

## Ordinance Submittal and Synopsis

Ordinance Title: 2006 International Mechanical and Fuel Gas Code  
24, 2007

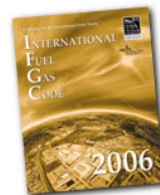
Date: January

Section Numbers/Titles: Chapter 11, Article II, Sections 11-31, 11-32, 11-33, 11-35, and 11-36.

First Reading: February 5, 2007

Requested Date of Hearing: February 20, 2007

Proposed By: Ron Bell  
Chief Building Official  
Planning and Building Services



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**Reason:** The attached ordinance proposes to adopt the 2006 International Mechanical Code (IMC) and the 2006 International Fuel Gas Code (IFGC) which is promulgated and published by the International Code Council (ICC). The IMC and IFGC is revised and published in a three-year code cycle.

The IMC regulates the design, installation, maintenance, alteration, and inspection of heating, ventilating, and air conditioning and refrigeration systems that are used to provide control of environmental conditions and related processes within buildings. The IFGC regulates the installation of fuel gas distribution piping and equipment, fuel gas-fired appliances, and fuel gas-fired appliance venting systems.

**Notable national changes from the 2003 to the 2006 IMC and IFGC are as follows:**

**[B] 302.3.4 Engineered wood products.** *This provision was added to the code because each specific manufacturer has their own specifications on the size and location of holes that are allowed to be cut.*

**304.3.1 Parking garages.** *As an option to the requirement of raising a fuel-fired appliance at least 18 inches above the floor in a parking garage, this new provision will eliminate the height requirement where the appliance is separated from the source of a flammable vapor spill by at least two rooms with doors. This section was added in the situation where there isn't enough height in a room or the appliance is too tall to allow said appliance to be raised 18 inches above the floor.*

**[B] 304.10 Guards.** *Guards will now be required for roof hatch openings that that are located within ten feet of a roof edge, as is already required for appliances, equipment, fans, or other components. This is also located in the building code.*

**306.3 Appliances in attics; 306.4 Appliances under floors.** *Exception Number 2 was added to increase the distance from 20 feet to 50 feet to an appliance installed in an attic and under-floor area where there is a ceiling height of six feet or more and a minimum 22-inch width along the passageway.*

**403.2 Outdoor air required.** *This section was added so that an engineered system may be utilized without actually meeting the requirements of the required outdoor ventilation air required in section 403.3. This gives the engineer the latitude to use ASHRAE 62 or other documentation; however it must be designed by a design professional.*

**403.2.1 Recirculation of air.** *Item 2 now gives an allowance for recirculating air where 10 percent or more of the recirculated air comes from said spaces, where before it just couldn't be recirculated to other spaces at all.*

*Item 3 now requires air from smoking lounges, nail salons, and common garages for multiple units (note b areas) to be exhausted with no exceptions for it to be recirculated; however, other areas that require exhaust may possibly be recirculated.*

**403.3 Ventilation rate.** *The American Society of Heating, Refrigeration, and Air-Conditioning Engineers( ASHRAE) Standard which provides an engineered alternate to the prescriptive requirements of the Mechanical Code has been updated from the 2001 to the 2004 national publication.*

**501.2.1 Location of exhaust outlets.** *This is a whole new section that clarifies the termination requirements for specific types of exhaust outlets. Item 4 will send you to specific sections for a few specific systems versus using the general items of 1 through 3.*

**501.3 Pressure equalization.** *The first change is to allow a mechanical means of exhausting the excess supply air versus only a natural means.*

*The second change is to allow several different ways to make air up if the exhaust air is greater than the supply air for a particular room. However, calculating the infiltration rate of a building is not to be allowed. In simpler terms, the air that is deficient for an area must be obtained by bringing in direct outside air, transfer air from a different room, or supply air.*

**502.19 Indoor firing ranges.** *Provisions for ventilation within indoor firing ranges have been added.*

**504.6.1 Maximum length.** *This was previously placed into the Mechanical Ordinance because the International Residential Code (IRC) allowed the utilization of booster fans to increase the allowable length of exhaust ducts serving clothes dryers. The IRC eliminated booster fans and subsequent extensions.*

| *The allowable length of clothes dryer's exhaust ducts must meet the provisions of the Mechanical Code of the appliance's manufacturer's installation instructions.*

**506.3.3.1 Grease duct test.** *This provision is added to ensure that all grease ducts are tested in front of the code official. This is something we have been requiring for years. This provision also provides how to do the grease duct test.*

**506.3.4 Air velocity.** *The minimum air velocity for a Type I hood grease duct has been reduced from 1,500 fpm to 500 fpm. Data from new studies have concluded that the grease in a Type I hood system does not fall away from the air at a greater rate with the slower velocity down to a certain point. This gives greater tolerances, especially for retrofits on existing buildings.*

**507.2.2. Type II hoods.** *This new provision clarifies that a Type II kitchen hood is not required for a single light-duty electric convection, bread, retherm or microwave oven, toasters, steam tables, popcorn poppers, hot dog cookers, coffee makers, rice cookers, egg cookers, and holding/warming ovens. The additional heat and moisture loads generated by such appliances shall be accounted for in the design of the HVAC system.*

**IMC Change.** *Products of combustion were added. Simply put, if a hot dog warmer was being installed that typically would not require a Type II hood, now if it was a gas-fired warmer that doesn't have a flue of any sort, a hood would be required and of course it would be required to be interlocked with the appliance to operate while cooking.*

*The third exception was added to allow just a single appliance of certain kinds to be installed without a hood, barring the extra load is added into the design of the heating and/or cooling loads.*

*The fourth exception gives certain items that will not require a Type II hood, barring the extra load is added into the design of the heating and/or cooling loads.*

**507.13.5 Dishwashing appliances.** *This is a new section to allow dishwashing hoods to have a lower CFM rate than what a typical Type II hood will require.*

**507.16 Performance test.** *The exhaust ventilation systems serving commercial cooking appliances are required to be tested. A provision was added so that the system must be in complete operation. Before, it required only the hood to be operational and not the make-up air system; this way, a true test is made.*

**602.2.1 Materials exposed within plenums.** *This section will affect plumbers installing drain waste and venting within plenums. An insulation wrap over ABS or PVC piping, drain waste, or venting will no longer be acceptable. The code provision is clarified to specify that any combustibles located within a plenum are required to be enclosed within a noncombustible raceway or enclosure.*

**[B] 607.5.2 Fire barriers.** *Added to clarify that ducts or air-transfer openings are not allowed to penetrate a vertical stair enclosure.*

**Notable local amendments to the 2006 IMC/IFGC are as follows:**

**101.2 Scope; 201.3 Terms defined in other codes.** *An exception that mandated building officials to allow the use of the International Existing Building Code as an alternative to other IMC provisions governing existing building mechanical systems has been eliminated. By local ordinance, the IExBC is specifically adopted because of our active use of the document over the past three years.*

**106.5.2 Fee schedule.** *The inspection fee for air handlers is proposed to be raised from \$10 to \$12 consistent with the cost of a furnace inspection. A fee of \$1 is proposed to be charged for the inspection of individual VAV boxes.*

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*This proposal is to raise the cost of after-hours inspections to \$70 per hour to be consistent with the actual cost of providing the service. This is also in line with the cost of providing after-hours inspections for the other divisions of Building Services.*

**107.1 Required inspections and testing.** *The opening paragraph was added to be consistent with the other divisions concerning the time that is considered necessary to complete an inspection after being notified by the mechanical contractor. The intent is to clarify that an inspection will be completed within one working day of obtaining notice of the inspection.*

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**304.9 Clearances from grade.** *This maintains the local ordinance requiring a minimum headroom clearance of 80 inches for any equipment or appliance, but is expanded to include the required headroom clearance for the required service area for the appliance.*

**306.5 Equipment and appliances on roofs or elevated structures.** *This section is locally modified to clarify that where an exterior ladder provides serviceable equipment access, the ladder is not required to extend closer than seven feet to grade.*

**401.4.1 Intake openings.** *This section defines the minimum distance that an outdoor air intake is required to be located away from a contaminant source such as a chimney, plumbing vent, etc. Horizontally was added to clarify the distance is not to be vertically or diagonally, but made no sense on a multi-story building. The provision inserting the term horizontal is eliminated by local ordinance.*

**Table 403.3 Required outdoor ventilation air.** *Table 403.3 is the table that defines the minimum amount of outdoor air that is required in any specific occupancy. It also has added footnote i for nail salons which says the required exhaust system shall capture the contaminants and odors at their source. To accommodate a use such as a manicurist within the mall, it was proposed by the Mechanical Board to at least define a location of not higher than ten feet above the floor to exhaust certain contaminants or odors etc.*

**504.6.1 Maximum length.** *This was previously placed into the Mechanical Ordinance because the International Residential Code (IRC) allowed the utilization of booster fans to increase the allowable length of exhaust ducts serving clothes dryers. The IRC eliminated booster fans and subsequent extensions because of the statistics showing that such booster fans are a source of*

fires. The allowable length of clothes dryer's exhaust ducts must meet the provisions of the Mechanical Code of the appliance's manufacturer's installation instructions.

**506.3.6 Grease duct clearances; 507.9 Clearances for Type I hood.** Because data shows that the continual heat associated with a grease hood and duct system can degrade the capability of gypsum board to maintain a fire-resistive construction, it has been decided to eliminate the reduced clearance to combustible construction, especially on new construction. Provisions have been added to allow the use of the reduced clearance only where a hood has been replaced in existing combustible construction.

**507.1 General.** Whenever the equipment under a Type I or II hood operates, the exhaust system shall also be operating according to the national code change. Therefore, an interlock between the cooking appliances and the exhaust equipment would be required. It was determined by the Board to eliminate the requirement by local amendment.

**512 Subslab soil exhaust systems.** Subslab soil exhaust systems have been proposed to be reinserted back into the code to attempt to regulate those instances when a radon exhaust contractor would not conform to exhaust termination requirements.

**603.4 Metallic ducts.** Because the Board previously approved "Ductmate Standards," this is included as an option to the SMACNA HVAC Duct Construction Standards.

**606.4.1 Supervision.** Carries over the required remote test/indicator for a smoke detector required for shutdown where the smoker detector is not readily accessible.

**101.1 Title; 101.2 Scope; 103.2 Appointment; 103.4 Liability; 106.1 When required; 106.5.1 Work commencing before permit issuance; 106.5.2 Fee schedule; 106.5.3 Fee refunds; 107.1 Required inspections and testing; 108.3 Prosecution of violation; 108.4 Violation penalties; 108.5 Stop work orders; SECTION 109 (IFGC) MEANS OF APPEAL (IFGC).** All of the above-referenced administrative provisions are a carryover and mirror the same administrative amendments found in the IMC.

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**304.6 Outdoor combustion air. [M] 306.3.1 Electrical requirements, [M] 306.4.1 Electrical requirements, [M] 306.5 Appliances on roofs or elevated structures, 503.4.1 Plastic piping. [IFGC].** These are intended to be put into the IFGC to be consistent with IMC for the same provision.

**Sec. 11-35. License required.** This inserts the requirement for a licensed master mechanic which is required for a mechanical firm to have a "Mechanical Contractor's" license.

**Sec. 11-36.** The grandfathering provision for existing fireplace contractors is eliminated as was the case after a new code cycle occurred for HVAC contractors; and later, refrigeration contractors.

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**Board Recommendations:** The Sioux Falls Mechanical Board of Appeals and Examiners reviewed and unanimously approved the proposal to adopt the 2006 International Mechanical

Code, the 2006 International Fuel Gas Code, Part V-Mechanical of the 2006 International Residential Code and amendments thereto on December 13, 2006.

The changes to the national model codes and the local amendments were also presented to the local chapter of the American Society of Heating, Refrigeration, Air Conditioning Engineers (ASHRAE) Association and the Sioux Falls Heating, Ventilation and Air Conditioners Association.

**Code Sections that May be Affected by This Change:** The International Mechanical Code and International Fuel Gas Code is a companion code to the International Building Code referenced in Sections 11-17 and 11-20; to the International Residential Code referenced in Sections 11-1 and 11-2; and the International Property Maintenance Code referenced in Sections 11-75 and 11-76; References to the International Electrical Code and the International Plumbing Code have been modified to the 2005 National Electrical Code and the 2003 Uniform Plumbing Code respectively.

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Attachments:

- Copy:  Mayor  
 Council member Gerald Beninga  
 Council member Vernon Brown  
 Council member J. Pat Costello  
 Council member Bob Jamison  
 Council member Kevin  
Kavanaugh  
 Council member De Knudson  
 Council member Bob Litz  
 Council member Kermit Staggers  
 City Attorney  
 Planning Director  
 City Clerk

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