

NFPA 97
Standard
Glossary
of Terms Relating
to Chimneys,
Vents, and
Heat-Producing
Appliances
1992 Edition



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The Board of Directors reaffirms that the National Fire Protection Association recognizes that the toxicity of the products of combustion is an important factor in the loss of life from fire. NFPA has dealt with that subject in its technical committee documents for many years.

There is a concern that the growing use of synthetic materials may produce more or additional toxic products of combustion in a fire environment. The Board has, therefore, asked all NFPA technical committees to review the documents for which they are responsible to be sure that the documents respond to this current concern. To assist the committees in meeting this request, the Board has appointed an advisory committee to provide specific guidance to the technical committees on questions relating to assessing the hazards of the products of combustion.

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Terms Relating to Chimneys, Vents,
and Heat-Producing Appliances
1992 Edition

This edition of NFPA 97, *Standard Glossary of Terms Relating to Chimneys, Vents, and Heat-Producing Appliances*, was prepared by the Technical Committee on Chimneys, Fireplaces, and Venting Systems for Heat-Producing Appliances and acted on by the National Fire Protection Association, Inc. at its Annual Meeting held May 18-21, 1992 in New Orleans, LA. It was issued by the Standards Council on July 17, 1992, with an effective date of August 14, 1992, and supersedes all previous editions.

The 1992 edition of this standard has been approved by the American National Standards Institute.

Changes other than editorial are indicated by a vertical rule in the margin of the pages on which they appear. These lines are included as an aid to the user in identifying changes from the previous edition.

Origin and Development of NFPA 97

This glossary of terms was prepared by the NFPA Committee on Chimneys and Heating Equipment. It was submitted to the Association for tentative adoption at the annual meeting in 1959 and was adopted on that basis. In the year following, minor revisions were made by the Committee, and it was submitted and received final adoption by the Association on May 18, 1960. The glossary was revised in 1961, 1966, and 1968. It was extensively revised in 1972, and additional definitions were included in 1979 and 1984.

The committee hopes that this glossary will be used by all NFPA committees responsible for standards involving chimneys, gas vents, and heat-producing appliances. The objective is to achieve uniformity in the use and definitions of the terms listed and defined in the glossary. The 1988 edition contained a new definition of "Smoke Chamber" and a change in the definition of "Fireplace Stove."

The 1992 edition contains several new definitions that were added to keep the glossary of terms consistent with new changes in NFPA 211 and the heat-producing appliance industry, e.g., pellet fuel, pellet fuel-burning appliance, and pellet vent.

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NOTICE: Information on referenced publications can be found in Chapter 2.

Chapter 1 Glossary of Terms

Accessible. When applied to a fixture, connection, appliance, or equipment shall mean having access thereto, but which may require the removal of an access panel, door, or similar obstruction.

Accessible, Readily. Capable of being reached easily and quickly for operation, adjustment, or inspection, without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders, chairs, etc.

Air Change. A quantity of air, provided through a fuel burner, equal to the volume of furnace and boiler gas passes. [Air volume to be calculated at 14.7 psia (101 kPa) and 70° (21.1°C).] (*Also see "Purge."*)

Air Combustion. The air required to provide for the complete combustion of fuel and usually consisting of primary air, secondary air, and excess air.

Excess Air. Air supplied for combustion in excess of theoretical air.

Primary Air. The air introduced into a burner that mixes with the fuel before it reaches the ignition zone.

Secondary Air. The air externally supplied to the flame in the combustion zone.

Theoretical Air. The chemically correct amount of air required for complete combustion of a given quantity of a specific fuel.

Air Conditioning. The treatment of air to control simultaneously its temperature, humidity, cleanness, and distribution to meet the requirements of a conditioned space.

Air Dilution. The air that enters the relief opening of a draft hood or draft diverter, or the air that enters another opening in an appliance flue or venting system.

Air Duct. Conduit or passageway for conveying air to or from heating, cooling, air conditioning, or ventilating equipment, but not including the plenum.

Air Filter. (Fire Hazard Classification)

Class 1. A Class 1 air filter is one that, when clean, does not contribute fuel when attacked by flame and emits only negligible amounts of smoke when tested by the method of UL 900, *Standard Test Performance of Air Filter Units*.

Class 2. A Class 2 air filter is one that, when clean, burns moderately when attacked by flame or emits moderate amounts of smoke, or both, when tested by the method of Underwriters Laboratories Inc. Standard 900.

Air Heater. An indirect-fired appliance intended to supply heated air for space heating and other purposes, but not intended for permanent installation.

Air Seal. Air supplied to any device at a significantly higher pressure than the surrounding air for the specified purpose of excluding contamination by the surrounding atmosphere.

Air Shutter. An adjustable device for varying the size of the air inlet(s) regulating primary or secondary air.

Air Shutter, Automatically Operated. An air shutter operated by an automatic control.

Air Shutter, Manually Operated. An air shutter manually set and locked in the desired position.

Alarm. An audible or visible signal indicating an off-standard or abnormal condition.

Aluminum Coated Steel. An aluminum-coated steel in which the bond between the steel and the aluminum is an iron-aluminum alloy.

Antiflooding Device. A safety control that causes the flow of (liquid) fuel to be shut off upon a rise in fuel level or upon receiving excess fuel, and that operates before the hazardous discharge of fuel can occur.

Appliance. An appliance is utilization equipment, normally built in standardized sizes or types, that is installed or connected as a unit to perform one or more functions such as clothes washing, air conditioning, food mixing, cooking, heating, refrigeration, etc.

Appliance, Automatically Lighted Fuel-Burning. A fuel-burning appliance in which fuel to the main burner is normally turned on and ignited automatically.

Appliance, Building Heating. Fuel-burning and electric boilers operating at not over 50 psig (345 kPa) pressure, central furnaces, and heaters intended primarily for heating spaces having volume exceeding 25,000 cu ft (708 m³).

Appliance, Cooking, Floor-Mounted Restaurant-type. A range, oven, broiler, or other miscellaneous cooking appliance, of a type designated for use in hotel and restaurant kitchens and for mounting on the floor.

Appliances, Counter, Gas. Appliances such as gas-operated coffee brewers and coffee urns and any appurtenant water-heating equipment, food and dish warmers, hot plates, and griddles.

Appliances, Industrial

(a) **Low-Heat Industrial Appliance.** An industrial appliance such as a commercial cooking range, pressing machine boiler at any pressure, bake oven, candy furnace,

stereotype furnace, drying and curing appliance, or other process appliances in which materials are heated or melted at temperatures (excluding flue-gas temperatures) not exceeding 600°F (316°C). Appliances otherwise classed as medium-heat appliances may be considered as low-heat appliances if not larger than 100 cu ft (2.83 m³) in size excluding any burner equipment and blower compartment.

(b) **Medium-Heat Industrial Appliance.** An industrial appliance such as an annealing furnace (glass or metal), charcoal furnace, galvanizing furnace, gas producer, commercial or industrial incinerator, or steam boiler operating at over 50 psig (345 kPa) pressure where such appliance is larger than 100 cu ft (2.83 m³) in size, or other furnaces classified as medium-heat appliances in accordance with nationally recognized good practice. Appliances otherwise classed as medium-heat appliances may be considered as low-heat appliances if not larger than 100 cu ft (2.83 m³) in size excluding any burner equipment and blower compartment.

(c) **High-Heat Industrial Appliance.** An industrial appliance such as a billet and bloom furnace, blast furnace, brass melter, cupola, glass furnace, open-hearth furnace, or ceramic kiln, and vitreous enameling oven (ferrous metals) where such appliances are larger than 100 cu ft (2.83 m³) in size, or other furnaces classified as high-heat appliances in accordance with nationally recognized good practice.

Appliance, Portable. A self-contained, freestanding appliance designed to be carried or moved safely from one location to another.

Appliance, Residential-type Heating. Fuel-burning and electric heating appliances, except high-pressure steam boilers, for heating building spaces having a volume of not more than 25,000 cu ft (708 m³) and other heat-producing appliances of the type mainly used in residences, but which may be used in other buildings, such as cooking stoves and ranges, clothes dryers, fireplace stoves, domestic incinerators, laundry stoves, water heaters, and heat pumps.

Appliance Casing (Jacket). An enclosure forming the outside of the appliance.

Appliance Flue. The flue passages within an appliance.

Appliance Branch Fuel Piping. Any run of piping or tubing, and fittings, not part of an appliance, that is used to convey fuel from the main piping manifold to a heat-producing appliance.

Ash. Solid residue that remains after combustion is complete.

Ash Receptacle Door. A door below the grade level providing access to the ash receptacle.

Atomizing Medium. A supplementary fluid, such as steam or air, that assists in breaking down oil into a finely divided state.

Atmospheric Tank. A storage tank that has been designed to operate at pressures from atmospheric through 0.5 psig (3.45 kPa).

Attic-type Heating Appliance. A heating appliance designed specifically for installation in an attic or in a space with low headroom, normally unoccupied.

Automatic Electric Igniter. A device for fuel burners designed to utilize electric energy for ignition of a fuel-air mixture at the burner.

Baffle. An object placed in an appliance to change the direction or retard airflow, air-fuel mixtures, or flue gases.

Base. The main supporting frame or structure of an assembly, exclusive of legs.

Blower. A fan used to force air under pressure into an affected area.

Body. The principal structure of an appliance, including supporting frame.

Boiler. A closed vessel for heating water or a liquid or for generating steam or vapor by direct application of heat. It is usually an indirect-fired fuel-burning or electrically heated appliance.

Boiler, Combination — Fuel. A single boiler unit designed to burn more than one type of fuel (gas, oil, or solid), either separately or simultaneously, using either separate or common combustion chambers and flues.

Boiler, High-Pressure. A boiler for generating steam at pressures in excess of 15 psig (103 kPa), or for heating water to a temperature in excess of 250°F (121°C) or at a pressure in excess of 160 psig (1103 kPa).

Boiler, Hot Water Supply. A low-pressure hot water boiler having a volume exceeding 120 gal (454 L), or a heat input exceeding 200,000 Btus per hour (58.6 kWh), or an operating temperature exceeding 200°F (93°C) that provides hot water to be used externally to itself.

Boiler, Low-Pressure. A boiler for generating steam at pressures not in excess of 15 psig (103 kPa) or for furnishing water at a temperature not in excess of 250°F (121°C) at pressures not in excess of 160 psig (1103 kPa).

Boiler, Supplementary. A boiler designed to burn one type of fuel (gas, oil, or solid) that is intended for supplementing a boiler burning another type of fuel (gas, oil, or solid) by means of a common heat transfer medium.

Bond. As referring to bricklaying and masonry chimneys, that connection between brick, stone, or other masonry units formed by lapping them upon one another in carrying up the work, so as to form an inseparable mass.

Breeching. The conduit conveying flue gas from the appliance to the chimney.

Btu. Abbreviation for British Thermal Unit. The quantity of heat required to raise the temperature of 1 pound of water 1°F.

Burner, Combination Gas-Oil. A burner designed to burn either gas or oil or both simultaneously.

Burner, Conversion Gas. A burner designed to burn gas in an appliance originally designed to utilize another fuel.

Burner, Dual Fuel. A burner designed to burn either gas or oil but not both simultaneously.

Burner, Automatically Ignited. A burner equipped so that main burner fuel may be turned on and ignited automatically.

Burner, Manually Ignited. A burner equipped so that main burner fuel is turned on only by hand and ignited under supervision.

Burner, Mechanical Draft-type. A burner that includes a power-driven fan, blower, or other mechanism as the primary means for supplying the air for combustion.

Burner, Natural Draft-type. A burner that depends primarily on the natural draft created in the chimney or venting system to induce the air required for combustion into the burner.

Central Heating Appliance. A stationary heating appliance comprising the following classifications: boilers, central furnaces, floor furnaces, and wall furnaces. A floor-mounted unit heater to be connected to a duct system is classified also as a central heating appliance.

Central Warm Air Heating System. A heating system consisting of a central furnace connected to a supply system and a return system. (See also "*Furnace, Central Warm Air.*")

Centralized Oil Distribution System. A system of piping through which oil is supplied from a remote central supply tank or tanks to one or more buildings, mobile homes, recreational vehicles, or other structures.

Chimney. One or more passageways, vertical or nearly so, for conveying flue gases to the outside atmosphere. (See also "*Gas Vent*" and "*Venting System.*")

Factory-Built Chimney. A chimney composed of listed factory-built components assembled in accordance with the terms of listing to form the completed chimney.

Masonry Chimney. A field-constructed chimney of solid masonry units, bricks, stones, listed masonry chimney units or reinforced portland cement concrete, lined with suitable chimney flue liners built in accordance with applicable building code requirements.

Metal Chimney. A field-constructed chimney of metal made in accordance with applicable building code requirements.

Chimney Cap. A protective covering or housing for the top of a chimney intended to prevent the entry of rain, snow, animals, birds, etc., and to prevent downdrafts.

Chimney Connector. The pipe that connects a fuel-burning appliance to a chimney.

Cleanout Opening. An opening or hole in a chimney, usually located near its base, designed to allow access to the flue for purposes of removing ash, creosote, soot, and other extraneous matter that may become trapped.

Clearance. The distance between a heat-producing appliance, chimney, chimney connector, vent, vent connector, or plenum, and other surfaces.

Closed Water Piping System. A system of water piping where a check valve or other device prevents the free return of water or steam to the water main.

Clothes Dryer. A device used to dry wet laundry by means of heat derived from the combustion of fuel or from electric heating elements. Dryer classifications are as follows:

Type 1 Clothes Dryer. Factory-built package, multiple produced. Primarily used in family living environment. May or may not be coin-operated for public use. Usually the smallest unit physically and in function output.

Type 2 Clothes Dryer. Factory-built package, multiple produced. Used in business with direct intercourse of the function with the public. May or may not be operated by public or hired attendant. May or may not be coin-operated. Not designed for use in individual family living environment. May be small, medium, or large in relative size.

Combustible Material. Material made of or surfaced with wood, compressed paper, plant fibers, plastics, or other material that will ignite and burn, whether flameproofed or not, or whether plastered or unplastered.

Combustion. As used herein, refers to the rapid oxidation of fuel accompanied by the production of heat or heat and light.

Combustion Chamber. That portion of an appliance within which combustion occurs.

Combustion, Complete. The complete oxidation of a fuel.

Combustion Detector. That part of a primary safety control that is responsive directly to flame properties.

Combustion, Incomplete. Burning with an insufficient supply of air so the burning substance is only partially consumed and could be burned further with additional air supply.

Combustion Products. Effluents resulting from the combustion of a fuel including the inerts, but excluding excess air.

Combustion Safeguard. See "Control, Primary Safety."

Combustion Tests. The sampling of combustion products to determine the percentage of constituents and the temperature of same above ambient.

Combustion Volume. The space required for the satisfactory burning of the fuel.

Condensate (Condensation). The liquid that separates from a gas (including flue gases) due to a reduction in temperature.

Condenser. A vessel or arrangement of pipe or tubing in which the vapor is liquefied by the removal of heat.

Confined Space. A space whose volume is less than 50 cu ft per 1,000 Btu per hr (1.42 m³ per 293 W) of the aggregate input rating of all appliances installed in that space.

Connector, Gas Appliance. A listed product used to connect a gas appliance to the building gas supply.

Constant-Level Valve. A device for maintaining within a reservoir a constant level of oil fuel for delivery to an oil burner.

Control. A device designed to regulate the fuel, air, water, or electrical supply to the controlled equipment. It may be automatic, semiautomatic, or manual.

Control, Automatic. A control having a self-acting or self-regulating mechanism that performs a required act at a predetermined point in an operation.

Control, Fan. An automatic control responsive to changes in temperature, intended to control the operation of the fan on forced-air appliances.

Control, Input (Combustion). A control that automatically regulates the firing rate at predetermined air-fuel ratio in accordance with load demand.

High-Low Firing. The action of a combustion control that positions the air and fuel supply for low- and high-fire in accordance with load demand.

Modulating. The action of a combustion control that gradually varies the air and fuel supplies within limits in accordance with load demand.

Control, Limit. An automatic safety control responsive to changes in fluid flow or level, pressure, or temperature, that is normally set beyond the operating range for limiting the operation of the controlled equipment by shutting off the energy supply.

Control, Operating. A control, other than a safety control or interlock, to start or regulate burner firing according to load demand and to stop or regulate firing on satisfaction of demand or upon reaching normal temperature or pressure in the appliances being fired. Operating controls may also actuate auxiliary equipment.

Control, Primary Safety (Combustion Safeguard). A safety control responsive directly to flame properties that senses the presence or absence of flame and, in event of ignition failure or unintentional flame extinguishment, causes safety shutdown.

Recycling-type Primary Safety Control. A primary safety control for automatically lighted burners that, upon accidental flame failure during a normal firing cycle and the subsequent shutoff of main burner fuel, will provide, after a preestablished shutdown period and under a normal starting program, one attempt to automatically light the main burner.

Nonrecycling-type Primary Safety Control. A primary safety control that, upon accidental flame failure during a normal firing cycle, causes a safety shutdown.

Relight-type Primary Safety Control. A primary safety control providing interrupted ignition for automatically lighted burners that, upon accidental flame failure during a normal firing cycle, will cause the ignition energy to be restored in not more than 0.8 seconds; then, if the main burner flame is not established, causes a safety shutdown.

Control, Safety. Automatic controls (including relays, switches, and other auxiliary equipment used in conjunction therewith to form a safety-control system) that are intended to prevent unsafe operation of the controlled equipment.

Control Circuit, Safety. A circuit involving one or more safety controls.

Corbel. Units of masonry projecting from or stepping upward and outward from the face of a wall or chimney in courses to form a support or ledge for a beam, rafter, or other member.

Cubic Foot of Gas. The amount of gas that would occupy 1 ft³ (0.0283 m³) when at a temperature of 60°F (16°C), saturated with water vapor and under a pressure equivalent to that of 30 in. (101 kPa) of mercury.

Damper. A valve or plate for controlling draft or the flow of gases, including air.

Damper, Automatically Operated. A damper operated by an automatic control.

Damper, Fire. A damper arranged to seal off airflow automatically through part of an air duct system, so as to restrict the passage of heat. A fire damper may also be used as a smoke damper if location lends itself to the dual purpose.

Damper, Flue Gas. A damper located on the downstream side of the combustion chamber of a fuel-burning appliance, usually in a flue passage of the appliance or in the chimney or vent connector.

Damper, Manually Operated. An adjustable damper manually set and locked in the desired position.

Damper, Smoke. A damper arranged to seal off airflow automatically through a part of an air duct system, so as to restrict passage of smoke. A smoke damper may be a standard louvered damper serving other control functions, if location lends itself to the dual purpose. A smoke damper does not need to meet all the requirements of a fire damper.

Deep-Fat Fryer, Restaurant-type. An appliance including a cooking vessel in which oils or fats are placed to such a depth that the cooking food is essentially supported by displacement of the cooking fluid rather than by the bottom of the vessel, designed primarily for use in hotels, restaurants, clubs, and similar institutions.

Design Working Pressure. The maximum allowable working pressure for which a specific part of a system is designed.

Detector, Combustible Gas or Vapor. An instrument for determining concentration of combustible gas or vapor in the air.

Dilution Air. Air that enters a draft hood or draft regulator and mixes with the flue gases.

Direct-Fired Appliance. A fuel-burning appliance in which the products of combustion (flue gases) are mixed with the medium (e.g., air) being heated.

Direct-Fired Oven. An oven in which the products of combustion from fuel burning flow through the oven compartment.

Direct Vent Appliance (Sealed Combustion System Appliance). A system consisting of an appliance, combustion air and flue gas connections between the appliance and the outside atmosphere, and a vent cap supplied by the manufacturer, and constructed so that all air for combustion is obtained from the outside atmosphere and all flue gases are discharged to the outside atmosphere.

Diversity Factor. Ratio of the maximum probable demand to the maximum possible demand.

Draft. The pressure differential that causes the flow of air or gases through a chimney, gas vent, or venting system.

Mechanical Draft. Draft produced by a fan or an air or steam jet. Where a fan is located so as to push the flue gases through the chimney or vent, the draft is forced. Where the fan is located so as to pull the flue gases through the chimney or vent, the draft is induced.

Natural Draft. Draft produced by the difference in the weight of a column of flue gases within a chimney or vent and a corresponding column of air of equal dimension outside the chimney or vent.

Draft Hood. A device built into a gas appliance, or made a part of a chimney connector or vent connector from a gas appliance, that is designed to:

- (a) permit the ready escape of flue gases in the event of zero draft, a back draft, or stoppage beyond the draft hood;
- (b) permit the ready escape of the back pressure from a back draft so it does not enter the gas appliance; and
- (c) neutralize possible effects of excess draft on the operation of the appliance.

Draft Hood Relief Opening. The opening provided in a draft hood to permit the ready escape to the atmosphere of the flue gases in the event of no draft, back draft, or stoppage beyond the draft hood, and to permit inspiration of air into the draft hood to neutralize strong chimney or vent updraft.

Draft Regulator, Barometric. A device built into a fuel-burning appliance, or made a part of a chimney connector or vent connector, that functions to reduce excessive draft through an appliance to a desired value by admitting ambient air into the appliance chimney, chimney connector, vent, or vent connector.

Drip. The container placed at a low point in a system of piping to collect condensate and from which it may be removed.

Duct System. A continuous passageway for the transmission of air that, in addition to ducts, may include duct fittings, dampers, plenums, fans, and accessory air-handling equipment.

Electrical Circuits.

Line-Voltage Circuit. A circuit involving a potential of not more than 600 volts and having circuit characteristics in excess of those of low-voltage and isolated limited secondary circuits.

Low-Voltage Circuit. A circuit involving a potential of not more than 30 volts and supplied by a primary battery or by a standard Class 2 transformer, or by a suitable combination of transformer and fixed impedance that, as a unit, complies with all the performance requirements for a Class 2 transformer. (A circuit derived from a source of supply classified as a line-voltage circuit, by connecting resistance in series with the supply circuit as a means of limiting the voltage and current, is neither considered to be a low-voltage nor an isolated secondary circuit.)

Isolated Limited Secondary Circuit. A circuit of limited energy derived from an isolated secondary winding of a transformer having a maximum capacity of 100 volt-amperes and open-circuit secondary voltage rating not exceeding 1000 volts.

Electrical Diagrams.

Connection. A diagram that shows the connections of an installation or its component devices or parts. It may cover internal or external connections, or both, and contains such detail as is needed to make or trace connections that are involved. The connection diagram usually shows general physical arrangement of the component devices or parts.

Schematic. A diagram that shows, by means of graphic symbols, the electrical connections and functions of a specific circuit arrangement. The schematic diagram facilitates tracing the circuit and its functions without regard to the actual physical size, shape, or location of the component device or parts.

(a) **Ladder Form of Schematic.** A diagram drawn in the form of a vertical ladder. The outer vertical lines represent the electrical supply conductors. The horizontal steps represent each individual circuit with all component devices.

Electrical Enclosure. A case enclosing electrical equipment and wiring that is designed expressly to prevent:

- (a) a person from accidentally contacting uninsulated live parts,
- (b) burning or molten materials from contacting adjacent combustible materials or falling onto combustible materials,
- (c) conductive or combustible materials from dropping onto uninsulated live parts,

(d) mechanical abuse of electrical equipment not designed or approved to withstand the intended normal use without such additional enclosure.

Engineered Venting or Chimney System. A system that has been sized and configured in accordance with approved engineering methods, such as:

- The Vent Capacity Tables in NFPA 54, *National Fuel Gas Code*.
- The fuel burning manufacturers' venting instructions.
- Drawings, calculations, and specifications provided by the venting equipment manufacturer or by a professional engineer.
- Use of calculations from the chapter on Chimney, Gas Vent and Fireplace Systems of the Equipment Volume of the ASHRAE Handbook.
- Application of the VENTII computer program, developed under Gas Research Institute sponsorship for vent design and analysis.

Exhauster, Air. A fan used to withdraw air from an affected area.

Factory-Built Appliance. A manufactured appliance furnished by the manufacturer as a single assembly or as a package set of subassemblies or parts, and including all the essential components necessary for it to function normally when installed as intended.

Fan. An assembly comprising blades or runners and housings or casings, and being either a blower or exhauster.

Fireplace. A hearth, fire chamber, or similarly prepared place and a chimney.

Factory-Built Fireplace. A fireplace composed of listed factory-built components assembled in accordance with the terms of listing to form the completed fireplace.

Masonry Fireplace. A hearth and fire chamber of solid masonry units such as bricks, stones, listed masonry units, or reinforced concrete, provided with a suitable chimney.

Fireplace Stove. A freestanding, chimney-connected, solid fuel-burning appliance that is designed to be operated with the fire chamber either open or closed.

Flame-Failure Response Time. The interval between the occurrence of flame extinguishment and de-energizing the safety shutoff means.

Flame Safeguard. See "Control, Primary Safety."

Flame Spread Rating. The flame spread rating of materials as determined by NFPA 255, *Method of Test of Surface Burning Characteristics of Building Materials*; ASTM E 84, *Surface Burning Characteristics of Building Materials*; and UL 723, *Tests for Surface Burning Characteristics of Building Materials*. Such materials are listed in the Underwriters Laboratories Inc. Building Materials List under "Hazard Classification (Fire)."

Floor Protector. Noncombustible surfacing applied to the floor area underneath and extending in front, to the sides, and to the rear of a heat-producing appliance.

Flue. The general term for a passage through which flue gases pass from the combustion chamber to the outer air.

Appliance Flue. The flue passage within an appliance.

Chimney Flue. The passage in a chimney for conveying the flue gases to the outside atmosphere.

Dilution Flue. A passage designed to effect the dilution of flue gases with air before discharge from an appliance.

Flue Collar. That portion of an appliance designed for attachment of a chimney or vent connector or a draft hood.

Flue Gases. Combustion products from fuel-burning appliances, plus excess air.

Flush-to-Wall-type Range. A range designed for installation in direct contact with back and side walls without spacing means.

Fuel Gases. Gas such as manufactured gas, natural gas, undiluted liquefied petroleum gas (vapor phase only), liquefied petroleum gas-air mixture, or mixtures of these gases that would ignite in the presence of oxygen.

Manufactured Gas. A mixture of gases usually composed of various proportions of some of the following gases:

(a) *Coal gas* — formed by distillation or cracking of bituminous coal.

(b) *Coke-oven gas* — produced in a similar manner as a by-product in the manufacture of coke.

(c) *Carbureted water gas* — formed by flowing steam through incandescent carbon.

(d) *Oil gas* — made by "cracking" petroleum oils.

Natural Gas. A mixture of gases, principally methane and ethane obtained from gas wells and from which less volatile hydrocarbons such as propane and butane have been removed, leaving a mixture of gases that will remain in the gaseous state at all pressures and temperatures encountered in the distribution system.

Liquefied Petroleum Gases. Material composed predominantly of any of the following hydrocarbons, or mixtures of them: propane, propylene, butanes (normal butane or iso-butane), and butylenes.

LP-Gas-Air Mixture. Liquefied petroleum gases distributed at relatively low pressures and normal atmospheric temperatures that have been diluted with air to produce desired heating value and utilization characteristics.

Fuel Oil. Any hydrocarbon oil as specified by ASTM D 396, *Specifications for Fuel Oils*, or the Canadian Government Specification Board, 3-GP-2e, *Heating Fuel Oil*, and having a flash point not less than 100°F (38°C).

Furnace, Central Warm-Air. A self-contained indirect-fired or electrically heated appliance designed to supply heated air through ducts to spaces remote from or adjacent to the appliance location.

Forced-Air-type Central Furnace. A central furnace equipped with a blower that provides the primary means for circulation of air.

(a) **Attic-type Central Furnace.** A forced-air-type furnace designed specifically for installation in an attic or in a space with low headroom, normally occupied.

(b) **Downflow-type Central Furnace.** A forced-air-type furnace designed with airflow essentially in a vertical path, discharging air at or near the bottom of the furnace.

(c) **Horizontal-type Central Furnace.** A forced-air-type furnace designed with airflow through the furnace essentially in a horizontal path.

(d) **Upflow-type Central Furnace.** A forced-air-type furnace designed with airflow essentially in a vertical path, discharging air at or near the top of the furnace.

Gravity-type Central Furnace. A central furnace depending primarily on circulation of air by gravity.

Gravity-type Central Furnace with Integral Fan. A central furnace equipped with a fan as an integral part of its construction and operable on gravity systems only. The fan is used only to overcome the internal resistance to airflow.

Gravity-type Central Furnace with Booster Fan. A central furnace equipped with a booster fan that does not materially restrict free circulation of air by gravity flow when such a fan is not in operation.

Furnace, Combination — Fuel. A single furnace unit designed to burn more than one type of fuel (gas, oil, or solid), either separately or simultaneously, using either separate or common combustion chambers and flues.

Furnace, Duct. A central furnace designed for installation in a duct of an air distribution system to supply warm air for heating and that depends for air circulation on a blower not furnished as part of the furnace.

Furnace, Floor. A self-contained indirect-fired or electrically heated furnace designed to be suspended from the floor of the space to be heated. A fuel-burning floor furnace is designed to take air for combustion from outside the space being heated and is provided with means for observing flame and lighting the appliance from such space.

Gravity-type Floor Furnace. A floor furnace depending primarily on circulation of air by gravity. This classification shall also include floor furnaces equipped with booster-type fans that do not materially restrict free circulation of air by gravity flow when such fans are not in operation.

Fan-type Floor Furnace. A floor furnace equipped with a blower that provides the primary means for circulation of air.

Furnace, Supplementary. A furnace designed to burn one type of fuel (gas, oil, or solid) that is intended for supplementing a central warm-air furnace burning another type of fuel (gas, oil, or solid) by means of a common warm-air supply plenum.

Gallon of Oil. The amount of oil that will occupy 1 standard US gal [231 cu in. (3.79 dm³)] at a temperature of 60°F (16°C).

Gas Vent. A passageway, vertical or nearly so, composed of listed factory-built components assembled in accordance with the terms of listing for conveying flue gases from gas appliances or their vent connectors to the outside atmosphere.

Type B Gas Vent. A gas vent for venting gas appliances with draft hoods and other gas appliances listed for use with Type B gas vents.

Type BW Gas Vent. A gas vent for venting listed gas-fired vented wall furnaces.

Governor, Zero. A regulating device that is normally adjusted to deliver gas at atmospheric pressure within its flow rating.

Header. With reference to chimneys, a beam set at right angles to floor or roof joists to provide support and framing around the opening.

Hearth. The floor area within the fire chamber of a fireplace or a fireplace stove.

Hearth Extension. The noncombustible surfacing applied to the floor area extending in front of and at the sides of the hearth opening of a fireplace or a fireplace stove; also as applied to the floor area beneath a fireplace stove or beneath an elevated overhanging fireplace hearth.

Heat Exchanger. A chamber in which heat resulting directly from combustion of fuel, or heat from a medium such as air, water, or steam, is transferred through the walls of the chamber to air passing through the exchanger, or in which heat from electric resistors is transferred to the air.

Heat Exchanger, Direct. A heat exchanger in which heat generated in the combustion chamber of an appliance is transferred directly through walls of the appliance to the heating medium (such as air, steam, or water) held in close contact with the combustion chamber walls. It is a self-contained combustion and heat-transfer device, hence a direct heat-transfer device.

Heat Exchanger, Indirect. A heat exchanger that encloses or contains a heating medium (such as air, electric resistors, steam, or water), the heat from which is transferred to another heating medium separately contained in close contact with or directed through the heat exchanger. It is an indirect heat-transfer device.

Heat-Producing Appliance. An appliance that produces heat by utilizing electric energy or by burning fuel.

Heat Pump. A refrigeration system arranged to accomplish either heating or cooling.

Heat Reclaimer (Chimney Connector Type). A heat exchanger intended to be installed in a chimney connector between a heating appliance and the chimney to transfer heat from the flue gases through metal to air or water.

Heating Surfaces. All surfaces of a heat exchanger that transmit heat from flames, flue gases, or a heating medium to another medium to be heated.

High Gas Pressure Switch. A pressure-actuated switch arranged to open when the gas supply pressure exceeds the normal supply pressure.

High Steam Pressure Switch. A pressure-actuated switch arranged to open when the steam pressure exceeds a pre-set pressure.

Hot Plate, Domestic. An appliance consisting of one or more open-top-type burners or electric elements mounted on short legs or a base.

Humidity, Relative. The amount of water vapor or moisture held in suspension by gas or air, expressed as a percentage of the amount of moisture that would be held in suspension at the same temperature if saturated.

Igniter. A device that provides energy to immediately ignite a pilot or main burner.

Igniter, Continuous. An igniter that is continuously maintained at ignition temperature throughout the time the burner is in service, whether the main burner is firing or not.

Igniter, Intermittent. An igniter that is automatically energized each time the main burner is to be fired. Ignition is maintained during the entire period that the main burner is firing.

Igniter, Interrupted. An igniter that is automatically energized each time the main burner is to be fired. Ignition is maintained during the main burner flame-establishing period and then automatically cut off.

Igniter, Manual. A device or source that is manually energized and where the fuel to the main burner is turned on only by hand and ignited under supervision of the operator.

Igniter, Proved. An igniter that is supervised by a primary safety control sensing the presence of energy for ignition prior to permitting the main burner fuel to be delivered to the combustion zone.

Igniter, Unproved. An igniter assumed to be energized during the main burner flame-establishing period.

Ignition, Direct Electric. Ignition of a main burner flame by an electric-ignition source such as a high-voltage spark or hot wire.

Illuminating Appliance — Gas-Fired. A gas appliance designed for illumination.

Incinerator. An appliance or combustion chamber for the reduction by burning of rubbish, garbage, and other wastes.

Residential-type Incinerators. An incinerator for the burning of ordinary combustible waste material and garbage (Type 2 Waste) incidental to residential occupancy and having a firebox or charging compartment of not greater than 5 cu ft (0.142 m³) in capacity. Residential-type incinerators may be self-contained, factory-made units not requiring field construction, or may be of a built-in type designed to be encased in masonry or installed in a masonry wall or chimney.

Commercial-Industrial-type Incinerator (Class III, IV, V, VI, and VII). An incinerator having a charging capacity in excess of 5 cu ft (0.142 m³), suitable for a variety of wastes as shown below.

Incinerator Class	Waste Types
Class III	Type 0, Type 1, or Type 2
Class IV	Type 3
Class V	Types 0 - 4 (Municipal Incinerators)
Class VII	Type 4
Class VII	Types 5 & 6

Chute-Fed Incinerators (Class IIA). An incinerator designed specifically to be fed refuse from one or more floors above the incinerator directly into the incinerator by a separate chute constructed with a positive means to avoid penetration by smoke or fumes and connected directly over the primary combustion chamber. The incinerator is built with a primary and secondary combustion chamber and a settling chamber. It may include a flue-gas washer or scrubber. A separate chimney serves to convey the combustion gases to the outdoors. This class of incinerator is suitable for Type 1 and Type 2 wastes. They are generally used in residential and institutional buildings, including apartments, clubs, dormitories, churches, schools, and other occupancies where Type 1 and Type 2 wastes are to be incinerated.

Flue-Fed Incinerators (Class II). An incinerator served by a single chimney flue that serves also as the charging chute. Refuse is fed directly to the incinerator through this chimney flue from one or more floors above the incinerator. This class of incinerator is suitable for waste materials and garbage incidental to residential occupancy in single and multifamily buildings, Type 1 and Type 2 wastes. This class of incinerator is generally used in residential and institutional buildings, including apartments, clubs, dormitories, churches, schools, and other occupancies where Type 1 and Type 2 wastes are to be incinerated.

Indirect-Fired Appliance. A fuel-burning appliance in which products of combustion (flue gases) are not mixed in the appliance with the medium (e.g., air) being heated.

Indirect-Fired Oven. A fuel-fired oven in which the products of combustion do not flow through the oven compartment.

Inerting. The introduction of an inert medium into a furnace, pulverizer, or other enclosure in order to reduce the oxygen content of the resulting mixture below the limits of flammability.

Infrared Radiant Heater. A heater that directs a substantial amount of its energy output in the form of infrared radiant energy into the area to be heated. Such heaters may be of either the vented or unvented type.

Input Rating. The fuel-burning capacity of an appliance in Btu per hour as specified by the manufacturer.

NOTE: Appliance input ratings are based on sea level operation and need not be changed for operation up to 2,000 ft (610 m) elevation. For operation at elevations above 2,000 ft (610 m), input ratings should be reduced at the rate of 4 percent for each 1,000 ft (305 m) above sea level.

Interlock. A control to prove the physical state of a required condition and to furnish that proof to the primary safety-control circuit.

Kerosene Stove. An unvented, self-contained, self-supporting kerosene-burning range or room heater equipped with an integral fuel tank not exceeding 2 gal capacity.

Kettle, Gas-Fired. An appliance with a cooking chamber that is heated either by a steam jacket in which steam is generated by gas heat or by direct gas heat applied to the cooking chamber.

Kilowatt Hour (kWh). A unit of work or energy equal to that done by 1 kilowatt acting for 1 hour — approximately 1.34 horsepower.

Light-Off. To establish combustion of fuel entering a combustion chamber.

Limited-Combustible. A material, not complying with the definition of noncombustible material, that, in the form in which it is used, has a potential heat value not exceeding 3,500 Btu per lb (8,141 Kj/Kg) and complies with one of the following paragraphs (a) or (b). Materials subject to increase in combustibility or flame spread rating beyond the limits herein established through the effects of age, moisture, or other atmospheric condition shall be considered combustible.

(a) Materials having a structural base of noncombustible material, with a surfacing not exceeding a thickness of $\frac{1}{8}$ in. (3.2 mm) that has a flame spread rating not greater than 50.

(b) Materials, in the form and thickness used, other than as described in (a), having neither a flame spread rating greater than 25 nor evidence of continued progressive combustion and of such composition that surfaces that would be exposed by cutting through the material on any plane would have neither a flame spread rating greater than 25 nor evidence of continued progressive combustion.

Lintel. As used referring to masonry fireplaces, that horizontal noncombustible member, usually of masonry or steel, spanning the opening of a masonry fireplace to support the load above.

Loads, Connected. Sum of the rated Btu input to individual appliances connected to a piping system.

Lockout Timing. That period of time between the initial ignition trial and lockout by the ignition control system.

Low Gas Pressure Switch. A pressure-actuated switch arranged to open when the gas supply pressure falls below normal gas supply pressure.

Low Oil Pressure Switch. A pressure-actuated switch arranged to open when the oil supply pressure falls below the required limit.

Low Oil Temperature Switch. A temperature-actuated switch arranged to open when the oil temperature falls below the required limits.

Low-Water Cutoff. A device arranged to shut off fuel or electrical energy when water level in a boiler falls to a predetermined low level.

Main Burner. A device or group of devices essentially forming an integral unit for the final conveyance of fuel or a mixture of fuel and air to the combustion zone, and from which combustion takes place to accomplish the function for which the appliance is designed.

Main-Burner Flame-Establishing Period. The length of time the main-burner fuel-safety shutoff valves are permitted to be open before the flame-sensing device is required to supervise the main burner flame.

Mantel. A shelf or facing ornament above a fireplace opening.

Manual Reset. The manual operation required after safety shutdown before an appliance can be restarted.

Manually Lighted Appliance. An appliance in which fuel to the main burner is turned on only by hand and ignited under supervision.

Manufacturer. The company or organization that evidences its responsibility by affixing its name or nationally registered trademark or trade name to the appliance concerned.

Masonry Unit, Solid. Masonry units whose net cross-sectional area in every plane parallel to the bearing surface is 75 percent or more of its gross cross-sectional area measured in the same plane.

Master Fuel Trip. A device for rapid automatic shutoff of all fuel, including igniters, to combustion equipment. This device has provision for both manual and automatic initiation.

Measured Gas. Gas that has passed through a meter, the volume of which has been registered by meter.

Mechanical Exhaust System. Equipment installed in and made a part of a duct, chimney, or vent, that will provide an induced draft.

Meter, Fuel. An instrument installed to measure the volume of fuel delivered through it.

Meter Set Assembly, Gas. The piping and fittings installed by the serving gas supplier to connect the inlet side of the meter to the gas service and to connect the outlet side of the meter to the customer's house or yard piping.

Mixer, Gas-Air. A device for mixing gas and air in any desired proportions.

Manual Mixer. A mixer that requires manual adjustments to maintain the desired air/gas ratio as rates of flow are changed.

Automatic Mixer. A mixer that automatically maintains within its rated capacity a substantially constant air/gas ratio at varying rates of flow. All types defined below can be designed to fit this classification.

Atmospheric Inspirator Mixer. A mixer using the kinetic energy of a jet of gas issuing from an orifice to entrain all or part of the air required for combustion. If gas for the jet is available at the spud at pressures below 1 psig (6.9 kPa), the mixer is defined as a "low-pressure atmospheric inspirator" mixer; if at 1 psig (6.9 kPa) or above, the mixer is designated as a "high-pressure atmospheric inspirator."

Air Jet Mixer. A mixer using the kinetic energy of a stream of air issuing from an orifice to entrain the gas required for combustion. In some cases, this type of mixer may be designed to entrain some of the air for combustion as well as gas.

Mechanical Mixer. A mixer using mechanical means to mix gas and air, neglecting entirely any kinetic energy in the gas and air, and compressing the resultant mixture to a pressure suitable for delivery to its point of use. Mixers in this group utilize either a centrifugal fan or some other type of mechanical compressor with a proportioning device on its intake through which gas and air are drawn by the fan or compressor suction. The proportioning device may be automatic or require manual adjustment to maintain the desired air/gas ratio as rates of flow are changed.

Modulate. To gradually vary fuel and airflows to a burner in accordance with load demand.

Monitor. To sense and alarm a condition requiring attention, without initiating corrective action.

Noncombustible Material. A material that, in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat. Materials reported as noncombustible, when tested in accordance with the ASTM E 136, *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C*, shall be considered noncombustible materials.

Normal Care. The periodic tasks usually performed to operate and maintain an appliance, such as air, fuel, pressure, and temperature regulation; cleaning; lubrication; and resetting of controls.

Normal Fuel Supply Pressure. The pressure at the fuel service connection for which the fuel-burning system has been designed.

Oil-Burning Stove. A self-contained, freestanding, above-the-floor, indirect-fired appliance equipped with one or more oil burners. It may be equipped with an integral oil tank or may be designed for connection to a separate oil supply tank.

Oil-Fired Unit. An appliance equipped with one or more oil burners and all the necessary safety controls, electrical equipment, and related equipment manufactured for assembly as a complete unit. This definition does not include kerosene stoves or oil stoves.

Operating Range. The region between the maximum input and minimum input in which appliance operation can be maintained, continuous, and stable.

Oven. A receptacle or compartment for cooking, baking, drying, or processing by means of heat.

Oven, Baking and Roasting. An oven used principally for food preparation.

Cabinet Oven. A single stationary deck oven having more than one deck heated by a single burner or group of burners.

Sectional Oven. A single stationary deck oven or one composed of one or more independently heated stationary decks.

Reel-type Oven. A single oven employing trays that are moved by mechanical means.

Pellet Fuel. A solid processed fuel of specified size and composition capable of being fed to the appliance combustion system at a controlled rate.

Pellet Fuel-Burning Appliance. A closed combustion pellet vent or chimney-connected solid pellet fuel-burning appliance incorporating a fuel-feed control mechanism.

Pellet Vent. A venting system composed of listed factory-built components assembled in accordance with the manufacturers instructions, for conveying flue gases from a listed pellet fuel-burning appliance to the outside atmosphere.

Pilot. A flame that is utilized to ignite fuel at a main burner or burners.

Pilot, Continuous. A pilot that burns without turndown throughout the entire time a burner is in service, whether the main burner is firing or not.

Pilot, Expanding. A continuously burning pilot that is automatically expanded to reliably ignite the main burner. The pilot may be turned down at the end of the main burner flame-establishing period.

Pilot, Intermittent. A pilot that is lighted automatically each time there is a call for heat. It burns during the entire period that the main burner is firing.

Pilot, Interrupted. A pilot that is lighted automatically each time there is a call for heat. The pilot fuel is cut off automatically at the end of the main burner flame-establishing period.

Pilot, Proved. A pilot flame supervised by a primary safety control that senses the presence of the pilot flame prior to permitting the main burner fuel to be delivered for combustion.

Pilot Flame-Establishing Period. The interval of time fuel is permitted to be delivered to a proved pilot before the primary safety control is required to prove pilot flame.

Pipe, Equivalent Length. The resistance of valves, controls, and fittings to flow, expressed as equivalent length of straight pipe for convenience in calculating pipe sizes.

Piping. Refers to either pipe or tubing, or both.

Pipe. A rigid conduit of iron, steel, copper, brass, aluminum, or plastic.

Tubing. A semirigid conduit of copper, steel, aluminum, or plastic.

Piping, Concealed. Piping that, when in place in the finished building, would require removal of permanent construction to gain access to the piping.

Piping, Exposed. Piping that will be in view in a finished structure.

Piping System. Piping or tubing, valves, and fittings used to connect fuel-burning utilization equipment to the source of supply.

Plenum. An air compartment, part of a distributing system, to which one or more ducts are connected.

Furnace Supply Plenum. A furnace plenum attached directly to, or an integral part of, the supply outlet of the furnace.

Furnace Return Plenum. A furnace plenum attached directly to, or an integral part of, the return-air inlet of the furnace.

Port. Any opening in a burner head through which fuel or an air-fuel mixture is discharged for ignition.

Portable Appliance. A self-contained, freestanding appliance designed to be carried or moved safely from one location to another.

Portable Kerosene Heater. An unvented, self-contained, self-supporting heater, with integral reservoir, designed to be carried from one location to another.

Prove. To establish by measurement or test the existence of a specific condition, such as flame, level, flow, pressure, or position.

Pump, Automatic Oil. A pump, not an integral part of an oil burner, that automatically pumps oil from the supply tank and delivers the oil by gravity under a constant head to an oil-burning appliance. The pump is designed to stop pumping automatically in case of total breakage of the oil supply line between the pump and the appliance.

Pump, Oil-Transfer. An oil pump, automatically or manually operated, that transfers oil through continuous piping from a supply tank to an oil-burning appliance or to an

auxiliary tank, and that is not designed to stop pumping automatically in case of total breakage of the oil supply line between the pump and the appliance.

Purge. To introduce air into the combustion chamber and the appliance flue passages in such volume and manner as to completely replace the air or gas-air mixture contained therein.

Purge Air Change. A quantity of air, provided through a fuel burner, equal to the volume of furnace and boiler gas passes. [Air volume to be calculated at 14.7 psia (101 kPa) and 70°F (21°C).]

Quick-Disconnect Device. A hand-operated device that provides a means for connecting and disconnecting an appliance or an appliance connector to a fuel supply and that is equipped with an automatic means to shut off the fuel supply when the device is disconnected.

Range. An appliance intended primarily for cooking, including roasting, baking, or broiling or any combination of these functions.

Range, Built-in Residential-type. A range designed to be recessed into, placed upon, or attached to counters, cabinets, walls, or partitions.

Range, Bungalow (Utility-type). A range having an additional section for gas, liquid, or solid fuel that is designed for space heating and heating a solid top section but not for oven heating.

Range, Residential-type. A range primarily for residential cooking purposes.

Range, Restaurant-type. A range of the type designed for use primarily in restaurant and hotel kitchens.

Range, Room Heater-type. A range having a separate room heater section.

Refrigerant. A substance used to produce refrigeration by its expansion or vaporization.

Refrigerating System. A combination of interconnected refrigerant-containing parts constituting one closed refrigerant circuit in which a refrigerant is circulated for the purpose of extracting heat.

Regulator, Gas Pressure. A device, either adjustable, nonadjustable, or convertible, for controlling and maintaining a uniform outlet gas pressure.

Adjustable Gas Pressure Regulator.

(a) **Spring-type, Standard Adjustment.** A regulator in which the regulating force acting on the diaphragm is derived principally from a spring, the loading of which is adjustable.

(b) **Spring-type, Limited Adjustment.** A regulator in which the regulating force acting on the diaphragm is derived principally from a spring, the loading of which is adjustable over a range or not more than 1.0 in. (249 Pa) water outlet pressure.

Nonadjustable Gas Pressure Regulator.

(a) **Spring-type.** A regulator in which the regulating force acting on the diaphragm is derived principally from a spring, the loading of which is not adjustable.

(b) **Weight-type.** A regulator in which the regulating force acting on the diaphragm is derived from a weight or combinations of weights.

Convertible Gas Pressure Regulator. A regulator whose adjustment means can be positioned from one predetermined outlet pressure setting to another predetermined outlet pressure setting with no intermediate pressure setting and without addition, deletion, or substitution of parts.

Regulator Vent. The opening in the atmospheric side of a regulator housing permitting the in-and-out movement of air to compensate for the movement of the regulator diaphragm.

Return System, Air Conditioning. An assembly of connected ducts, air passages or plenums, and fittings through which air from the space or spaces to be conditioned is conducted back to the cooling or heating unit.

Roof Jack. A factory-made assembly for conveying flue gases through a roof and that includes a flue-gas passage-way, insulating means, flashing, and cap.

Room Heater. A self-contained, freestanding, air-heating appliance intended for installation in the space being heated and not intended for duct connection.

Room Heater, Circulating. A room heater with an outer jacket surrounding the heat exchanger arranged with openings at top and bottom so that air circulates between the heat exchanger and the outer jacket. Room heaters that have openings in an outer jacket to permit some direct radiation from the heat exchanger are classified as radiant type.

Room Heater, Fireplace Stove, Combination. A chimney-connected, solid-fuel-burning room heater that is designed to be operated with the fire chamber either open or closed.

Room Heater, Radiant. A room heater designed to transfer heat primarily by direct radiation.

Room Heater, Solid Fuel. A chimney-connected, solid-fuel-burning room heater that is designed to be operated with the fire chamber closed.

Room Large in Comparison with the Size of the Appliance. A room having a volume equal to at least 12 times the total volume of a furnace and at least 16 times the total volume of a boiler. Total volume of furnace or boiler is determined from exterior dimensions and is to include fan compartment and burner vestibule, when used. When the actual ceiling height of a room is greater than 8 ft (2.44 m), the volume of the room is to be figured on the basis of a ceiling height of 8 ft (2.44 m).

Safe-Start Check. A checking circuit incorporated in a primary safety control circuit that prevents lighting-off if the combustion detector is in the unsafe (flame present)

position due to component failure within the control or the presence of actual or simulated flame.

Sealed Combustion System Appliance (Direct Vent Appliance). A system consisting of an appliance, combustion air, and flue gas connections between the appliance and the outside atmosphere, and a vent cap supplied by the manufacturer, and constructed so that all air for combustion is obtained from the outside atmosphere and all flue gases are discharged to the outside atmosphere.

Service Pipe. The pipe that brings the gas from the gas main to the meter.

Set Point. A predetermined value to which a control or interlock is adjusted and at which it performs its intended function.

Shutdown, Normal. Stopping burner operation by an operating control shutting off all fuel and ignition energy to the appliance.

Shutdown, Safety. Stopping burner operation by a safety control or interlock shutting off all fuel and ignition energy to the appliance in a manner requiring manual restart.

Smoke Chamber. In a fireplace system, the transitional area from the damper opening to the beginning of the flue liner.

Smoke Damper. A damper arranged to interrupt airflow automatically through a part of an air duct system, so as to restrict the passage of smoke. A smoke damper may be a louvered damper serving other control functions if location lends itself to the dual purpose. A smoke damper does not need to meet all the requirements of a fire damper.

Smoke Developed Rating. The smoke developed rating of materials as determined by NFPA 255, *Method of Test of Surface Burning Characteristics of Building Materials*; ASTM E 84, *Surface Burning Characteristics of Building Materials*; and UL 723, *Tests for Surface Burning Characteristics of Building Materials*.

Smoke Test. A procedure for ascertaining the tightness of a chimney and for detecting any cracks in a masonry chimney flue or deterioration or breaks in the integrity of a factory-built or metal chimney flue. The procedure involves igniting a smoke bomb or building a smoky fire in a fireplace or solid-fuel-burning appliance, covering the chimney termination and checking for smoke escape through the chimney walls.

Solid Fuel. Wood, coal, and other similar organic materials and any combination of them.

Solid-Fuel-Burning Appliance. A chimney-connected device that burns solid fuel designed for purposes of heating, cooking, or both.

Solid Masonry Construction. A bonded assembly of stones or solid masonry units.

Spark Arrestors. Screening material or a screening device attached to a chimney termination to prevent the passage of sparks and brands to the outside atmosphere.

Splay. See "Wash."

Steam Cooker. An appliance that cooks, defrosts, or reconstitutes food by direct contact with steam.

Steam Table. A covered tank designed to hold hot water and steam, in which food containers are supported immediately above the surface of the water to keep the food warm.

Steam-Jacketed Kettle. An appliance with a cooking chamber that is heated either by a steam jacket in which steam is generated or by direct heat applied to the cooking chamber.

Steel Fireplace Unit. A unit consisting of a steel firebox and an air chamber adjacent to the sides and rear of the firebox, used to construct a masonry fireplace. The unit usually has ducts to circulate air to and heated air from the air chamber to the living space.

Strainer, Fuel. A device to remove foreign matter from fuel.

Primary Strainer. The strainer through which all fuel first passes on its way to a burner, being upstream from any other strainer.

Secondary Strainer. A strainer downstream from the primary strainer, interposed in the fuel line between the primary strainer and the point at which fuel is delivered for combustion.

Supervise. To sense a condition requiring attention and initiate corrective action if necessary.

Supervised Flame. A flame whose presence or absence is detected by a primary safety control.

Supply System, Air Conditioning. An assembly of connected ducts, air passages or plenums, and fittings through which conditioned air is conducted from the cooling or heating unit to the space or spaces to be conditioned.

Tank, Oil Burner. A fuel-oil tank used in conjunction with an oil burner installation.

Auxiliary Tank. A tank having a capacity of not more than 60 gal (227 L) (50 Imp. gal), listed for installation in the supply piping between a burner and its main fuel supply tank. It may be included as an integral part of an automatic pump or a transfer pump, or may be a separate tank.

Gravity Tank. A supply tank from which the oil is delivered directly to the burner by gravity.

Integral Tank. A tank that is furnished by the manufacturer as an integral part of an oil-burning appliance.

Storage Tank. A separate tank that is not connected to the oil-burning appliance.

Supply Tank. A separate tank connected either directly or by a pump to the oil-burning appliance.

Thermostat. An automatic control actuated by temperature changes to maintain temperatures between predetermined limits.

Thimble. A fixed or removable ring, tube, or lining usually located in the hole where the chimney connector or vent connector passes through a wall or enters a chimney or vent.

Tools and Parts, Special. Those tools and parts that are not available on the open retail market.

Trial-for-Ignition Period. See "Main-Burner Flame-Establishing Period."

Trimmer. With reference to chimneys, the longer floor or roof framing member around a rectangular opening into which the end of a header is joined.

Type B Vent. See "Gas Vent."

Type BW Vent. See "Gas Vent."

Type L Vent. A passageway, vertical or nearly so, composed of listed factory-built components assembled in accordance with the terms of listing for conveying flue gases from oil and gas appliances or their vent connectors to the outside atmosphere.

Unit Heater. A self-contained heating appliance that may or may not include an integral fan for circulating air and that may be of the floor-mounted or suspended type, intended for the heating of the space in which it is installed. A unit heater may be an indirect-fired fuel-burning appliance or may utilize steam, hot water, or electricity.

Unvented Appliance. A fuel-burning appliance designed to discharge its products of combustion into the space in which it is located.

Valve. A device by which the flow of liquid, air or other gas, loose material in bulk, etc., may be started, stopped, or regulated by a movable part that opens or obstructs passage.

Valve, Automatic. A valve operated by an automatic control. (See "Control, Automatic.")

Valve, Check. A valve that allows flow in one direction only.

Valve, Diaphragm. A valve actuated by means of pressure on a flexible diaphragm.

Valve, Electric. A valve actuated by electrical energy. It may be normally closed or normally open.

Valve, Lubricated Plug-type. A valve of the plug- and barrel-type designed for maintaining a lubricant between bearing surfaces.

Valve, Manual Reset. An automatic shutoff valve that remains closed until manually reopened.

Valve, Relief. A valve designed to forestall the development of an unsafe condition by relieving excessive pressure, temperature, or vacuum.

Valve, Safety Shutoff. A shutoff valve that is automatically closed by the safety control system or by an emergency device. The valve may be of the automatically or manually opened type.

Valve, Shutoff. A valve designed so that, when closed, it completely stops the flow.

Vent. See "Gas Vent" and "Type L Vent."

Venting. Removal of combustion products as well as noxious or toxic fumes to the outer air.

Venting System (Flue Gases). A continuous open passageway from the flue collar or draft hood of a fuel-burning appliance to the outside atmosphere for the purpose of removing flue gases.

NOTE: A venting system for exhausting flue gases usually is composed of a gas vent, Type L vent, or a chimney and vent or chimney connector(s) if used, assembled to form the open passageway.

Venting System, Type L. See "Type L Vent."

Vent Cap. A protective covering or housing attached to the vent termination intended for preventing the entry of rain, snow, animals, etc., and for preventing downdrafts.

Vent Connector. The pipe that connects a fuel-burning appliance to a gas vent or Type L vent.

NOTE: Since a vent is a vertical or nearly vertical passageway composed of listed factory-built components, it follows that any pipe or manifold used to connect an appliance(s) to such a vertical vent is a vent connector. However, if the vertical vent is connected directly to an appliance draft hood or flue collar, a vent connector is not involved.

Vent Gases. Products of combustion from fuel-burning appliances plus excess air, plus any dilution air in the venting system above a draft hood or draft regulator.

Vent Limiting Means (for Pressure Regulator). A means that limits the flow of air, gas, or liquid from the atmospheric diaphragm chamber of a pressure regulator to the atmosphere.

Vented Appliance. An indirect-fired appliance provided with a flue collar to accommodate a venting system for conveying flue gases to the outer air.

Wall Furnace. A self-contained, vented appliance complete with grills or equivalent, designed for incorporation in or permanent attachment to the structure of a building, manufactured home, or recreational vehicle, and furnishing heated air directly into the space to be heated through openings in the casing. Such appliances shall not be provided with duct extensions beyond the vertical and horizontal limits of the casing proper, except that boots not to exceed 10 in. (254 mm) beyond the horizontal of the casing for extension through walls of nominal thickness may be permitted. Where provided, such boots shall be supplied by the manufacturer as an integral part of the appliance. This definition excludes floor furnaces, unit heaters, and central furnaces.

Gravity-type Wall Furnace. A wall furnace depending on circulation of air by gravity.

Fan-type Wall Furnace. A wall furnace equipped with a fan for the circulation of air.

Wall Protector (Shield). Noncombustible surfacing applied to a wall area for the purpose of reducing the clearance between the wall and a heat-producing appliance.

Wash. A slight slope or beveled edge on the top surface of a chimney designed to shed water away from the flue liner.

Water Heater. An indirect-fired fuel-burning or electrically heated appliance for heating water to a temperature not more than 200°F (93°C), having an input not greater than 200,000 Btu or 58.6 kw per hour, and a water-containing capacity not exceeding 120 US gal (454 L).

Wythe. With reference to masonry chimneys, a course, thickness, or a continuous vertical section of masonry separating flues in a chimney.

Zero Governor. A regulating device that is normally adjusted to deliver gas at atmospheric pressure within its flow rating.

Chapter 2 Referenced Publications

2-1 The following documents or portions thereof are referenced within this glossary and should be considered part of the recommendations of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

2-1.1 NFPA Publication. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 54, *National Fuel Gas Code*, 1992 edition

NFPA 255, *Method of Test of Surface Burning Characteristics of Building Materials*, 1990 edition.

2-1.2 Other Publications.

2-1.2.1 ASTM Standards. American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

E 84-1991, *Surface Burning Characteristics of Building Materials*

E 136-1982, *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C*

D 396-1990, *Specifications for Fuel Oils*.

2-1.2.2 UL Standards. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062.

UL 723-1983, *Tests for Surface Burning Characteristics of Building Materials*

UL 727-1986, *Oil Fired Central Furnaces*

UL 900-1987, *Standard Test Performance of Air Filter Units*.

2-1.2.3 Canadian Government Publication. Canadian Government Publishing Centre, Ottawa, Canada, K1A 059.

3-GP-2c, *Heating Fuel Oil*.

2-1.2.4 ASHRAE Publication. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1791 Tullie Circle, NE, Atlanta, GA 30329.

ASHRAE Application Handbook, 1978 edition.