



BROWARD COUNTY BOARD OF RULES AND APPEALS

1 N. University Drive Suite 3500B
Plantation, Florida 33324

Phone: 954-765-4500

Fax: 954-765-4504

broward.org/CodeAppeals

FBC 6th Edition (2017)

FORMAL INTERPRETATION (#22)

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James DiPietro

—ESTABLISHED 1971—

DATE: May 9, 2019

TO: All Building Officials

FROM: James DiPietro, Administrative Director 

SUBJECT: Direct venting of solid fuel pizza ovens.

At its meeting of May 9, 2019, the Board approved an interpretation of the 6th Edition FBC, Mechanical and of the Broward County Administrative Provisions for the 2017 Florida Building Code (6th Edition), Chapter 1.

Formal Interpretation of the following sections:

2017 Florida Building Code - Mechanical, Sixth Edition, SECTION 507 "COMMERCIAL KITCHEN HOODS"; and Broward County Administrative Provisions for the 2017 FBC (6th Edition) Section 104.32 "Alternative materials, design and methods of construction and equipment".

Formal Interpretation.

The installation of solid fuel or combination gas and solid fuel pizza ovens without a Type 1 (grease) hood using direct venting as allowed in NFPA 96-2014 is acceptable if the oven is listed to be vented directly. The venting system shall be constructed and installed per the listing conditions of the oven and of the duct or chimney used for venting. This applies to ovens listed with natural draft or forced draft venting.

EFFECTIVE DATE: May 10, 2019.

James DiPietro, Administrative Director

****PLEASE POST AT YOUR PERMIT COUNTER****

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Reference, material for FORMAL INTERPRETATION (#22) “Direct venting of solid fuel pizza ovens”.

2017 Florida Building Code - Mechanical, Sixth Edition
SECTION507 COMMERCIAL KITCHEN HOODS

507.2 Type I hoods.

Type I hoods shall be installed where cooking appliances produce grease or smoke as a result of the cooking process. Type I hoods shall be installed over medium-duty, heavy-duty and extra-heavy-duty cooking appliances.

Exception: A Type I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m³ or less of grease when tested at an exhaust flow rate of 500 cfm (0.236 m³/s) in accordance with UL 710B.

CHAPTER2 DEFINITIONS

EXTRA-HEAVY-DUTY COOKING APPLIANCE. Extra-heavy-duty cooking appliances are those utilizing open flame combustion of solid fuel at any time.

Ch. 1, Broward County Administrative Provisions for the 2017 FBC (6th Edition)

104.32 Alternative materials, design and methods of construction and equipment. The provisions of the technical codes are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this Code, provided any such alternative has been reviewed and approved by the Building Official and/or Fire Marshal/Fire Code Official (according to the Fire Protection Provisions of this Code and FFPC). An alternative material, design or method of construction shall be approved where the Building Official and/or Fire Marshal/Fire Code Official (according to the Fire Protection Provisions of this Code and FFPC) finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method of construction offered for the purpose intended; is at least the equivalent of that prescribed in the technical codes in quality, strength, effectiveness, fire resistance, durability and safety. Where alternate life safety systems are designed, the “SFPE Engineering Guide to Performance-Based Fire Protection Analysis and Design of Buildings,” or other methods approved by the Building Official and/or Fire Marshal/Fire Code Official (according to the Fire Protection Provisions of this Code and FFPC) may be used. The Building Official and/or Fire Marshal/Fire Code official (according to the Fire Protection Provisions of this Code and FFPC) shall require that sufficient evidence or proof be submitted to substantiate any claim made regarding the alternative. Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved.

104.32.1 Research reports. Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this Code, shall consist of valid research reports from approved sources.

104.32.2 Tests: Whenever there is insufficient evidence of compliance with the provisions of this Code, or evidence that a material or method does not conform to the requirements of this Code, or in order to substantiate claims for alternative materials or methods, the Building Official

shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this Code or by other recognized test standards. In the absence of recognized and accepted test methods, the building official shall approve the testing procedures. Tests shall be performed by an approved agency. Reports of such tests shall be retained by the Building Official for the period required for retention of public records.

104.32.3 Accessibility. Alternate designs and technologies for providing access to and usability of a facility for persons with disabilities shall be in accordance with provisions of the FBC, Accessibility.

104.33 Standards: The types of construction or materials or methods of design referred to in this Code shall be considered as standards of quality and strength. New types of construction or materials or methods of design shall be at least equal to these standards for the corresponding use intended.

104.34 Approved materials and equipment. Materials, equipment and devices approved by the Building Official shall be constructed and installed in accordance with such approval.

104.34.1 Used materials and equipment. The installation of used materials which meet the requirements of this Code for new materials is permitted. Used equipment and devices shall not be installed unless approved by the Building Official

104.35 Application for the use of alternative methods and materials.

104.35.1 Any person desiring to use types of construction or materials or methods of design not specifically mentioned in this Code shall file with the Building Official and/or Fire Marshal/Fire Code Official, in writing, authentic proof in support of claims that may be made regarding the sufficiency of such types of construction or materials or methods of design and request approval and permission for their use. Such documentation shall be attached to and be made a part of the permit documents.

104.35.2 The Building Official and/or Fire Marshal/Fire Code Official shall approve such alternate types of construction or materials or methods of design if it is clear that the standards of this Code are at least equaled. If, in the opinion of the Building Official and/or Fire Marshal/Fire Code Official, the standards of this Code will not be satisfied by the requested alternate, he or she shall refuse approval.

3.3.50* Trained. A person who has become proficient in performing a skill reliably and safely through instruction and practice/field experience acceptable to the AHJ.

3.3.51 Trap. A cuplike or U-shaped configuration located on the inside of a duct system component where liquids can accumulate.

Chapter 4 General Requirements

4.1 General.

4.1.1 Cooking equipment used in processes producing smoke or grease-laden vapors shall be equipped with an exhaust system that complies with all the equipment and performance requirements of this standard.

4.1.1.1* Cooking equipment that has been listed in accordance with ANSI/UL 197 or an equivalent standard for reduced emissions shall not be required to be provided with an exhaust system.

4.1.1.2 The listing evaluation of cooking equipment covered by 4.1.1.1 shall demonstrate that the grease discharge at the exhaust duct of a test hood placed over the appliance shall not exceed 5 mg/m^3 (0.00018 oz/ft^3) when operated with a total airflow of $0.236 \text{ m}^3/\text{s}$ (500 cfm).

4.1.2 All such equipment and its performance shall be maintained in accordance with the requirements of this standard during all periods of operation of the cooking equipment.

4.1.3 The following equipment shall be kept in working condition:

- (1) Cooking equipment
- (2) Hoods
- (3) Ducts (if applicable)
- (4) Fans
- (5) Fire-extinguishing equipment
- (6) Special effluent or energy control equipment

4.1.3.1 Maintenance and repairs shall be performed on all components at intervals necessary to maintain good working condition.

4.1.4 All airflows shall be maintained.

4.1.5 The responsibility for inspection, testing, maintenance, and cleanliness of the ventilation control and fire protection of the commercial cooking operations shall ultimately be that of the owner of the system, provided that this responsibility has not been transferred in written form to a management company, tenant, or other party.

4.1.6* All solid fuel cooking equipment shall comply with the requirements of Chapter 14.

4.1.7 Multitenant applications shall require the concerted cooperation of design, installation, operation, and maintenance responsibilities by tenants and by the building owner.

4.1.8 All interior surfaces of the exhaust system shall be accessible for cleaning and inspection purposes.

4.2* Clearance.

4.2.1 Where enclosures are not required, hoods, grease removal devices, exhaust fans, and ducts shall have a clearance of at least 457 mm (18 in.) to combustible material, 76 mm (3 in.) to limited-combustible material, and 0 mm (0 in.) to noncombustible material.

4.2.2 Where a hood, duct, or grease removal device is listed for clearances less than those required in 4.2.1, the listing requirements shall be permitted.

4.2.3 Clearance Reduction.

4.2.3.1 Where a clearance reduction system consisting of 0.33 mm (0.013 in.) (28 gauge) sheet metal spaced on 25 mm (1 in.) on noncombustible spacers is provided, there shall be a minimum of 229 mm (9 in.) clearance to combustible material.

4.2.3.2 Where a clearance reduction system consisting of 0.69 mm (0.027 in.) (22 gauge) sheet metal on 25 mm (1 in.) mineral wool batts or ceramic fiber blanket reinforced with wire mesh or equivalent spaced 25 mm (1 in.) on noncombustible spacers is provided, there shall be a minimum of 76 mm (3 in.) clearance to combustible material.

4.2.3.3 Where a clearance reduction system consisting of a listed and labeled field-applied grease duct enclosure material, system, product, or method of construction specifically evaluated for such purpose in accordance with ASTM E 2336, the required clearance shall be in accordance with the listing.

4.2.3.4 Zero clearance to limited-combustible materials shall be permitted where protected by one of the following:

- (1) Metal lath and plaster
- (2) Ceramic tile
- (3) Quarry tile
- (4) Other noncombustible materials or assembly of noncombustible materials that are listed for the purpose of reducing clearance
- (5) Other materials and products that are listed for the purpose of reducing clearance

4.2.4 Clearance Integrity.

4.2.4.1 In the event of damage, the material or product shall be repaired and restored to meet its intended listing or clearance requirements and shall be acceptable to the AHJ.

4.2.4.2* In the event of a fire within a kitchen exhaust system, the duct and its enclosure (rated shaft, factory-built grease duct enclosure, or field-applied grease duct enclosure) shall be inspected by qualified personnel to determine whether the duct and protection method are structurally sound, capable of maintaining their fire protection function, and in compliance with this standard for continued operation.

4.2.4.3 Protection shall be provided on the wall from the bottom of the hood to the floor, or to the top of the noncombustible material extending to the floor, to the same level as required in 4.2.1.

4.2.4.4 The protection methods for ducts to reduce clearance shall be applied to the combustible or limited-combustible

airflow.

11.6.12 When cleaning procedures are completed, all electrical switches and system components shall be returned to an operable state.

11.6.13 When an exhaust cleaning service is used, a certificate showing the name of the servicing company, the name of the person performing the work, and the date of inspection or cleaning shall be maintained on the premises.

11.6.14 After cleaning or inspection is completed, the exhaust cleaning company and the person performing the work at the location shall provide the owner of the system with a written report that also specifies areas that were inaccessible or not cleaned.

11.6.15 Where required, certificates of inspection and cleaning and reports of areas not cleaned shall be submitted to the authority having jurisdiction.

11.7 Cooking Equipment Maintenance.

11.7.1 Inspection and servicing of the cooking equipment shall be made at least annually by properly trained and qualified persons.

11.7.2 Cooking equipment that collects grease below the surface, behind the equipment, or in cooking equipment flue gas exhaust, such as griddles or charbroilers, shall be inspected and, if found with grease accumulation, cleaned by a properly trained, qualified, and certified person acceptable to the authority having jurisdiction.

Chapter 12 Minimum Safety Requirements for Cooking Equipment

12.1 Cooking Equipment.

12.1.1* Cooking equipment shall be approved based on one of the following criteria:

- (1) Listings by a testing laboratory
- (2) Test data acceptable to the authority having jurisdiction

12.1.2 Installation.

12.1.2.1* All listed appliances shall be installed in accordance with the terms of their listings and the manufacturer's instructions.

12.1.2.1.1 Solid fuel used for flavoring within a gas-operated appliance shall be in a solid fuel holder (smoker box) that is listed with the equipment.

12.1.2.2* Cooking appliances requiring protection shall not be moved, modified, or rearranged without prior re-evaluation of the fire-extinguishing system by the system installer or servicing agent, unless otherwise allowed by the design of the fire-extinguishing system.

12.1.2.2.1 A solid fuel holder shall not be added to an existing appliance until the fire-extinguishing system has been evaluated by the fire-extinguishing system service provider.

with listed equipment or the appliances are reconnected in accordance with the manufacturer's listed design manual.

12.1.2.3.1 An approved method shall be provided that will ensure that the appliance is returned to an approved design location.

12.1.2.4 All deep-fat fryers shall be installed with at least a 406 mm (16 in.) space between the fryer and surface flames from adjacent cooking equipment.

12.1.2.5 Where a steel or tempered glass baffle plate is installed at a minimum 203 mm (8 in.) in height between the fryer and surface flames of the adjacent appliance, the requirement for a 406 mm (16 in.) space shall not apply.

12.1.2.5.1 If the fryer and the surface flames are at different horizontal planes, the minimum height of 203 mm (8 in.) shall be measured from the higher of the two.

12.2 Operating Controls. Deep-fat fryers shall be equipped with a separate high-limit control in addition to the adjustable operating control (thermostat) to shut off fuel or energy when the fat temperature reaches 246°C (475°F) at 25.4 mm (1 in.) below the surface.

Chapter 13 Recirculating Systems

13.1 General Requirements. Recirculating systems containing or for use with appliances used in processes producing smoke or grease-laden vapors shall be equipped with components complying with the following:

- (1) The clearance requirements of Section 4.2
- (2) A hood complying with the requirements of Chapter 5
- (3) Grease removal devices complying with Chapter 6
- (4) The air movement requirements of 8.2.1.2 and 8.2.2.3
- (5) Auxiliary equipment (such as particulate and odor removal devices) complying with Chapter 9
- (6) Fire-extinguishing equipment complying with the requirements of Chapter 10 with the exception of 10.1.1 and 10.5.1, which shall not apply
- (7) The use and maintenance requirements of Chapter 11
- (8) The minimum safety requirements of Chapter 12
- (9) All the requirements of Chapter 13

13.2 Design Restrictions. All recirculating systems shall comply with the requirements of Section 13.2.

13.2.1 Only gas-fueled or electrically fueled cooking appliances shall be used.

13.2.2 Listed gas-fueled equipment designed for use with specific recirculating systems shall have the flue outlets connected in the intended manner.

13.2.3 Gas-fueled appliances shall have a minimum 457 mm (18 in.) clearance from the flue outlet to the filter inlet in accordance with 6.2.2 and shall meet the installation requirements of NFPA 54 or NFPA 58.

Chapter 14 Solid Fuel Cooking Operations

14.1 Venting Application. Venting requirements of solid fuel cooking operations shall be determined in accordance with 14.1.1 through 14.1.7.

14.1.1 Where solid fuel cooking equipment is required by the manufacturer to have a natural draft, the vent shall comply with Section 14.4.

14.1.2 Where the solid fuel cooking equipment has a self-contained top, is the only appliance to be vented in an isolated space (except for a single water heater with its own separate vent), has a separate makeup air system, and is provided with supply and return air (not supplied or returned from other spaces), the system shall comply with Sections 14.4 and 14.6.

14.1.3 Where the solid fuel cooking equipment is located in a space with other vented equipment, all vented equipment shall have an exhaust system interlocked with a makeup air system for the space per Section 14.6.

14.1.4 Natural draft ventilation systems and power-exhausted ventilation systems shall comply with Sections 14.3, 14.4, and 14.6.

14.1.5 Where a solid fuel cooking appliance allows effluent to escape from the appliance opening, this opening shall be covered by a hood and an exhaust system that meets the requirements of Sections 14.3, 14.4, and 14.6.

14.1.6 Solid fuel cooking operations shall have spark arresters to minimize the passage of airborne sparks and embers into plenums and ducts.

14.1.7 Where the solid fuel cooking operation is not located under a hood, a spark arrester shall be provided to minimize the passage of sparks and embers into flues and chimneys.

14.2 Location of Appliances.

14.2.1 Every appliance shall be located with respect to building construction and other equipment so as to permit access to the appliance.

14.2.2* Solid fuel cooking appliances shall not be installed in confined spaces.

14.2.3 Solid fuel cooking appliances listed for installation in confined spaces such as alcoves shall be installed in accordance with the terms of the listing and the manufacturer's instructions.

14.2.4 Solid fuel cooking appliances shall not be installed in any location where gasoline or any other flammable vapors or gases are present.

14.3 Hoods for Solid Fuel Cooking.

14.3.1 Hoods shall be sized and located in a manner capable of capturing and containing all the effluent discharging from the appliances.

14.3.2 The hood and its exhaust system shall comply with the requirements of Chapters 5 through 10.

14.3.3 Except as permitted in 14.3.4, exhaust systems serving solid fuel cooking equipment, including gas or electrically operated equipment, shall be separate from all other exhaust systems.

14.3.4* Gas-operated equipment utilizing solid fuel for flavoring that meets all the following conditions shall not be required to have a separate exhaust system:

- (1)*The solid fuel holder (smoker box) shall be listed with the gas-operated equipment.
- (2) The solid fuel holder shall be located underneath the gas burners.
- (3) Spark arresters conforming with 14.1.6 shall be provided.
- (4)*The maximum quantity of solid fuel consumed shall not exceed 2 kg (4.5 lb) per hour per 29.3 kW (100,000 Btu/hr) of gas burner capacity.
- (5) The gas-operated equipment shall be protected by a fire suppression system listed for the equipment, including the solid fuel holder.
- (6) Gas-operated equipment with integral solid fuel holder(s) intended for flavoring, such as radiant charbroiler(s), shall comply simultaneously with the requirements of ANSI/UL 300 that address that gas radiant charbroiler(s) and mesquite wood charbroiler(s).
- (7) A fire suppression system nozzle(s) shall be installed to protect the solid fuel holder.
- (8) The fire suppression system shall be designed and installed to protect the entire cooking operation.
- (9) Each solid fuel holder shall be limited to a size of 32.8 L (2000 in.³), with no dimension to exceed 51 cm (20 in.).
- (10) A maximum of one solid fuel holder for each 29.3 kW (100,000 Btu/hr), or portion thereof, of burner capacity shall be permitted.
- (11) The inspection frequency shall be the same as for solid fuel cooking operations in Table 11.4.

14.3.4.1 Gas-operated equipment utilizing solid fuel for flavoring that meets 14.3.4 shall be inspected, cleaned, and maintained in accordance with Section 14.8.

14.3.5 Cooking equipment not requiring automatic fire-extinguishing equipment (per Chapter 10) shall be permitted to be installed under a common hood with solid fuel cooking equipment that is served by a duct system separate from all other exhaust systems.

14.4 Exhaust for Solid Fuel Cooking. Where a hood is not required, in buildings where the duct system is three stories or less in height, a duct complying with Chapter 7 shall be provided.

14.4.1 If a hood is used in buildings where the duct system is three stories or less in height, the duct system shall comply with Chapter 7.

14.4.2 A listed or approved grease duct system that is four stories in height or greater shall be provided for solid fuel cooking exhaust systems.

14.4.3 Where a hood is used, the duct system shall conform with the requirements of Chapter 7.

14.4.4 Wall terminations of solid fuel exhaust systems shall be prohibited.

14.5 Grease Removal Devices for Solid Fuel Cooking.

14.5.1 Grease removal devices shall be constructed of steel or stainless steel or be approved for solid fuel cooking.

14.5.2 If airborne sparks and embers can be generated by the solid fuel cooking operation, spark arrester devices shall be used prior to using the grease removal device, to minimize the

entrance of these sparks and embers into the grease removal device and into the hood and the duct system.

14.5.3 Filters shall be a minimum of 1.2 m (4 ft) above the appliance cooking surface.

14.6 Air Movement for Solid Fuel Cooking.

14.6.1 Exhaust system requirements shall comply with Chapter 8 for hooded operation or shall be installed in accordance with the manufacturer's recommendations for unhooded applications.

14.6.2 A replacement or makeup air system shall be provided to ensure a positive supply of replacement air at all times during cooking operations.

14.6.3 Makeup air systems serving solid fuel cooking operations shall be interlocked with the exhaust air system and powered, if necessary, to prevent the space from attaining a negative pressure while the solid fuel appliance is in operation.

14.7.9.2 The system shall have a minimum operating pressure of 275.8 kPa (40 psi) and shall provide a minimum of 19 L./min (5 gpm).

14.7.10 Fire suppression for fuel storage areas shall comply with Section 14.9 of this standard.

14.7.11 In addition to the requirements of 14.7.8 through 14.7.10, where any solid fuel cooking appliance is also provided with auxiliary electric, gas, oil, or other fuel for ignition or supplemental heat and the appliance is also served by any portion of a fire-extinguishing system complying with Chapter 10, such auxiliary fuel shall be shut off on actuation of the fire-extinguishing system.

14.8 Procedures for Inspection, Cleaning, and Maintenance for Solid Fuel Cooking. Solid fuel cooking appliances shall be inspected, cleaned, and maintained in accordance with the procedures outlined in Chapter 11 and with 14.8.1 through 14.8.5.