$50.00
Carnivals & Fairs	\$100.00
Battery Systems	\$50.00
Cellulose Nitrate Film	\$50.00
Combustible Dust-Producing Operations	\$50.00
Combustible Fibers	\$50.00
Compressd Gases	\$50.00
Covered Mall Building	\$100.00
Cryogenic Fluids	\$50.00
Cutting and Welding	\$50.00
Dry Cleaning Plants	\$50.00
Exhibits and Trade Shows	\$75.00
Explosives	\$50.00
Fire Hydrant and Valves	\$50.00
Flammable and Combustible Liquids	\$75.00

Floor Finishing		\$50.00
Fruit and Crop Ripening		\$50.00
Fumigation and Thermal Insecticide Fogging		\$50.00
Hazardous Materials		\$50.00
HPM Facilities		\$50.00
High-Pile Storage		\$50.00
Hot work Operations		\$50.00
Industrial Ovens		\$50.00
Lumbar Yards and Woodworking Plants		\$50.00
Liquid/Gas-fueled Vehicles/Equipment in Assembly Building		\$50.00
LP Gas		\$100.00
Magnesium		\$50.00
Miscellaneous Combustible Storage		\$50.00
Open Burning	See Open Burning Category	
Open Flames and Torches		\$50.00
Open Flames and Candles		\$50.00
Organic Coatings		\$50.00
Places of Assembly		\$50.00
Private Fire Hydrants		\$50.00
Pyrotechnic Special Effects Material		\$50.00
Pyroxylin Plastics		\$50.00
Refrigeration Equipment		\$50.00
Repair Garages and Motor Fuel-Dispensing Facilities		\$50.00
Rooftop Heliports		\$50.00
Spraying or Dipping		\$75.00
Storage of Scrap Tires and Tire Byproducts		\$50.00
Temporary Membrane Structures, Tents, Canopies		\$50.00
Tire Rebuilding Plants		\$50.00
Waster Handling		\$50.00
Wood Products		\$50.00
DUPLICATE PERMIT - The issuance of duplicate permits	The fee is \$10.00 for each duplicate permit	\$10.00 each

EXHIBIT C – APPENDIX SECTION B,C,D, and G

SECTION B105 FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings.

The minimum fire-flow requirements for one- and two-family dwellings having a fire-flow calculation area which does not exceed 3,600 square feet (344.5 m²) shall be 1,000 gallons per minute (3785.4 L/min). Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5 m²) shall not be less than that specified in Table B105.1.

Exception: A reduction in required fire flow of 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system.

TABLE B105.1 MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS^a

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)^c	FLOW DURATION (hours)
Type IA and IB^b	Type IIA and IIIA^b	Type IV and V-A^b	Type IIB and IIIB^b	Type V-B^b		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	

112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	4
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901- Greater	166,501- Greater	106,501- 115,800	77,001- 83,700	47,401- 51,500	6,000	
—	—	115,801- 125,500	83,701- 90,600	51,501- 55,700	6,250	
—	—	125,501- 135,500	90,601- 97,900	55,701- 60,200	6,500	
—	—	135,501- 145,800	97,901- 106,800	60,201- 64,800	6,750	
—	—	145,801- 156,700	106,801- 113,200	64,801- 69,600	7,000	
—	—	156,701- 167,900	113,201- 121,300	69,601- 74,600	7,250	
—	—	167,901- 179,400	121,301- 129,600	74,601- 79,800	7,500	
—	—	179,401- 191,400	129,601- 138,300	79,801- 85,100	7,750	

—	—	191,401- Greater	138,301- Greater	85,101- Greater	8,000	
---	---	---------------------	---------------------	--------------------	-------	--

For SI: 1 square foot = 0.0929 m², 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

- a. The minimum required fire flow shall be allowed to be reduced by 25 percent for Group R.
- b. Types of construction are based on the *International Building Code*.
- c. Measured at 20 psi.

B105.2 Buildings other than one- and two-family dwellings.

The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.1.

Exception: A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with [Section 903.3.1.1](#) or [903.3.1.2](#). The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.

SECTION C105 DISTRIBUTION OF FIRE HYDRANTS

C105.1 Hydrant spacing.

The average spacing between fire hydrants shall not exceed that listed in Table C105.1.

Exception: The fire chief is authorized to accept a deficiency of up to 10 percent where existing fire hydrants provide all or a portion of the required fire hydrant service.

Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C105.1.

TABLE C105.1 NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS ^{a, b, c} (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT ^d
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225

3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more ^e	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

- a. Reduce by 100 feet for dead-end streets or roads.
- b. Where streets are provided with median dividers which can be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.
- c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
- d. Reduce by 50 feet for dead-end streets or roads.
- e. One hydrant for each 1,000 gallons per minute or fraction thereof.

SECTION D101 GENERAL

D101.1 Scope.

Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the *International Fire Code*.

G101.1 Scope.

This appendix is used to convert from liquid to gas for cryogenic fluids.

G101.2 Conversion.

Table G101.2 shall be used to determine the equivalent amounts of cryogenic fluids in either the liquid or gas phase.

TABLE G101.2 WEIGHT AND VOLUME EQUIVALENTS FOR COMMON CRYOGENIC FLUIDS

CRYOGENIC FLUID	WEIGHT OF LIQUID OR GAS		VOLUME OF LIQUID AT NORMAL BOILING POINT		VOLUME OF GAS AT NTP	
	Pounds	Kilograms	Liters	Gallons	Cubic feet	Cubic meters
Argon	1.000	0.454	0.326	0.086	9.67	0.274
	2.205	1.000	0.718	0.190	21.32	0.604
	3.072	1.393	1.000	0.264	29.71	0.841
	11.628	5.274	3.785	1.000	112.45	3.184
	10.340	4.690	3.366	0.889	100.00	2.832
	3.652	1.656	1.189	0.314	35.31	1.000
Helium	1.000	0.454	3.631	0.959	96.72	2.739
	2.205	1.000	8.006	2.115	213.23	6.038
	0.275	0.125	1.000	0.264	26.63	0.754
	1.042	0.473	3.785	1.000	100.82	2.855
	1.034	0.469	3.754	0.992	100.00	2.832
	0.365	0.166	1.326	0.350	35.31	1.000
Hydrogen	1.000	0.454	6.409	1.693	191.96	5.436
	2.205	1.000	14.130	3.733	423.20	11.984
	0.156	0.071	1.000	0.264	29.95	0.848
	0.591	0.268	3.785	1.000	113.37	3.210
	0.521	0.236	3.339	0.882	100.00	2.832
	0.184	0.083	1.179	0.311	35.31	1.000
Oxygen	1.000	0.454	0.397	0.105	12.00	0.342
	2.205	1.000	0.876	0.231	26.62	0.754
	2.517	1.142	1.000	0.264	30.39	0.861
	9.527	4.321	3.785	1.000	115.05	3.250
	8.281	3.756	3.290	0.869	100.00	2.832
	2.924	1.327	1.162	0.307	35.31	1.000
Nitrogen	1.000	0.454	0.561	0.148	13.80	0.391
	2.205	1.000	1.237	0.327	30.43	0.862
	1.782	0.808	1.000	0.264	24.60	0.697
	6.746	3.060	3.785	1.000	93.11	2.637
	7.245	3.286	4.065	1.074	100.00	2.832
	2.558	1.160	1.436	0.379	35.31	1.000
LNG ^a	1.000	0.454	1.052	0.278	22.968	0.650
	2.205	1.000	2.320	0.613	50.646	1.434
	0.951	0.431	1.000	0.264	21.812	0.618
	3.600	1.633	3.785	1.000	82.62	2.340

	4.356	1.976	4.580	1.210	100.00	2.832
	11.501	5.217	1.616	0.427	35.31	1.000

For SI: 1 pound = 0.454 kg, 1 gallon = 3.785 L, 1 cubic foot = 0.02832 m³, °C = [(°F)-32]/1.8, 1 pound per square inch atmosphere = 6.895 kPa.

- a. The values listed for liquefied natural gas (LNG) are “typical” values. LNG is a mixture of hydrocarbon gases, and no two LNG streams have exactly the same composition.