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**TITLE 675 FIRE PREVENTION AND BUILDING  
SAFETY COMMISSION**

**Proposed Rule**  
LSA Document #02-116

DIGEST

Adds 675 IAC 18-1.4, which adopts and amends the 2000 International Mechanical Code as the 2003 Indiana Mechanical Code. Repeals 675 IAC 18-1.3. Effective 30 days after filing with the secretary of state.

**675 IAC 18-1.3**

**675 IAC 18-1.4**

SECTION 1. 675 IAC 18-1.4 IS ADDED TO READ AS FOLLOWS:

**Rule 1.4. Indiana Mechanical Code, 2003 Edition**

**675 IAC 18-1.4-1 Adoption by reference; title; availability; scope; purpose**

**Authority:** IC 22-13-2-2

**Affected:** IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 1. (a) That certain document being titled the International Mechanical Code, third printing, published by the International Code Council, 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041-3401, is hereby adopted by reference as if fully set out in this rule save and except those revisions made in this rule.**

**(b) This rule is available for review and reference at the Fire and Building Services Department, Indiana Government Center-South, 402 West Washington Street, Room W246, Indianapolis, Indiana 46204. (Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-1)**

**675 IAC 18-1.4-2 Chapter 1; administration**

**Authority:** IC 22-13-2-2

**Affected:** IC 4-21.5; IC 22-12-7; IC 22-13-2-7; IC 22-13-5; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 2. Delete Chapter 1 and substitute to read as follows:**

**Section 101 Application**

**101.1 Title**

**This rule shall be known as the Indiana Mechanical Code, 2003 edition and shall be published, except incorporated documents, by the fire and building services department, for general distribution and use under that title. Wherever the term "this code" is used throughout this rule, it shall mean the Indiana Mechanical Code, 2003 edition.**

**101.2 Scope and purpose**

**The scope and purpose of this code is to establish the minimum requirements for the following:**

**1. Construction, addition, alteration, erection or assembly of any part of a Class 1 structure at the site where**

the structure will be used.

2. Installation of any part of the permanent heating, ventilating, air conditioning, electrical, plumbing, sanitary, emergency detection, emergency communication, or fire or explosion suppression systems for a Class 1 structure at the site where it will be used.
3. Work undertaken to alter, remodel, rehabilitate, or add to any part of a Class 1 structure.
4. Safeguarding life or property from the hazards of fire and explosion for Class 1 structures.
5. Fabrication of any part of a Class 1 industrialized building system for installation, assembly, or use at another site, except mobile structures.
6. Work undertaken to relocate any part of a Class 1 structure, except a mobile structure.
7. Assembly of a Class 1 industrialized building system that is not covered by subdivision 5, except mobile structures.
8. Detached one and two family dwellings and townhouses not more than three stories high and their accessory structures shall comply with the Indiana Residential Code, 675 IAC 14.

### 101.3 Appendices and Standards

Provisions in the appendices are not enforceable unless specifically adopted.

The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

**EXCEPTION:** Where enforcement of a code provision would violate the conditions of the listing, labeling or manufacturer's installation instructions of the equipment, engineered wood product or appliance, the conditions of the listing, labeling or manufacturer's instructions shall apply.

### 101.4 Appeals and Interpretations

Appeals from orders issued by the Fire Prevention and Building Safety Commission, the Office of the State Building Commissioner or the Office of the State Fire Marshal are governed by IC 4-21.5 and IC 22-12-7. Appeals from orders by a local unit of government are governed by IC 22-13-2-7 and local ordinance. Upon the written request of an interested person who has a dispute with a county or municipal government concerning a building rule, the Office of the State Building Commissioner may issue a written interpretation of a building law. The written interpretation as issued under IC 22-13-5 binds the interested person and the county or municipality with whom the interested person has the dispute until overruled under IC 4-21.5. A written interpretation of a building law binds all counties and municipalities if the office of the state building commissioner publishes the written interpretation of the building law in the Indiana Register under IC 4-22.7-7(b).

### 101.5 Plans

Plans shall be submitted for Class 1 structures as required by the General Administrative Rules (675 IAC 12) and the rules for Industrialized Building Systems (675 IAC 15).

### 101.6 Existing Construction

For existing Class 1 structures, see the General Administrative Rules (675 IAC 12) and local ordinance.

### 101.7 Additions and Alterations

Additions and alterations to any Class 1 structure shall conform to that required of a new structure without requiring the existing structure to comply with all the requirements of this code. Additions or alterations shall not cause an existing structure to become unsafe (See the General Administrative Rules (675 IAC 12-4)).

### 101.8 Alternate Materials, Methods, and Equipment

Alternate materials, methods, equipment, and design shall be as required by the General Administrative Rules (675 IAC 12-6-11) and the rules for Industrialized Building Systems (675 IAC 15). (*Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-2*)

### 675 IAC 18-1.4-3 Chapter 2; definitions

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 3. In Chapter 2, make the following changes:

(a) Change the definition of APPLIANCE-EXISTING to read as follows: Any appliance regulated by this code which was legally installed prior to the effective date of this code.

(b) Change the definition of APPROVED to read as follows:

APPROVED as to materials, equipment, design, and types of construction, acceptance by the code official by one (1) of the following methods:

(1) investigation or tests conducted by recognized authorities; or

(2) investigation or tests conducted by technical or scientific organizations; or accepted principles.

The investigation, tests or principles shall establish that the materials, equipment and types of construction are safe for their intended purpose.

(c) Delete the definition of BASE FLOOD ELEVATION.

(d) Delete the definition of CODE.

(e) Change the definition of CODE OFFICIAL to read as follows: The office of the state building commissioner authorized under IC 22-15-2-7; the office of the state fire marshal authorized under IC 22-14-2-10; the local building official authorized under IC 36-7-9 and local ordinance; the fire department authorized under IC 36-8-17-9, or local ordinance.

(f) Change the definition of COMMERCIAL FOOD HEAT-PROCESSING APPLIANCES to read as follows: Appliances used in commercial cooking operations, and which produce grease vapors, steam fumes, smoke or odors that are required to be removed through a local exhaust ventilation system.

(g) Delete the definition of COMPENSATING HOODS.

(h) Delete the definition of CONSTRUCTION DOCUMENTS and substitute as follows: See the General Administrative Rules (675 IAC 12-6) and the rules for Industrialized Building Systems (675 IAC 15).

(i) Change the definition of EQUIPMENT, EXISTING to read as follows: Any equipment regulated by this code which was legally installed prior to the effective date of this code.

(j) Add the definition for FIRE PREVENTION CODE to read as follows:

FIRE PREVENTION CODE. See the INDIANA BUILDING CODE (675 IAC 13) and the INDIANA FIRE CODE (675 IAC 22).

(k) Delete the definition of FLOOD ZONES.

(l) Delete the definition of HOOD and substitute to read as follows: See Section 506 of this code.

(m) Change the definition of IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH) to read as follows: The concentration of airborne contaminants that poses a threat of death, immediate or delayed permanent adverse health effects, or effects that could prevent escape from such an environment.

(n) Add the following definitions after the definition of INDIRECT REFRIGERATION SYSTEM and before the definition of JOINT, FLANGED:

(1) ICC ELECTRICAL CODE means the INDIANA ELECTRICAL CODE (675 IAC 17).

(2) ICC BUILDING CODE means the INDIANA BUILDING CODE (675 IAC 13).

(3) INTERNATIONAL BUILDING, FIRE, FUEL GAS, PLUMBING, and ENERGY CONSERVATION CODES mean the INDIANA BUILDING, FIRE, FUEL GAS, PLUMBING, and ENERGY CONSERVATIONS CODES (675 IAC 13, 675 IAC 22, 675 IAC 25, 675 IAC 15 and 675 IAC 19).

(o) Delete the definition of LABELED and substitute to read as follows: Equipment, devices, appliances or materials to which has been attached a label, symbol, or other identifying mark of an organization engaged in product evaluation, that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

(p) Delete the definition of LISTED and substitute to read as follows: Equipment, appliances, devices, or materials included in a list published by an organization engaged in product evaluation, that maintains

periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriated standards or has been tested and found suitable for use in a specified manner.

(q) Change the definition of REGISTERED DESIGN PROFESSIONAL to read as follows: A registered architect or professional engineer who is registered under IC 25-4 or IC 25-31. If a registered design professional is not required by the General Administrative Rules (675 IAC 12-6) or the rules for Industrialized Building Systems (675 IAC 15), then it means the owner.

*(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-3)*

**675 IAC 18-1.4-4 Section 301.2; energy utilization**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 4. In Section 301.2 Energy utilization, delete “all structures” and insert “all Class I structures”.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-4)*

**675 IAC 18-1.4-5 Section 301.4; listed and labeled**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 5. In Section 301.4 Listed and labeled, delete “in accordance with Section 105”.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-5)*

**675 IAC 18-1.4-6 Section 301.5; labeling**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 6. Delete Section 301.5 Labeling.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-6)*

**675 IAC 18-1.4-7 Section 301.6; information**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 7. In Item 4 of Section 301.6 Information, delete “approval” and insert “acceptance”.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-7)*

**675 IAC 18-1.4-8 Section 301.13; flood hazard**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 8. Delete Section 301.13 Flood hazard and substitute “See local ordinance”.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-8)*

**675 IAC 18-1.4-9 Section 301.15; rodent proofing**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 9. Delete Section 301.15 Rodent proofing.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-9)*

**675 IAC 18-1.4-10 Section 304.1; general**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 10. Change Section 304.1 General to read as follows: Equipment and appliances shall be installed in accordance with the conditions of the listing, the manufacturer’s installation instructions and this code unless otherwise approved.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-10)*

**675 IAC 18-1.4-11 Section 304.4; public garages**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 11. In Section 304.4, delete “service station” and insert “motor fuel dispensing facilities”.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-11)*

**675 IAC 18-1.4-12 Section 401.4; exists**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 12. Change Item 3 in Section 401.4 Exits as follows: Add the words “by the Indiana Building Code” to item 3 of this section following the words “as required”.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-12)*

**675 IAC 18-1.4-13 Section 401.7; contaminant sources**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 13. Delete Section 401.7 Contaminant sources.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-13)*

**675 IAC 18-1.4-14 Section 406.1; general**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 14. Delete Section 406.1 General and insert the following: Uninhabited spaces, such as crawl spaces and attics shall be provided with natural ventilation openings as required by the Indiana Building Code (675 IAC 13).** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-14)*

**675 IAC 18-1.4-15 Section 501.1; scope**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 15. Change Section 501.1 Scope to read as follows: This chapter shall govern the design, construction and installation of mechanical exhaust systems within the scope of Section 101.2, including dust stock and refuse conveyor systems and exhaust systems serving appliances used for commercial cooking operations.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-15)*

**675 IAC 18-1.4-16 Section 501.2; independent systems required**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 16. Change Section 501.2 Independent system required to read as follows: Single or combined mechanical exhaust systems from bath, toilet, urinal, locker, service sink closets and similar rooms shall be independent of all other systems. Type I exhaust systems shall be independent of all other exhaust systems, single or combined. Type II exhaust systems for food-processing operations shall be independent of all other exhaust systems. Kitchen exhaust systems shall be constructed in accordance with Section 505 for domestic equipment and Section 506 for commercial equipment.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-16)*

**675 IAC 18-1.4-17 Section 501.3; outdoor discharge**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 17. Delete Section 501.3 Outdoor discharge and insert the following: The air removed by every mechanical exhaust system shall discharge to the atmosphere. The termination point for exhaust ducts discharging to the atmosphere shall be not less than the following:**

(1) Ducts conveying explosive or flammable vapors, fumes, or dusts: 30 feet from property line; 10 feet from openings into the building; 6 feet from exterior walls or roofs; 30 feet from combustible walls or openings into the building which are in the direction of the exhaust discharge; or 10 feet above adjoining grade.

(2) Other product-conveying outlets; 10 feet from property line; 3 feet from exterior wall or roof; 10 feet from openings into the building; or 10 feet above adjoining grade.

(3) Environmental air duct exhaust: 3 feet from property line; or 3 feet from openings into the building.

Air shall not be exhausted into an attic or crawl space. *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-17)*

**675 IAC 18-1.4-18 Section 501.4; pressure equalization**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 18. Delete Section 501.4 Pressure equalization and insert the following: Mechanical exhaust systems shall be sized to remove the quantity of the air required by this code. The system shall operate when air is required to be exhausted. Where mechanical exhaust is required in a room or space in other occupancies in Use Group R-2 and R-3 as defined by the Indiana Building Code (675 IAC 13), such space shall be maintained with a neutral or negative pressure. If a greater quantity of air is supplied by a mechanical ventilating supply system that is removed by a mechanical exhaust system from a room, an approved means shall be provided for the natural exit of the excess air supplied. If only a mechanical exhaust system is installed for a room or if a greater quantity of air is removed by a mechanical exhaust system, than is supplied by a mechanical ventilating supply system for a room, an approved means shall be provided for the natural supply of the deficiency in the air supplied.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-18)*

**675 IAC 18-1.4-19 Section 502.8.11; silane gas**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 19. Change the third line of Section 502.8.11 Silane gas to read as follows: “ing the maximum allowable quantities per control area as required by the Indiana Building Code (675 IAC 13) shall”.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-19)*

**675 IAC 18-1.4-20 Section 502.9.1; where required**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 20. Delete the second sentence of Item 1 in Section 502.9.1 Where required.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-20)*

**675 IAC 18-1.4-21 Section 502.15.1; design**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 21. Change Section 502.15.1 Design to read as follows: Revise the fifth line of Item 1 to read: “25 percent of the LFL. In all cases, the sys-”.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-21)*

**675 IAC 18-1.4-22 Section 506, Section 507, Section 508 and Section 509; commercial kitchen grease ducts and exhaust equipment, commercial kitchen hoods, commercial kitchen makeup air, and fire suppression systems**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 22. Delete Section 506 Commercial kitchen grease ducts and exhaust equipment; Section 507 Commercial kitchen hoods; Section 508 Commercial kitchen makeup air; and Section 509 Fire suppression systems and insert the following: 506.1.1 For the purposes of this section, the following definitions shall apply:**

**\*AIR POLLUTION CONTROL DEVICES.** Equipment and devices used for the purpose of cleaning air

passing through or by them in such a manner as to reduce or remove the impurities contained therein.\*

**\*COMBUSTIBLE MATERIAL.** Material subject to increase in combustibility or flame spread rating beyond the limits established in the definition of limited-combustible.

**CONTINUOUS EXTERNAL WELD.** A metal joining method without interruption as related to visibility and quality, located on the outside of the surfaces that directly contain and/or convey the grease-laden vapors of the cooking process(es). For the purpose of this definition, it specifically includes the exhaust compartment of hoods and welded joints of exhaust ducts, yet specifically does not include filter support frames or appendages inside hoods.

**DAMPER.** A valve or plate within a duct or its terminal components for controlling draft or the flow of gases, including air.

**DUCTS (or Duct System).** A continuous passageway for the transmission of air and vapors that, in addition to the containment components themselves, may include duct fittings, dampers, plenums, and/or other items or air handling equipment.

**FUME INCINERATORS.** Devices utilizing intense heat or fire to break down and/or oxidize vapors and odors contained in gases or air being exhausted into the atmosphere.

**GREASE.** Rendered animal fat, vegetable shortening, and other such oily matter used for the purposes of and resulting from cooking and/or preparing foods. Grease may be liberated and entrained with exhaust air, or may be visible as a liquid or solid.

**GREASE DUCTS.** A containment system for the transportation of air and grease vapors, designed and installed to reduce the possibility of the accumulation of combustible condensation and the occurrence of damage should a fire occur within the system.

**GREASE FILTER.** A component of the grease vapor removal system that deflects the air and vapors passing through it in a manner that causes the grease vapor concentration and/or condensation for the purpose of collection, leaving the exiting air with a lower amount of combustible matter.

**GREASE REMOVAL DEVICES.** Other components of the grease and vapor removal system that do not fit the definition of grease filter yet are designed, installed, and perform by removing vapor suspended grease particles from the exhaust air/vapor stream or are designed to assist other devices in the removal of such vapors or particles.

**GREASETIGHT.** Constructed and performing in such a manner as not to permit the passage of any grease under normal cooking conditions.\*

**HOOD** is an air-intake device connected to a mechanical exhaust system for collecting and removing grease, vapors, fumes, smoke, steam, heat, or odors from commercial food heat-processing equipment.

**TYPE I HOOD** is a kitchen hood for collecting and removing grease and smoke.

**TYPE II HOOD** is a general kitchen hood for collecting and removing steam, vapor, heat, or odors.

**CANOPY HOOD** means a hood located above the cooking equipment it serves and which overhangs equipment on all open sides.

**COMPENSATING HOOD** is a hood that has an outside air supply with air delivered below or within the hood. When makeup air is diffused directly into the exhaust within the hood cavity, it becomes a short-circuit hood.

**\*LABELED.** Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization engaged in product evaluation, that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

**LIMITED-COMBUSTIBLE.** As applied to a building construction material, 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 three thousand five hundred (3,500) Btu per pound and complies with one (1) 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 one-eighth ( $\frac{1}{8}$ ) inch, which has a flame spread rating not greater than fifty (50).

(b) Materials, in the form and thickness used, other than as described in (a), having neither a flame spread rating greater than twenty-five (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 twenty-five (25) nor evidence of continued progressive combustion.

**LIQUIDTIGHT.** Constructed and performing in such a manner as not to permit the passage of any liquid at any temperature.

**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.\*

**MAKEUP AIR.** Air supplied to the room where the hood is located approximately equal to the amount of air exhausted.

**\*THERMAL RECOVERY UNIT.** A device or series of devices whose purpose is to reclaim only the heat content of air, vapors, gases, and/or fluids that were being expelled through the exhaust system and to transfer the thermal energy so reclaimed to a location whereby a useful purpose may be served.\*

#### **506.2 General requirements for hoods**

**506.2.1 Type I Hoods.** Commercial food heat-processing appliances used in a process that produce smoke or grease-laden vapors shall be equipped with an exhaust system complying with Type I Hood requirements.

**506.2.2 Type II Hoods.** Commercial food heat-processing appliances producing steam or heat that does not generate smoke or grease-laden vapors such as dishwashing machines shall be equipped with an exhaust system complying with Type II Hood requirements.

**506.2.3 Solid Fuel.** All commercial food heat-processing appliances using solid fuel shall be served by a separate exhaust system that complies with Type I Hood requirements.

**506.2.4 Alteration, Replacement, Relocation.** Notification in writing shall be given to the code official of any alteration, replacement, or relocation of any exhaust system equipment, exhaust system, extinguishing equipment, or any part thereof.

**506.2.5 Alternates.** Alternate materials, methods, and design shall be in accordance with the General Administrative Rules, 675 IAC 12-6-11.

#### **506.3 Type I exhaust hood construction**

**506.3.1 \*Materials.** The hood or that portion of a primary collection means designed for collecting cooking vapors and residues shall be constructed of and be supported by steel not less than forty-three thousandths (0.043) inch (No. 18 Mean Steel Gage) or stainless steel not less than thirty-seven thousandths (0.037) inch (No. 20 Mean Steel Gage) in thickness, or of other approved materials of equivalent strength, fire resistance, and corrosion resistance.\* Hoods of copper shall be of copper sheets weighing at least twenty-four (24) ounces per square foot.

**506.3.2 Painting or Coating.** Surfaces that come into contact with food, and surfaces from which food may drain, drip, or be subjected to splash, spillage, or other food soiling shall:

- (1) not impart toxic substances, odor, color, or taste to food;
- (2) be smooth and cleanable;
- (3) be corrosion-resistant with a material that is noncracking and nondripping; and
- (4) not be coated with a lead based coating.

**506.3.3 Seams, Joints.** All seams, joints, and penetrations of the hood enclosure that directs and captures grease-laden vapors and exhaust gases, to its lower outermost perimeter of the entire hood assembly shall have a liquidtight continuous external weld or be sealed by labeled devices. Internal hood joints, seams, filter support frames, and appendages attached inside the hood need not be welded but shall be sealed or otherwise be made greasetight. All materials used to seal interior joints shall be labeled.

**506.3.4 Insulation.** Insulation materials other than electrical insulation shall be identified as having a flame spread rating of twenty-five (25) or less when tested in accordance with ASTM E84.

**506.3.5 Hood Size and Location.** For canopy type hoods, the inside edge of the hood shall overhang or extend a horizontal distance of not less than six (6) inches beyond the edge of the cooking surface on all exposed sides, and the vertical distance between the lip of the hood and the cooking surface shall not exceed four (4) feet. Hoods of the noncanopy or backshelf types shall be located a maximum of three (3) feet above the cooking surface. The inside edge of the hood shall overhang or extend a horizontal distance of not less than three (3) inches beyond the edge of the cooking surface on exposed ends. The front edge of the hood shall be set back a maximum of twelve (12) inches from the edge of the cooking surface.

**506.3.6 Labeled Hoods.** Labeled hood assemblies shall be considered as complying with this chapter and shall be installed in accordance with the conditions of labeling and the manufacturer's instructions.



#### 506.4 Exhaust hood assemblies with integrated supply air plenums

506.4.1 General. The construction and size of the hood shall comply with the requirements of subsection 506.3.

506.4.2 \*Supply Fire Dampers. A fire damper shall be installed in the supply air plenum at each point where a supply air duct inlet or a supply air outlet penetrates the continuously welded shell of the assembly. The damper shall be constructed of at least the same gage as the shell. The actuation device of the damper shall have a maximum rating of two hundred eighty-six degrees Fahrenheit (286°F). Supply air plenums that discharge air from their face rather than from the bottom or into the exhaust hood and that are isolated from the exhaust hood by the continuously welded shell extending to the lower outermost perimeter of the entire hood assembly do not require a fire damper.\*

506.4.3 Exhaust Fire Dampers. Fire dampers shall not be installed in an exhaust hood assembly.

EXCEPTION: Labeled hood assemblies with exhaust dampers shall be permitted.

506.4.4 Labeled Hood Assemblies. Labeled hood assemblies shall be installed in accordance with the conditions of the labeling and the manufacturer's instructions.

#### 506.5 Grease removal devices in hoods

506.5.1 \*Grease Removal Devices. Labeled grease filters, baffles, or other approved grease removal devices for use with commercial cooking equipment shall be provided for Type I hoods. Mesh filters shall not be used.

506.5.2 Installations. The distance between the grease removal device and the cooking surface shall be as great as possible. Where grease removal devices are used in conjunction with charcoal or charcoal-type broilers, including gas or electrically heated charbroilers, a minimum vertical distance of four (4) feet shall be maintained between the lower edge of the grease removal device and the cooking surface.

EXCEPTIONS: 1. Grease removal devices supplied as part of labeled hood assemblies shall be installed in accordance with the terms of the labeling and the manufacturer's instructions.

2. For cooking equipment without exposed flame and where fire gases bypass grease removal devices, the minimum vertical distance may be reduced to not less than six (6) inches.\*

506.5.3 Protection. Grease removal devices shall be protected from combustion gas outlets and from direct flame impingement where the distance between the grease removal device and the appliance flue outlet (heat source) is less than eighteen (18) inches. This protection may be accomplished by the installation of a steel or stainless steel baffle plate between the heat source and the grease removal device. The baffle plate shall be so sized and located that flames or combustion gases must travel a distance not less than eighteen (18) inches from the heat source to the grease removal device.

EXCEPTION: See Exceptions No. 1 and No. 2 to subsection 506.5.2.

506.5.4 \*Filters. Filters shall be tight-fitting and firmly held in place, and shall be readily accessible and removable for cleaning. Filters shall be installed at an angle not less than forty-five (45) degrees from the horizontal. Filters shall be equipped with a drip tray beneath the lower edge of the filters. The tray shall be kept to the minimum size needed to collect the grease and be pitched to drain to an enclosed metal container having a capacity not exceeding one (1) gallon.\*

#### 506.6 Type II exhaust hood construction

506.6.1 Materials. Type II hoods shall be constructed of galvanized steel, stainless steel, copper, twenty-four thousandths (0.024) inch (No. 24 gage) steel, or other approved material.

Hoods constructed of copper shall be of copper sheets weighing at least twenty-four (24) ounces per square foot. Hoods constructed of stainless steel shall have a minimum thickness of thirty-thousandths (0.030) inch.

506.6.2 Fabrication and Installation. Hoods shall be secured in place by noncombustible supports. Joints and seams shall be substantially tight. Solder shall not be used except for sealing a joint or seam.

506.6.3 Painting and Coating. Surfaces that come into contact with food, and surfaces from which food may drain, drip, or be subjected to splash, spillage, or other food soiling shall:

- (1) not impart toxic substances, odor, color, or taste to food;
- (2) be smooth and cleanable;
- (3) be corrosion-resistant with a material that is noncracking and nondripping; and
- (4) not be coated with a lead based coating.

506.6.4 Hood size and location. For canopy type hoods, the inside edge of the hood shall overhang or extend a horizontal distance of not less than six (6) inches beyond the edge of the cooking surface or equipment served on all exposed sides, and the vertical distance between the lip of the hood and the cooking surface or equipment served shall not exceed four (4) feet.

Hoods of noncanopy or backshelf types shall be located a maximum of three (3) feet above the cooking surface

or equipment served. The inside edge of the hood shall overhang or extend a horizontal distance of not less than three (3) inches beyond the edge of the cooking surface or equipment served on exposed ends. The front edge of the hood shall be set back a maximum of twelve (12) inches from the edge of the cooking surface or equipment served.

#### 506.7 Air movement

506.7.1 Makeup Air. Each room provided with an exhaust system required by this chapter shall have filtered air supplied to the room approximately equal to the amount of air to be exhausted and shall be adequate to prevent a negative pressure in the commercial cooking areas from exceeding two-hundredths (0.02) inch of water column. Windows and doors shall not be used for the purpose of supplying makeup air.

The makeup air shall not reduce the temperature of the occupied space to less than sixty-five degrees Fahrenheit (65°F) at five (5) feet above the floor throughout the room.

506.7.2 Compensating Hoods. Compensating hoods shall extract at least fifty percent (50%) of the required air flow from the kitchen area.

**EXCEPTION:** Labeled hoods that are installed in accordance with the conditions of the labeling and the manufacturer's instructions.

506.7.3 Capacity of Canopy Hoods. Canopy-type cooking hoods shall exhaust through the hood a minimum quantity of air determined by application of the formulas in items 1 through 4 below:

**WHERE:** A = the horizontal surface area of the hood,  
in square feet.

P = that part of the perimeter of the hood  
that is open, in feet.

D = distance in feet between the lower lip of  
the hood and the cooking surface.

Q = quantity of air, in cubic feet per minute.

When cooking equipment is installed back-to-back and is covered by a common island-type hood, the airflow required may be calculated using the formula for three (3) sides exposed. When all appliances are electric, the airflow required may be reduced to eighty percent (80%) of the formula value. Type II hood airflow requirements shall be in accordance with item 4 below:

1. Type I hoods for use over charcoal and other solid-fuel charbroilers shall be provided with separate exhaust systems. Undefined cooking equipment other than charcoal and solid-fuel charbroilers may be installed under a common hood. The minimum airflow for charcoal, solid-fuel, and grease-burning charbroilers and undefined equipment shall be:

Number of Exposed Sides	Formula
4 (island or central hood)	$Q = 300A$
3 or less	$Q = 200A$
Alternate formula	$Q = 100PD$

2. Type I hoods when the cooking equipment includes appliances such as deep-fat fryers:

Number of Exposed Sides	Formula
4 (island or central hood)	$Q = 150A$
3 or less	$Q = 100A$
Alternate formula	$Q = 100PD$

3. Type I hoods where the cooking equipment includes appliances such as rotisseries, grills, and ranges:

Number of Exposed Sides	Formula
4 (island or central hood)	$Q = 100A$
3 or less	$Q = 75A$
Alternate formula	$Q = 50PD$

4. Type I hoods where the cooking equipment includes appliances such as ranges, roasters, roasting ovens, pastry ovens, and equipment approved for use under a Type II hood, such as pizza ovens. Solid-fuel ovens shall be provided with separate exhaust systems:

Number of Exposed Sides	Formula
4 (island or central hood)	$Q = 75A$
3 or less	$Q = 50A$

Alternate formula  $Q = 50PD$

**EXCEPTION:** Labeled exhaust hoods are to be installed in accordance with the conditions of labeling and the manufacturer's instructions.

**506.7.4 Capacity of Noncanopy Hoods.** In addition to all other requirements for hoods specified in this section, the volume of air exhausting through noncanopy-type hoods to the duct system shall be not less than three hundred (300) cubic feet per minute per lineal foot of hood.

**EXCEPTION:** Labeled exhaust hoods installed in accordance with the conditions of labeling and the manufacturer's instructions.

**506.7.5 Exhaust Duct Velocity.** The exhaust velocity for duct systems serving Type I hoods shall not be less than one thousand five hundred (1,500) cubic feet per minute.

### 506.8 Duct systems

**506.8.1 Materials.** Grease ducts and plenums serving a Type I hood shall be constructed of at least fifty-five thousandths (0.055) inch thick (No. 16 manufacturer's standard gage) steel or stainless steel at least forty-four thousandths (0.044) inch in thickness.

**EXCEPTION:** Labeled grease ducts installed in accordance with the conditions of labeling and the manufacturer's recommendations.

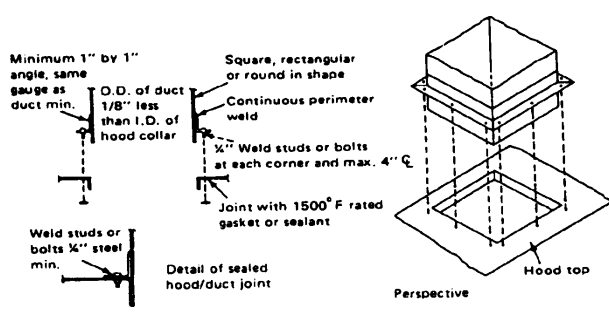
Ducts and plenums serving Type II hoods shall be constructed of rigid metallic materials as set forth in Chapter 6. Duct bracing and supports shall comply with Chapter 6. Ducts subject to positive pressure shall be sealed.

**506.8.2 Seams and Joints.** Seams and joints shall be made with a continuous liquidtight weld or braze made on the external surface of the duct system.

**EXCEPTIONS:** 1. Labeled grease ducts installed in accordance with the conditions of the label and manufacturer's recommendations.

2. Penetrations sealed by labeled devices.

3. Duct to hood collar connections as shown below in Figure 506.8 shall be permitted.



\*Figure No. 506.8

When a centrifugal fan with bottom horizontal discharge is located outside the building, a duct or duct fitting that diverts the discharge from the grease exhaust duct system in an upward direction may be connected to the fan outlet, provided the following conditions are met:

1. The duct or duct fitting shall be constructed of metal as set forth in Chapter 6 of this code.
2. The maximum total developed length of the duct or duct fitting measured along the center line shall not exceed three (3) times the vertical dimension of the fan outlet.
3. The duct or duct fitting shall be provided with openings at the lowest point to permit drainage of grease to an approved collection device that is provided with ready access.

**506.8.3 Construction.** Ducts exposed to the outside atmosphere or subject to a corrosive environment shall be protected against corrosion by galvanization of metal parts, protection with noncorrosive paints, waterproof insulation, or other approved methods of protection.

**506.8.4 Openings.** Openings for installation, servicing, and inspection of labeled fire protection system devices and duct cleaning shall be provided in ducts and enclosures. Shaft enclosure openings required to reach access panels in the ductwork shall be large enough for removal of the access panel.

Openings for installation, servicing, and inspection shall be provided at the sides or at the top of the duct, whichever is more accessible, and at changes of direction.

**EXCEPTION:** Portions of the duct that are accessible from the duct entry or discharge.

\*For labeled hoods with dampers in the exhaust collar, an access panel for cleaning and inspections shall be provided in the duct or the hood collar. This panel shall be as close to the hood as possible but not to exceed eighteen (18) inches.

Exhaust fans with ductwork connected to both sides shall have access for cleaning and inspection within three (3) feet on each side of the fan.

Openings shall conform to the following:

1. On horizontal ducts at least one (1) twenty by twenty (20 × 20) inch opening shall be provided for personnel entry. Where an opening of this size is not possible, openings large enough to permit cleaning to bare metal shall be provided at a maximum of twelve (12) foot intervals.

2. In horizontal sections, the lower edge of the opening shall be not less than one and one-half (1½) inches from the bottom of the duct.

3. On vertical ductwork where personnel entry is possible, access shall be provided at the top of the vertical riser to accommodate descent. Where personnel entry is not possible, access for cleaning shall be provided on each floor.

4. Access panels shall be of the same material and thickness as the duct. Access panels shall have a gasket or sealant that is rated for one thousand five hundred degrees Fahrenheit (1,500 °F) and shall be greasetight. Fasteners used to secure the access panels, such as bolts, weld studs, latches, or wing nuts, shall be carbon steel or stainless steel and shall not penetrate duct walls.

**EXCEPTION:** Labeled grease duct access door assemblies (access panels) shall be installed in accordance with the conditions of labeling and the manufacturer's instructions.

5. Openings for installation, servicing, and inspection of labeled fire protection system devices and duct cleaning shall be provided in ducts and enclosures.

506.8.5 Access. A sign shall be placed on all access panels stating:

**ACCESS PANEL-DO NOT OBSTRUCT\***

506.8.6 Exhaust Dampers. Exhaust dampers shall not be installed in exhaust duct systems.

**EXCEPTION:** Exhaust fire dampers shall be permitted if labeled and installed in accordance with the conditions of labeling and the manufacturer's instructions.

506.9 Duct installation

506.9.1 Bracing and Supports. Duct bracing and supports shall be of noncombustible material securely attached to the supporting structure and designed to carry gravity and lateral loads within the stress limitations of the building code. Bolts, screws, rivets, and other mechanical fasteners shall not penetrate duct walls.

506.9.2 Prevention of Grease Accumulation. Duct systems serving a Type I hood shall be so constructed and installed that grease cannot become pocketed in any portion thereof, and the system shall slope not less than one-fourth (¼) inch per lineal foot toward the hood or toward an approved grease reservoir. Where horizontal ducts exceed seventy-five (75) feet in length, the slope shall be not less than one (1) inch per lineal foot. When a centrifugal fan is used, it shall be positioned so the discharge outlet is either vertical or bottom horizontal with the air so diverted that there will be no impingement on the roof, other equipment, or parts of the structure. A vertical discharge fan shall be manufactured with an approved drain outlet at the bottom of the housing to permit drainage of grease to an approved collection device that is provided with ready access.

506.9.3 Duct Enclosure. A grease duct serving a Type I hood which penetrates required fire-resistive construction shall be enclosed in a duct enclosure from the point of penetration. A duct shall only penetrate exterior walls at locations where unprotected openings are permitted by the building code. Duct enclosures shall be constructed as the building code requires shaft enclosures to be constructed, except that labeled duct enclosure systems conforming to the fire-resistive construction requirements of the building code for shafts shall be allowed. Duct enclosures shall be of at least one-hour fire-resistive construction and shall be of two-hour fire-resistive construction in Types I-A and II-A buildings, as defined in the building code.

**EXCEPTION:** Single story noncombustible construction where the duct does not penetrate fire-resistive construction.

The duct enclosure shall be sealed around the duct at the point of penetration of fire-resistive construction and vented to the exterior through weather-protected openings. The enclosure shall be separated from the duct

by at least three (3) inches and not more than twelve (12) inches and shall serve a single grease exhaust duct system, except that labeled duct enclosure systems conforming to the fire-resistive construction requirements of the building code for shafts shall be allowed.

**506.9.4 Fire-Resistive Access Opening.** When openings are located in ducts within a fire-resistive shaft or a duct enclosure, access openings shall be provided in the shaft or duct enclosure at each opening. These access openings shall be equipped with tight-fitting sliding or hinged self-closing fire rated doors which are equal in fire-resistive protection to that of the shaft or duct enclosure. These access openings required to reach access panels in the ductwork shall be large enough to allow removal of the access panels.

**506.9.5 Duct System for Multiple Hoods.** A separate grease duct system shall be provided for each Type I hood, except that a single duct system may serve more than one (1) hood of a single business located in the same story of a building, provided that all hoods served by the system shall be located in the same room or adjoining rooms; portions of the interconnecting ducts shall not pass through any construction which would require the opening to be protected as specified in the building code.

**506.9.6 Wall Penetration.** Ducts shall not pass through area separation walls.

**506.9.7 \*Interconnection.** Duct systems shall not be interconnected with any other building ventilating or exhaust system.

**506.9.8 Termination of Exhaust Systems.** The exhaust system shall terminate as follows:

1. Outside the building with a fan or duct; or
2. Through the roof or through a wall.

**506.9.8.1 Rooftop terminations shall be as follows:**

1. With a minimum of ten (10) feet of clearance from the outlet to adjacent buildings, property lines, and air intakes. Where space limitations absolutely prevent a ten (10) foot horizontal separation from an air intake, a vertical separation will be acceptable with the exhaust outlet being a minimum of three (3) feet above any air intake located within ten (10) feet horizontally.
2. With the exhaust flow directed up and away from the surface of the roof and a minimum of forty (40) inches above the roof surface.
3. With the ability to drain grease out of any traps or low points formed in the fan or duct near the termination of the system to a rainproof collection container or to a remote grease trap.
4. With a labeled grease duct; or
5. With a hinged up-discharge fan supplied with flexible weatherproof electrical cable and service hold-open retainer to permit proper inspection and cleaning and that is labeled for commercial cooking equipment, provided the ductwork extends a minimum of eighteen (18) inches above the roof surface, and the fan discharges a minimum of forty (40) inches above the roof surface.
6. With another approved fan, provided it conforms to subsections 506.9.8.1 item 2 and 506.9.8.1 item 3.
7. If exterior fans are located outside the roofline, they shall be provided with safe access and work surface for inspection and cleaning.

**506.9.8.2 Wall Terminations.** Wall terminations shall be as follows:

1. Through a noncombustible wall with a minimum of ten (10) foot of clearance from the outlet to adjacent buildings, property lines, grade level, combustible construction, electrical equipment or lines, and the closest point of any air intake at or below the plane of the exhaust termination. The closest point of any air intake above the plane of the exhaust termination shall be a minimum of ten (10) feet distant, plus twenty-five hundredths (0.25) foot per each one (1) degree from horizontal, the angle of degree being measured from the center of the exhaust termination to the center of the air intake.
2. With the exhaust flow directed perpendicularly outward from the wall face or upward.
3. With all the ductwork pitched to drain the grease back to the hood(s), or with a drain provided to bring the grease back to a container within the building or to a remote grease trap.
4. With a labeled grease duct.\*

**506.10 Exhaust fans**

**506.10.1 \*Exhaust Fans for Commercial Cooking Equipment.** Approved up-discharge fans with motors surrounded by the air stream shall be hinged, supplied with flexible weatherproof electrical cable and service hold-open retainers, and labeled for this use. Other exhaust fans for this use shall be approved for continuous operation. Both shall be installed to comply with the following requirements:

1. All wiring and electrical equipment shall comply with the Indiana Electrical Code, 675 IAC 17.
2. Means shall be provided for inspections, servicing, and cleaning.\*

3. Fans manufactured from steel shall be nonsparking.

506.10.2 \*Airflow. The air velocity through any duct shall be not less than one thousand five hundred (1,500) feet per minute.

Exhaust air volumes for hoods shall be of sufficient level to provide for capture and removal of grease-laden cooking vapors. Test data or performance acceptable to the code official, or both, shall be provided, displayed, or both, upon request by the code official.

EXCEPTION: Lower exhaust air volumes shall be permitted during no-loading cooking conditions provided they are sufficient to capture and remove flue gases and residual vapors from cooking equipment.

506.10.3 Hood Fans. Hood exhaust fan(s) shall continue to operate after the extinguishing system has been activated unless fan shutdown is required by a labeled component of the ventilation system or by the design of the extinguishing system. It is not required to restart the hood exhaust fan when the extinguishing system is activated if the exhaust fan and all cooking equipment served by the fan had previously been shut down.\*

506.11 Electrical equipment

506.11.1. Motors, lights, and other electrical devices shall not be installed in hoods or located in the path of travel of exhaust products.

EXCEPTION: Where specifically labeled for such use and installed in accordance with the conditions of labeling.

\*Wiring or wiring systems shall not be installed in ducts.\* All electrical equipment shall be installed in accordance with the Indiana Electrical Code, 675 IAC 17.

506.12 Auxiliary equipment

506.12.1 \*Fume incinerators, thermal recovery units, air pollution control devices, or other devices shall be permitted to be installed in ducts or hoods or located in the path of travel of exhaust products when specifically approved under the General Administrative Rules, 675 IAC 12-6-11. The equipment shall not increase the fire hazard.\*

506.13 Clearance to combustibles

506.13.1 \*Hoods and ducts shall have a clearance of at least eighteen (18) inches to combustible material, three (3) inches to limited-combustible material, and zero (0) inches to noncombustible material. When these clearances cannot be maintained, one (1) of the following methods shall be used:

1. When the labeled hood, duct, or duct enclosure system is installed in accordance with the provisions of its labeling and the manufacturer's instructions for reduced clearance.
2. Duct enclosures in accordance with subsection 506.9.3.
3. Combustible material protected as follows:

Type of Protection	Clearance to Combustible Material
0.013-in. (28 gage) sheet metal spaced out 1 in. on noncombustible spacers.	9 in.
0.027-in. (22 gage) sheet metal on 1 in. mineral wool bats reinforced with wire mesh or equivalent spaced out 1 in. on noncombustible spacers.*	3 in.

506.14 Performance test

506.14.1 Upon completion and before final approval, if final approval is required by local ordinance, of the installation of a ventilation system serving commercial food heat-processing equipment, an air balance to verify the rate of exhaust and supply airflow shall be performed and documented.

506.15 Fire-extinguishing equipment

506.15.1 Approved fire-extinguishing equipment shall be provided for the protection of all Type I hoods. Portable fire extinguishers shall be provided in the kitchen for the protection of the cooking equipment.

506.15.2 Approved fire-extinguishing equipment shall be provided to protect cooking appliances such as deep

fat fryers, griddles, upright broilers, charbroilers, grease-burning charbroilers, range tops, and grills. Protection shall also be provided for the enclosed plenum space within the hood above the filters and in the exhaust ducts serving the hood.

506.15.3 See Section 903.2.14.2 of the Indiana Building Code.

506.16 Types of fire-extinguishing equipment

506.16.1 \*Types. Fire-extinguishing equipment shall include both fixed automatic fire-extinguishing systems and portable fire extinguishers.\*

506.16.2 System. The automatic fire-extinguishing system for commercial cooking systems shall be of a type recognized for protection of commercial cooking equipment and exhaust systems of the type and arrangement protected. Preengineered automatic dry- and wet-chemical extinguishing systems shall be tested in accordance with UL 300 and listed and labeled for the intended application. Other types of automatic fire-extinguishing systems shall be listed and labeled for specific use as protection for commercial cooking operations. The system shall be installed in accordance with this code, its listing and the manufacturer's installation instructions.

Other automatic fixed pipe systems shall be of an approved design and shall be one (1) of the following types:

1. Automatic sprinkler system shall be designed and installed in accordance with National Fire Protection Association Standard 13 (675 IAC 13-1-8).
2. Water spray system shall be designed and installed in accordance with National Fire Protection Association Standard 13 and 15 (675 IAC 13-1-8 and 675 IAC 22-2.2-4).
3. Carbon dioxide, dry chemical, wet chemical extinguishing systems shall be designed and installed in accordance with National Fire Protection Association Standard 12, 17, 17A, and 2001 (675 IAC 13-1-5, 675 IAC 13-1-9.5, 675 IAC 13-1-9.6, and 675 IAC 13-1-28).

506.16.3 Dry Chemical Type. Alkaline dry chemical-type portable fire extinguishers shall be installed in the kitchen area for the protection of the cooking equipment. Extinguishers shall have a minimum rating of forty (40) B (sodium bicarbonate or potassium bicarbonate base) and shall be conspicuously located and readily accessible along exit paths from the area. The extinguishers shall be a minimum of ten (10) feet and maximum of twenty (20) feet from the cooking equipment. The top of the extinguishers shall be a maximum of five (5) feet above the floor and shall be protected from physical damage.

506.17 Design requirement for the fire extinguisher equipment

506.17.1 Chemical Systems. The chemical used in a system shall not be substituted for the required chemical unless the substitute is labeled for that particular system, and is recommended by the manufacturer of the equipment, and is approved. Systems shall be designed on the basis of the flow and extinguishing characteristics of a specific formulation of chemical. Chemical solutions of different formulations or manufacturer shall not be mixed. A nameplate shall be permanently affixed to the control panel identifying the agent or agents labeled for use in the system.

506.17.2 Installation Instructions. The manufacturer's installation and maintenance manual shall be used to identify the system limitations and the applications for which chemical extinguishing systems shall be considered acceptable. Only labeled system components referenced or permitted in the manufacturer's installation and maintenance manual shall be installed as part of the system.

506.17.3 Container Location. Chemical containers and expellant gas assemblies shall be located within the minimum and maximum temperature range indicated in the manufacturer's installation and maintenance manual. Chemical containers and expellant gas assemblies shall not be located where they would be subjected to mechanical, chemical, or other damage.

Chemical containers and expellant gas assemblies shall be located where they are readily accessible for inspection. The top of chemical and expellant gas assemblies shall not be located more than eight (8) feet above the floor.

506.17.4 Material. Wherever "pipe" is used in this chapter, it shall be understood to also mean "tube". Pipe and fittings shall be of noncombustible material having physical and chemical characteristics compatible with the chemical solution. Pipe fittings shall be compatible with the piping materials and connection method.

506.17.5 Penetrations. Where pipe penetrates a duct or hood, the penetration shall have a liquidtight continuous external weld or shall be sealed by a labeled device.

506.17.6 Installation. Pipe and fittings shall be installed in accordance with the manufacturer's installation and maintenance manual. Pipe shall be reamed and cleaned before assembly. Pipe-thread compound or tape shall not be used in agent distribution pipe and fitting connections.

EXCEPTION: Pipe-thread tape shall be permitted when installed in accordance with the manufacturer's

installation and maintenance manual.

**506.17.7 Supports.** The piping system shall be rigidly supported to prevent movement and shall be protected from mechanical or other damage.

**506.17.8 Nozzles.** Discharge nozzles shall be labeled for the purpose. All discharge nozzles shall be provided with caps or other suitable devices to prevent the entrance of grease, vapors, moisture, or other foreign materials into the piping. Nozzles shall be selected in accordance with the manufacturer's installation and maintenance manual.

**506.18 Shutdown devices and signals**

**506.18.1 Operation.** The operation of fire-extinguishing equipment other than wet chemical and water fire-extinguishing equipment shall automatically shut off all sources of fuel or power to all equipment requiring protection by that fire-extinguishing equipment. Any gas appliance not requiring protection but located under the same exhaust system shall also be shut off. All shutdown devices shall be considered integral parts of the fire-extinguishing equipment and shall function with the operation of the fire-extinguishing equipment. This equipment shall be of the type that requires manual resetting prior to fuel or power restoration. All reset devices shall have ready access.

Wet chemical and water fire-extinguishing equipment shall be provided with an automatic means to ensure the shutdown of fuel or power to the protected appliances and other appliances located under the exhaust system protected by the fire-extinguishing equipment upon the system activation.

**506.18.2 Exhaust Fans.** Exhaust fans shall continue to operate after the fire-extinguishing system has been activated. Supply air fans serving exhaust hood assemblies with integrated supply air plenums shall be shut off when the fire-extinguishing equipment is activated.

**506.18.3 Alarms.** The operation of any fire-extinguishing equipment applicable to this code shall be connected to any type of fire alarm system serving the building, when such alarm system is present. Power to operate the fire-extinguishing equipment shall be monitored by a supervisory alarm.

**506.19 Manual activation of fire-extinguishing equipment**

**506.19.1 Fixed pipe automatic fire-extinguishing equipment** shall be installed to conform with the following requirements:

1. An accessible manual activation device installed at an approved location not more than five (5) feet above the floor shall be provided for wet chemical, dry chemical, carbon dioxide, or other approved equipment. The activation device shall be either mechanical or electrically operated. If electrical power is used, the equipment shall be connected to standby power and a visual means shall be provided to show that the extinguishing equipment is energized.

**EXCEPTION:** An automatic sprinkler or water spray system shall not require manual activation.

2. Instructions for manually operating the fire-extinguishing equipment shall be posted at a location immediately adjacent to the manual activation device within the kitchen.

3. Automatic sprinkler or water spray systems shall be controlled by a separate readily accessible indicating type control valve that is identified.

**506.20 Installation approval of fire-extinguishing equipment**

**506.20.1** The installer of the fire-extinguishing equipment shall document to the owner that the completed system has been installed in accordance with this code and the manufacturer's installation and maintenance manual. This documentation shall include testing in accordance with the manufacturer's installation and maintenance manual. This documentation shall include complete details of the tests performed. This documentation shall include a set of as-built drawings showing the equipment layout and the equipment type. It shall identify the cooking equipment protected and its location under the hood. This documentation shall be permanently maintained on-site. If this documentation is not maintained on-site, then a new test of the system shall be required. The tests performed by the installer shall include operation of mechanical and/or electrical actuation devices. Where distribution piping for fire-extinguishing equipment other than sprinkler or water spray type which cannot be visually inspected shall be air pressure tested to a pressure of not less than twenty (20) psi.

Sprinkler or water spray piping shall be hydrostatically tested where sprinkler or water spray piping is



required.

After the test, the system shall be charged and placed in the normal operating condition in accordance with the manufacturer's installation and maintenance manual.

**506.21 Maintenance of exhaust hood systems and fire-extinguishing equipment**

**506.21.1. Maintenance shall be in accordance with the Indiana Fire Prevention Code, 675 IAC 22.**

**506.22 Copyright**

**506.22.1. Portions of this rule are reprinted from NFPA 96-1991, Vapor Removal from Commercial Cooking Equipment, Copyright 1991, National Fire Protection Association, Quincy, Massachusetts 02269. Those portions are found at the following sections of this rule:**

**506.1**

**506.3**

**506.4**

**506.5**

**506.8**

**506.9**

**506.10**

**506.11**

**506.12**

**506.13**

**506.16**

Asterisks in the text indicate the beginning and ending of each portion of NFPA 96-1991 which is incorporated verbatim. (*Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-22*)

**675 IAC 18-1.4-23 Section 510.1; general**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 23. Change Section 510.1 General to read as follows: This section shall govern the design and construction of duct systems for hazardous exhaust that are within the scope of Section 101.2 and shall determine where such systems are required. Hazardous exhaust systems are systems designed to capture and control hazardous emissions generated from product handling or processes, and convey those emissions to the outdoors. Hazardous emissions include flammable vapors, gases, fumes, mists or dusts, and volatile or airborne materials posing a health hazard, such as toxic or corrosive materials. For the purposes of this section, the health-hazard rating of materials shall be as specified in NFPA 704.** (*Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-23*)

**675 IAC 18-1.4-24 Section 511.1; dust, stock and refuse conveying systems**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 24. Change Section 511.1 Dust, stock and refuse conveying systems to read as follows: Dust, stock and refuse conveying systems that are within the scope of Section 101.2 shall comply with the provisions of Section 510 and Sections 511.1 through 511.2.** (*Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-24*)

**675 IAC 18-1.4-25 Section 512.1; general**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 25. Change Section 512.1 General to read as follows: When a subslab soil exhaust system is provided and is within the scope of Section 101.2, the duct shall conform to the requirements of this section.** (*Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-25*)

**675 IAC 18-1.4-26 Section 513; smoke control systems**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 26. Delete Section 513 Smoke control systems and insert the following: See Section 909 of the Indiana Building Code (675 IAC 13).** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-26)*

**675 IAC 18-1.4-27 Section 603.3; metallic ducts**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 27. Change Section 603.3 Metallic ducts to read as follows:**

**603.3 Metallic ducts.** All metallic ducts shall be constructed and sealed as specified in the SMACNA HVAC Duct Construction Standards - Metal and Flexible.

**EXCEPTION:** Ducts installed within single dwelling units shall have a minimum thickness as specified in TABLE 603.3.

**603.3.1 Sealants.** Ducts shall be sealed with sealants listed for that purpose, and the sealant shall comply with the flame spread and smoke developed requirement when required by the Indiana Building Code (675 IAC 13) and this code. Ducts shall be sealed in accordance with SMACNA HVAC Duct Construction Standards.

**603.3.2 Support.** All duct suspension and support systems for seismic loads shall comply with the Indiana Building Code (675 IAC 13) and as specified by a registered design professional.

TABLE 603.3

**DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESSES FOR SINGLE DWELLING UNITS**

DUCT SIZE	GALVANIZED STEEL		APPROXIMATE ALUMINUM B&S GAGE
	Minimum thickness (inches)	Equivalent galvanized Gage No.	
<b>Round ducts and enclosed rectangular ducts</b>			
14" or less	0.013	30	26
Over 14"	0.016	28	24
<b>Exposed rectangular ducts</b>			
14" or less	0.016	28	24
Over 14"	0.019	26	22

For SI: 1 inch = 25.4 mm.

*(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-27)*

**675 IAC 18-1.4-28 Section 607.2.1; smoke control system**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 28. Change Section 607.2.1 Smoke control system as follows: Change "Section 512" to read "Section 909 of the Indiana Building Code (675 IAC 13)".** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-28)*

**675 IAC 18-1.4-29 Section 607.3.2.1; smoke damper actuation methods**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 29. In Section 607.3.2.1 Smoke damper actuation methods, after "Section 907.10", insert "of the Indiana Building Code (675 IAC 13)".** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-29)*

**675 IAC 18-1.4-30 Section 607.5; where required**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 30. Change Section 607.5 Where required to read as follows: Fire dampers, smoke dampers, combination fire/smoke dampers and ceiling radiation dampers shall be provided at the locations prescribed in this section**

and the Indiana Building Code (675 IAC 13) and as shown on the construction drawings as prepared by the registered design professional. Where an assembly is required to have both fire dampers and smoke dampers, combination fire/smoke dampers or a fire damper and a smoke damper shall be required. *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-30)*

**675 IAC 18-1.4-31 Section 607.5.1; fire walls**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 31. Change Section 607.5.1 Fire walls to read as follows: Ducts and air transfer openings permitted in fire walls in accordance with Section 705.11 of the Indiana Building Code (675 IAC 13) shall be protected with approved fire dampers installed in accordance with their listing.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-31)*

**675 IAC 18-1.4-32 Section 607.5.2; fire barriers**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 32. Change item 2 in Section 607.5.2 Fire barriers to read as follows: 2. Ducts are used as part of an approved smoke control system in accordance with Section 909 of the Indiana Building Code (675 IAC 13).** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-32)*

**675 IAC 18-1.4-33 Table 803.10.6; connector clearances to combustibles**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 33. In TABLE 803.10.6 CONNECTOR CLEARANCES TO COMBUSTIBLES, change, at the bottom of the MINIMUM CLEARANCE (inches) column, “(As determined by the code official)” to read “(as approved by the code official)”.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-33)*

**675 IAC 18-1.4-34 Section 804; direct-vent, integral vent, mechanical vent and ventilation/exhaust venting**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 34. Change the title of Section 804 DIRECT-VENT, INTEGRAL VENT, MECHANICAL VENT AND VENTILATION/EXHAUST VENTING to read as follows: DIRECT-VENT, INTEGRAL VENT AND MECHANICAL DRAFT SYSTEMS.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-34)*

**675 IAC 18-1.4-35 Section 901.1; scope**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 35. Change the last sentence of Section 901.1 Scope to read as follows: The approval, design, installation, construction and alteration of gas-fired appliances that are within the scope of Section 101.2 shall be regulated by the Indiana Fuel Gas Code (675 IAC 25).** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-35)*

**675 IAC 18-1.4-36 Section 914; sauna heaters**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 36. Change the title to Section 914 Sauna heaters to read as follows: Sauna heaters within the scope of Section 101.2.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-36)*

**675 IAC 18-1.4-37 Section 915.1; general**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 37. Change Section 915.1 General to read as follows: The installation of liquid-fueled stationary internal combustion engines and gas turbines, including storage and piping that are within the scope of Section 101.2, shall meet the requirements of NFPA 37 (675 IAC 13-1-27).** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-37)*

**675 IAC 18-1.4-38 Section 916.1; general**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 38. Change Section 916.1 General to read as follows: Pool and spa heaters that are within the scope of Section 101.2 shall be installed in accordance with the manufacturer's instructions. Oil-fired pool heaters shall be tested in accordance with UL 726.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-38)*

**675 IAC 18-1.4-39 Section 917.1; cooking appliances**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 39. Change the first sentence of Section 917.1 Cooking appliances to read as follows: Cooking appliances that are within the scope of Section 101.2 and that are designed for permanent installation and are part of a Class 1 structure shall be listed, labeled, and installed in accordance with the manufacturer's installation instructions.** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-39)*

**675 IAC 18-1.4-40 Section 923.1; general**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 40. Change the second line of Section 923.1 General to read as follows: "kilns that are within the scope of Section 101.2 and that are used for ceramics, have a maximum interior vol-...".** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-40)*

**675 IAC 18-1.4-41 Section 924.1; general**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 41. Change the first line of Section 924.1 General to read as follows: "Stationary fuel cell power plants that are within the scope of Section 101.2 and having a...".** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-41)*

**675 IAC 18-1.4-42 Section 1001.1; scope**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13-2-9; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 42. Change Section 1001.1 Scope as follows:**

**(1) Change the first sentence of Section 1001.1 Scope to read as follows: This chapter shall govern the installation and alteration of boilers, water heaters and pressure vessels that are within the scope of Section 101.2.**

**(2) Add Exception 8 to read as follows: 8. Boilers, water heaters and pressure vessels regulated by the Boiler and Pressure Vessel Board (680 IAC 2) under IC 22-13-2-9 are not regulated by this code.**

*(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-42)*

**675 IAC 18-1.4-43 Section 1003.3; welding**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 43. Change Section 1003.3 Welding by inserting "approved" before "nationally".** *(Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-43)*

**675 IAC 18-1.4-44 Section 1101.6; general**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 44. Change Section 1101.6 General to read as follows: Refrigeration systems within the scope of Section 101.2 shall comply with the requirements of this code and, except as modified by this code, ASHRAE 15. Ammonia-refrigerating systems shall comply with this code and, except as modified by this code, ASHRAE 15. (Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-44)**

**675 IAC 18-1.4-45 Section 1102.2.2; purity**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 45. Change Section 1102.2.2 Purity to read as follows: Refrigerants used in refrigeration systems shall be new, recovered or reclaimed refrigerants in accordance with Section 1102.2.2.1, Section 1102.2.2.2 or Section 1102.2.2.3. The installer shall furnish to the owner or the owner's representative, a signed declaration that the refrigerant used meets the requirements of Section 1102.2.2.1, Section 1102.2.2.2 or Section 1102.2.2.3. (Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-45)**

**675 IAC 18-1.4-46 Section 1109.1; testing required**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 46. Change the third line of Section 1109.1 Testing required to read as follows: "manufacturer's instructions and local ordinance:...". (Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-46)**

**675 IAC 18-1.4-47 Section 1206.9.1; flood hazard**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 47. Delete Section 1206.9.1 Flood hazard and insert "See local Ordinance.". (Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-47)**

**675 IAC 18-1.4-48 Section 1305.2.1; flood hazard**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 48. Delete Section 1305.2.1 Flood hazard and insert "See local ordinance.". (Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-48)**

**675 IAC 18-1.4-49 Section 1401.1; scope**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 49. Change Section 1401.1 Scope to read as follows: This chapter shall govern the construction, installation and alteration of systems, equipment and appliances intended to utilize solar energy for space heating or cooling, or domestic hot water heating. (Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-49)**

**675 IAC 18-1.4-50 Chapter 15; referenced standards**

Authority: IC 22-13-2-2

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

**Sec. 50. Change in the third sentence of Chapter 15, "Section 102.8" to "Section 101.3". (Fire Prevention and Building Safety Commission; 675 IAC 18-1.4-50)**

SECTION 2. 675 IAC 18-1.3 IS REPEALED.

***Notice of Public Hearing***

*Under IC 4-22-2-24, notice is hereby given that on September 16, 2002 at 10:00 a.m., at the Indiana Government Center-South, 402 West Washington Street, Conference Center Room B, Indianapolis; **AND** on November 6, 2002 at 10:00 a.m., at the Indiana Government Center-South, 402 West Washington Street, Conference Center Room B, Indianapolis, Indiana the Fire Prevention and Building Safety Commission will hold a public hearing on proposed new rules to adopt and amend the 2000 International mechanical code as the 2003 Indiana mechanical code, 2003 edition. Copies of these rules are now on file at the Indiana Government Center-South, 402 West Washington Street, Room W246 and Legislative Services Agency, One North Capitol, Suite 325, Indianapolis, Indiana and are open for public inspection.*

Patrick Ralston  
Secretary  
Fire Prevention and Building Safety Commission