

Ordinance No. 121523

Council Bill No. 114935

The City of Seattle  
Council Bill/Ordinance

An ordinance relating to Building and Construction Codes: amending Chapter 22.400 of the Seattle Municipal Code, the Seattle Mechanical Code; adopting Chapters 2 through 9, Chapter 11, and Chapters 13 through 15 of the 2003 International Mechanical Code; amending Chapter 2, Definitions; Chapter 3, General Regulations; Chapter 4, Ventilation; Chapter 5, Exhaust Systems; Chapter 6, Duct Systems; Chapter 8, Chimneys and Vents; Chapter 9, Specific Appliances, Fireplaces and Solid Fuel Burning Equipment; Chapter 11, Refrigeration; and Chapter 15, Referenced Standards; adding a new Chapter 1 related to administration, permitting and enforcement; and repealing the 1997 Seattle Mechanical Code.

7-6-04 Pass  
CEACO

CF No. ✓306758

Date Introduced:	<u>JUN 21 2004</u>	
Date 1st Referred:	To: (committee)	<u>Urban Development &amp; Planning</u>
Date Re - Referred:	To: (committee)	
Date Re - Referred:	To: (committee)	
Date of Final Passage:	Full Council Vote:	
<u>7-6-04</u>	<u>8-0</u>	
Date Presented to Mayor:	Date Approved:	
<u>7-7-04</u>	<u>7-11-04</u>	
Date Returned to City Clerk:	Date Published:	T.O. <input type="checkbox"/> F.T. <input checked="" type="checkbox"/>
<u>7-11-04</u>	<u>119</u>	
Date Vetoed by Mayor:	Date Veto Published:	
Date Passed Over Veto:	Veto Sustained:	

This file is complete and ready for review

*Law Department*

Law Dept. Review







1 ventilating, cooling, refrigeration systems, incinerators or other miscellaneous heat-producing  
2 appliances within the City. The design and testing of equipment regulated by this code shall be  
3 subject to the approval of the code official.

4  
5 **Exceptions:**

- 6
- 7 1. Detached one- and two-family dwellings and multiple single-family dwellings (town  
8 houses) not more than three stories above grade plane in height with a separate  
9 means of egress and their accessory structures shall comply with the *International*  
10 *Residential Code*.
  - 11
  - 12 2. The standards for liquefied petroleum gas installations shall be the 2001 edition of  
13 NFPA 58 (Liquefied Petroleum Gas Code) as amended and the 2002 edition of ANSI  
14 Z223.1/NFPA 54 (National Fuel Gas Code).
  - 15

16 **103.2 Alterations.** Additions, alterations, repairs and replacement of equipment or systems shall  
17 comply with the provisions for new equipment and systems except as otherwise provided in  
18 Section 104 of this code.

19

20 **103.3 Most Restrictive.** Where, in any specific case, different sections of this code specify  
21 different materials, methods of construction or other requirements, the most restrictive shall  
22 govern. Where there is a conflict between a general requirement and a specific requirement, the  
23 specific requirement shall be applicable.



1 **W] 103.4 Conflict with Ventilation Code.** In the case of conflict between the ventilation  
2 requirements of this code and the ventilation requirements of Washington Administrative Code  
3 Chapter 51-13 the Washington State Ventilation and Indoor Air Quality Code (VIAQ), the  
4 provisions of the VIAQ shall govern.

5  
6 **103.5 Referenced codes and standards.** The codes and standards referenced in this code shall  
7 be considered part of the requirements of this code to the prescribed extent of each such  
8 reference. Where differences occur between provisions of this code and referenced codes and  
9 standards, the provisions of this code shall apply.

10  
11 **Exception:** Where enforcement of a code provision would violate the conditions of the  
12 listing of the equipment or appliance, the conditions of the listing and manufacturer's  
13 instructions shall apply.

14  
15 **103.6 Appendices.** Provisions in the appendices shall not apply unless specifically referenced in  
16 the adopting ordinance.

17  
18 **103.7 Metric units.** Wherever in this ordinance there is a conflict between metric units of  
19 measurement and English units, the English units shall govern.

20  
21 **SECTION 104**

22 **APPLICATION TO EXISTING MECHANICAL SYSTEMS**

23  
24 **104.1 Additions, Alterations or Repairs.** Additions, alterations, renovations or repairs may be  
25 made to any mechanical system without requiring the existing mechanical system to comply  
26



1 with all the requirements of this code, provided the addition, alteration, renovation or repair  
2 conforms to that required for a new mechanical system. Additions, alterations, renovations or  
3 repairs shall not cause an existing system to become unsafe, unhealthy or overloaded.

4  
5 Minor additions, alterations, renovations, and repairs to existing mechanical systems may be  
6 installed in accordance with the law in effect at the time the original installation was made,  
7 when approved by the code official.

8  
9 **104.2 Existing Installations.** Mechanical systems lawfully in existence at the time of the  
10 adoption of this code may have their use, maintenance or repair, conversion of fuel, or  
11 component replacement continued if the use, maintenance, repair, conversion of fuel, or  
12 component replacement is in accordance with the basic original design and location, and no  
13 hazard to life, health or property has been created by such mechanical system.

14  
15 **104.3 Changes in Building Occupancy.** Mechanical systems which are a part of any building  
16 or structure undergoing a change in use or occupancy, as defined in the Building Code, shall  
17 comply with all requirements of this code which may be applicable to the new use or occupancy.

18  
19 **104.4 Maintenance.** All mechanical systems, materials and appurtenances, both existing and  
20 new, and all parts thereof shall be maintained in proper operating condition in accordance with  
21 the original design and in a safe and hazard-free condition. All devices or safeguards which are  
22 required by this code shall be maintained in conformance with the code edition under which  
23 installed. The owner or the owner's designated agent shall be responsible for maintenance of  
24 mechanical systems and equipment. To determine compliance with this subsection, the code  
25 official may cause a mechanical system or equipment to be reinspected.



1  
2 The Fire Chief and the code official shall each have authority to obtain compliance with the  
3 requirements of this subsection.

4  
5 **Exception:** The code official may modify the requirements of this section where all or a  
6 portion of the building is unoccupied.

7  
8 **104.5 Moved Buildings.** Building or structures moved into or within the City shall comply with  
9 standards adopted by the code official. No building shall be moved into or within the City  
10 unless, prior to moving, the code official has inspected the building for compliance with this  
11 code and the permit holder has agreed to correct all deficiencies found and has been issued a  
12 building permit for the work. A bond or cash deposit in an amount sufficient to abate or  
13 demolish the building shall be posted prior to issuance of a permit. See Section 116 for  
14 information required on plans. Any moved building that is not in complete compliance with  
15 standards for moved buildings within eighteen months from the date of permit issuance and is  
16 found to be a public nuisance may be abated.

17  
18 **104.6 Historic Buildings and Structures.** The code official may modify the specific  
19 requirements of this code as it applies to buildings and structures designated as landmarks of  
20 historical or cultural importance and require in lieu thereof alternate requirements which, in the  
21 opinion of the code official, will result in a reasonable degree of safety to the public and the  
22 occupants of those buildings.

23  
24 A historic building or structure is one which has been designated for preservation by the City  
25 Landmarks Preservation Board or the State of Washington, has been listed, or has been  
26



1 determined eligible to be listed, in the National Register of Historic Places, has been officially  
2 nominated for such status, or is a structure contributing to the character of a designated  
3 landmark or special review district.

## SECTION 105

### ALTERNATE MATERIALS AND METHODS OF CONSTRUCTION

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7  
8 This code does not prevent the use of any material, design or method of construction not  
9 specifically allowed or prohibited by this code, provided the alternate has been approved and its  
10 use authorized by the code official.

11  
12 The code official may approve an alternate, provided he/she finds that the proposed alternate  
13 complies with the provisions of this code and that the alternate, when considered together with  
14 other safety features of the building or other relevant circumstances, will provide at least an  
15 equivalent level of strength, effectiveness, fire resistance, durability, safety and sanitation.

16  
17 The code official may require that sufficient evidence or proof be submitted to reasonably  
18 substantiate any claims regarding the use or suitability of the alternate. The code official may,  
19 but is not required to, record the approval of modifications and any relevant information in the  
20 files of the code official or on the approved permit plans.

## SECTION 106

### MODIFICATIONS



1 The code official may approve modifications for individual cases, provided the code official  
2 finds: (1) there are practical difficulties involved in carrying out the provisions of this code; (2)  
3 the modification is in conformity with the intent and purpose of this code; and (3) the  
4 modification will provide a reasonable level of fire protection and structural integrity when  
5 considered together with other safety features of the building or other relevant circumstances.  
6 The code official may, but is not required to, record the approval of modifications and any  
7 relevant information in the files of the code official or on the approved permit plans.  
8

## 9 SECTION 107

### 10 TESTS

11  
12 Whenever there is insufficient evidence of compliance with the provisions of this code, or  
13 evidence that any material or method of construction does not conform to the requirements of  
14 this code, the code official may require tests as proof of compliance to be made at no expense to  
15 the City.  
16

17 Test methods shall be as specified in this code or by other recognized test standards. If there  
18 are no recognized and accepted test methods for the proposed alternate, the code official shall  
19 determine the test procedures.  
20

21 All tests shall be made by an approved agency. Reports of such tests shall be retained by the  
22 code official.  
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## 24 SECTION 108

### 25 JURISDICTION AND POWERS AND DUTIES OF CODE OFFICIAL

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**108.1 Jurisdiction.** The Department of Planning and Development is the code enforcement agency in the City of Seattle for this code. The Director of the Department of Planning and Development is the code official.

**108.2. General.** The code official is authorized and directed to enforce this code, except that enforcement authority as provided in this code to the code official is also vested in the Director of Public Health and the Fire Chief. Compliance with the requirements of this code is the obligation of the owner of the building, structure or premises, the duly authorized agent of the owner, or other person responsible for the condition or work, and not of the City or any of its officers or employees.

**108.3 Deputies.** The code official may appoint such officers and inspectors and other employees as shall be authorized from time to time. The code official may deputize such inspectors or employees as may be necessary to carry out the functions of the code official.

**108.4 Right of Entry.** With the consent of the owner or occupier of a building or premises, or pursuant to a lawfully issued warrant, the code official may enter a building or premises at any reasonable time to perform the duties imposed by this code.

**108.5 Stop Orders.** Whenever any work is being done contrary to the provisions of this code, or in the event of dangerous or unsafe conditions related to construction or demolition, the code official may order the affected work stopped by a notice describing the violation in writing, posted on the premises or served on any person responsible for the condition or work. It is



1 unlawful for any person to engage in or to cause such work to be done until authorization from  
2 the code official is received.

3  
4 **108.6 Authority to Disconnect Utilities in Emergencies.** The code official has the authority to  
5 disconnect fuel-gas utility service or energy supplies to a building, structure, premises or  
6 equipment regulated by this code in case of emergency where necessary to eliminate an  
7 immediate hazard to life or property. The code official may enter any building or premises to  
8 disconnect utility service. The code official shall, whenever possible, notify the serving utility,  
9 the owner and occupant of the building, structure or premises of the decision to disconnect prior  
10 to taking such action, and shall notify such serving utility, owner and occupant of the building,  
11 structure or premises in writing of such disconnection immediately thereafter.

12  
13 **108.7 Authority to Condemn Equipment.** Whenever the code official ascertains that any  
14 equipment, or portion thereof, regulated by this code has become hazardous to life, health or  
15 property, the code official shall order in writing that such equipment may either be  
16 disconnected, removed or restored to a safe or sanitary condition, as appropriate. The written  
17 notice itself shall fix a time limit for compliance with such order. It is unlawful for any person  
18 to use or maintain defective equipment after receiving such notice.

19  
20 When such equipment or installation is to be disconnected, the code official shall give  
21 written notice of such disconnection and causes therefore shall be given within 24 hours to the  
22 serving utility, the owner and occupant of the building, structure or premises. When any  
23 equipment is maintained in violation of this code, and in violation of a notice issued pursuant to  
24 the provisions of this section, the code official shall institute any appropriate action to prevent,  
25 restrain, correct or abate the violation.



1  
2 **108.8 Connection after Order to Disconnect.** No person shall make connections from any  
3 energy, fuel or power supply nor supply energy or fuel to any equipment regulated by this code  
4 which has been disconnected or ordered to be disconnected by the code official, or the use of  
5 which has been ordered to be discontinued by the code official until the code official authorizes  
6 the reconnection and use of such equipment.

7  
8 **108.9 Liability.** Nothing contained in this code is intended to be nor shall be construed to create  
9 or form the basis for any liability on the part of the City, or its officers, employees or agents, for  
10 any injury or damage resulting from the failure of equipment to conform to the provisions of this  
11 code, or by reason or in consequence of any inspection, notice, order, certificate, permission or  
12 approval authorized or issued or done in connection with the implementation or enforcement of  
13 this code, or by reason of any action or inaction on the part of the City related in any manner to  
14 the enforcement of this code by its officers, employees or agents.

15  
16 This code shall not be construed to relieve from or lessen the responsibility of any person  
17 owning, operating or controlling any building or structure for any damages to persons or  
18 property caused by defects, nor shall the Department of Planning and Development or the City  
19 of Seattle be held as assuming any such liability by reason of the inspections authorized by this  
20 code or any permits or certificates issued under this code.

21  
22 **108.10 Cooperation of Other Officials and Officers.** The code official may request, and shall  
23 receive so far as is required in the discharge of the code official's duties, the assistance and  
24 cooperation of other officials of the City of Seattle.





1 appeal shall be taken into account by the Chair when selecting members to hear an appeal. The  
2 results of this appeal shall be advisory only.

3  
4 **SECTION 111**  
5 **VIOLATIONS AND PENALTIES**  
6

7 **111.1 Violations.** It is a violation of this code for any person, firm or corporation to install,  
8 erect, construct, enlarge, alter, repair, replace, remodel, move, improve, remove, convert or  
9 demolish, equip, occupy, use or maintain any mechanical systems or equipment or cause or  
10 permit the same to be done in the City, contrary to or in violation of any of the provisions of this  
11 code.

12  
13 It is a violation of this code for any person, firm or corporation to use any material or to  
14 install any device, appliance or equipment which does not comply with the applicable standards  
15 of this code or which has not been approved by the code official.

16  
17 **111.2 Notice of Violation.** If, after investigation, the code official determines that standards or  
18 requirements of this code have been violated, the code official may serve a notice of violation  
19 upon the owner or other person responsible for the action or condition. The notice of violation  
20 shall state the standards or requirements violated, shall state what corrective action, if any, is  
21 necessary to comply with the standards or requirements, and shall set a reasonable time for  
22 compliance. The notice shall be served upon the owner or other responsible person by personal  
23 service, registered mail or certified mail with return receipt requested, addressed to the last  
24 known address of such person. In addition, a copy of the notice may be posted at a conspicuous  
25 place on the property. The notice of violation shall be considered an order of the code official.  
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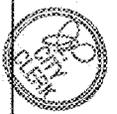


1 Nothing in this subsection shall be deemed to limit or preclude any action or proceeding  
2 pursuant to Sections 108 or 109 of this code, and nothing in this section shall be deemed to  
3 obligate or require the code official to issue a notice of violation prior to the imposition of civil  
4 or criminal penalties in this section.

5  
6 **111.3 Civil Penalties.** Any person, firm or corporation failing to comply with the provisions of  
7 this code shall be subject to a cumulative civil penalty in an amount not to exceed \$500 per day  
8 for each violation from the date the violation occurs or begins until compliance is achieved. In  
9 cases where the code official has issued a notice of violation, the violation will be deemed to  
10 begin, for purposes of determining the number of days of violation, on the date compliance is  
11 required by the notice of violation.

12  
13 **111.4 Criminal Penalty.** Anyone who violates or fails to comply with any order issued by the  
14 code official pursuant to this code or who removes, mutilates, destroys or conceals a notice  
15 issued or posted by the code official shall, upon conviction thereof, be punished by a fine of not  
16 more than \$1,000 or by imprisonment for not more than 360 days, or by both such fines and  
17 imprisonment. Each day's violation or failure to comply shall constitute a separate offense.

18  
19 Anyone violating or failing to comply with any of the provisions of this code and who  
20 within the past five years has a judgment against them pursuant to Section 111.3, shall upon  
21 conviction thereof, be punished by a fine in a sum not to exceed \$500 or imprisonment for not  
22 more than 180 days, or by both such fine and imprisonment. Each day's violation or failure to  
23 comply shall constitute a separate offense.



1 **111.5 Additional Relief.** The code official may seek legal or equitable relief to enjoin any acts  
2 or practices and abate any condition which constitutes a violation of this code when civil or  
3 criminal penalties are inadequate to effect compliance.

4  
5 **SECTION 112**  
6 **NOTICES**  
7

8 It is unlawful for any person to remove, mutilate, destroy or conceal any notice issued or posted  
9 by the code official pursuant to the provisions of this code or any notice issued or posted by the  
10 code official in response to a natural disaster or other emergency.

11  
12 The code official may record a copy of any order or notice with the Department of Records  
13 and Elections of King County.

14  
15 The code official may record with the Department of Records and Elections of King County  
16 a notification that a permit has expired without a final inspection after reasonable efforts have  
17 been made to provide a final inspection.

18  
19 **SECTION 113**  
20 **RULES OF THE CODE OFFICIAL**  
21

22 **113.1 Authority.** The code official has the power to render interpretations of this code and to  
23 adopt and enforce rules and regulations supplemental to this code as may be deemed necessary  
24 in order to clarify the application of the provisions of this code. Such interpretations, rules and  
25



1 regulations shall be in conformity with the intent and purpose of this code. The code official is  
2 authorized to promulgate, adopt and issue the following rules:

3  
4 “Building Construction Standards” to promulgate standards which are acceptable as a  
5 method or as an alternative design for meeting code required performance criteria, to recognize  
6 new technical data affecting code requirements, and to eliminate conflicts among code  
7 requirements.

8  
9 “Code Interpretations” to interpret and clarify conditions or language expressed in this code.

10 Any other rule necessary for the administration of the purpose and intent of this code.  
11

12 **113.2 Procedure for Adoption of Rules.** The code official shall promulgate, adopt and issue  
13 rules according to the procedures as specified in Chapter 3.02 of the Administrative Code,  
14 Seattle Municipal Code.

15  
16 **SECTION 114**

17 **CONSTRUCTION CODES ADVISORY BOARD**

18  
19 A committee of the Construction Codes Advisory Board may examine proposed administrative  
20 rules, appeals and amendments relating to this code and related provisions of other codes and  
21 make recommendations to the code official and to the City Council for changes in this code.

22 The committee will be called on as-needed by the Construction Codes Advisory Board.  
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1       **115.2.2 Refrigeration.** A mechanical permit shall not be required for the following  
2       refrigerant equipment:

- 3
- 4           1. Any self-contained refrigerating equipment for which an operating permit is not  
5           required.
  - 6           2. Any self-contained refrigeration system which does not exceed three horsepower  
7           rating.
- 8

9       Exemption from the permit requirements of this code shall not be deemed to grant  
10      authorization for any work to be done in any manner in violation of the provisions of this code  
11      or any other laws or ordinances of the City.

12

13      **115.3 Flood Hazard Areas.** In addition to the permit required by this section, all work to be  
14      performed in areas of special flood hazard, as identified in the report entitled "Flood Insurance  
15      Study for King County, Washington and Incorporated Areas" and the accompanying Flood  
16      Insurance Rate Maps and filed in C.F. 295948, is subject to additional standards and  
17      requirements, including floodplain development approval or a Floodplain Development License,  
18      as set forth in Chapter 25.06, the Seattle Floodplain Development Ordinance.

19

20      **115.4 Emergency Repairs.** In the case of an emergency, the installation, alteration or repair of  
21      any refrigeration system or equipment may be made without a permit, provided that application  
22      for a permit shall be made within twenty-four hours or within one working day from the time  
23      when the emergency work was started.

24

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1  
2 6. Be signed by the owner of the property or building, or his/her authorized agent, who  
3 may be required to submit evidence to indicate such authority.

4  
5 7. Give such other data and information as may be required by the code official.

6  
7 8. Indicate the name of the owner and contractor and the name, address and phone  
8 number of a contact person.

9  
10 **116.2 Plans and Specifications.** Plans, engineering calculations, diagrams and other data shall  
11 be submitted in one or more sets with each application for a permit. The code official may  
12 require plans, computations and specifications to be prepared and designed by an engineer or  
13 architect licensed by the state to practice as such. Projects having a total mechanical valuation  
14 of \$30,000 or larger shall require a mechanical engineering stamp and signature on each sheet.

15  
16 **Exception:** The code official may waive the requirements for a mechanical engineer's stamp  
17 or submission of plans, calculations or other data if the code official finds that the nature of  
18 the work applied for is such that the reviewing of plans is not necessary to obtain  
19 compliance with this code.

20  
21 **116.3 Information on Plans and Specifications.**

22  
23 **116.3.1 Clarity of plans.** Plans shall be drawn to a clearly indicated and commonly  
24 accepted scale upon substantial paper such as blueprint quality or standard drafting paper.  
25 Tissue paper, posterboard or cardboard will not be accepted. The plans shall be of  
26

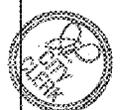


1 microfilm quality and limited to a minimum size of 18 inches by 18 inches and a maximum  
2 size of 41 inches by 54 inches.

3  
4 **116.3.2 Fire-resistive notes.** The code official may require that plans for buildings more  
5 than two stories in height of other than Group R, Division 3 and Group U Occupancies  
6 indicate how required structural and fire-resistive integrity will be maintained where a  
7 penetration will be made for electrical, mechanical, plumbing and communication conduits,  
8 pipes and similar systems.

9  
10 **116.3.3 Information required on plans.** The plans or specifications shall show the  
11 following:

- 12  
13 1. Layout for each floor with dimensions of all working spaces and a legend of all  
14 symbols used.
- 15  
16 2. Location, size and material of all piping.
- 17  
18 3. Location, size and materials of all air ducts, air inlets and air outlets.
- 19  
20 4. Location of all fans, warm-air furnaces, boilers, absorption units, refrigerant  
21 compressors and condensers and the weight of all pieces of such equipment weighing  
22 200 pounds or more.
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1  
2 **117.1.1 General.** The application, plans, specifications, and other data filed by an applicant  
3 for permit shall be reviewed by the code official. Such plans may be reviewed by other  
4 departments of the City to check compliance with the laws and ordinances under their  
5 jurisdiction. If the code official finds that the work as described in an application for a  
6 permit and the plans, specifications and other data filed therewith substantially conforms to  
7 the requirements of this code and other pertinent laws and ordinances and that the fees  
8 specified in the Fee Subtitle have been paid, the code official shall issue a permit to the  
9 applicant who becomes the permit holder or authorized agent.

10  
11 **EXCEPTION:** The code official may issue a permit for the construction of part of a  
12 building or structure before complete plans for the whole building or structure have been  
13 submitted or approved, provided that the proposed project complies with the State  
14 Environmental Policy Act as adopted by the City (Chapter 25.05 Seattle Municipal  
15 Code) and as amended and the Land Use Code as amended; and provided further that  
16 adequate information and plans have been filed and checked to assure compliance with  
17 all pertinent requirements of this and other pertinent codes. The holder of such a permit  
18 shall proceed at his/her own risk without assurance that the permit for the entire building  
19 or structure will be granted.

20  
21 **117.1.2 Compliance with approved plans and permit.** When the code official issues a  
22 permit, the code official shall endorse the permit in writing and endorse in writing or stamp  
23 the plans "APPROVED." Such approved plans and permit shall not be changed, modified  
24 or altered without authorization from the code official, and all work shall be done in  
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1 accordance with the approved plans and permit except as the code official may require  
2 during field inspection to correct errors or omissions.

3  
4 **117.1.3 Amendments to the permit.** When substitutions or changes are made during  
5 construction, approval shall be secured prior to execution, however, the building inspector  
6 may approve minor modifications for work not reducing the structural strength and fire and  
7 life safety of the structure. The building inspector shall determine if it is necessary to revise  
8 the approved plans. These substitutions and changes shall conform to the requirements of  
9 this code and other pertinent laws and ordinances. Minor substitutions or changes shall be  
10 documented, but shall not incur additional fees if these substitutions and/or changes do not  
11 (1) add to the general scope of work; (2) change the basic design concept; (3) involve major  
12 relocation of equipment, ducts, or pipes; (4) substantially alter approved equipment size; (5)  
13 require extensive re-review of the plans and specifications.

14  
15 All other changes, substitutions, or clarifications shall be shown on two sets of plans which  
16 shall be submitted to and approved by the code official prior to execution or occupancy. These  
17 submittals shall be accompanied by appropriate fees as specified in the Fee Subtitle prior to  
18 issuance of the Certificate of Occupancy.

19  
20 **117.1.4 Cancellation of permit application.** Applications may be cancelled if no permit is  
21 issued by the earlier of the following: (1) within twelve months following the date of  
22 application; or (2) within sixty days from the date of written notice of approval for issuance.  
23 Plans and other data submitted for review may thereafter be returned to the applicant or  
24 destroyed by the building official.



1           The building official shall notify the applicant in writing at least thirty days before the  
2 application is cancelled. The notice shall specify a date by which a request for extension  
3 must be submitted. The date shall be at least two weeks prior to the date on which the  
4 application will be cancelled.

5  
6           At the discretion of the building official, applications for projects that require more than  
7 twelve months to complete may be extended for a period that provides reasonable time to  
8 complete the work, but in no case longer than twenty-four months from the date of  
9 application. No application shall be extended more than once. In order to renew action on  
10 an application after cancellation, the applicant shall submit a new application and pay a new  
11 fee.

12  
13           Notwithstanding other provisions of this code, applications may be extended where  
14 issuance of the permit is delayed by litigation, preparation of environmental impact  
15 statements, appeals, strikes or other causes related to the application that are beyond the  
16 applicant's control, or while the applicant is making progress toward issuance of a master  
17 use permit.

18  
19           See the Fee Subtitle for fee refunds.

20  
21 **117.2 Retention of Plans.** One set of approved plans, which may be on microfilm, shall be  
22 retained by the code official. One set of approved plans shall be returned to the applicant, and  
23 shall be kept at the site of the building or work at all times during which the work authorized is  
24 in progress for use by the inspection personnel.



1 **117.3 Validity of permit.** The issuance or granting of a permit or approval of plans shall not be  
2 construed to be a permit for, or an approval of, any violation of any of the provisions of this  
3 code or other pertinent laws and ordinances. No permit presuming to give authority to violate or  
4 cancel the provisions of this code shall be valid, except insofar as the work or use which it  
5 authorizes is lawful.

6  
7 The issuance of a permit based upon plans shall not prevent the code official from thereafter  
8 requiring the correction of errors in said plans, or from preventing building operations being  
9 carried on thereunder when in violation of this code or of other pertinent laws and ordinances of  
10 the City.

11  
12 The issuance of a mechanical permit shall not prevent the code official from requiring  
13 correction of conditions found to be in violation of this code or other pertinent laws of the City,  
14 nor shall the period of time for which any such permit is issued be construed to extend or  
15 otherwise affect any period of time for compliance specified in any notice or order issued by the  
16 code official or other administrative authority requiring the correction of any such conditions.

17  
18 **117.4 Permit Expiration and Renewal.**

19  
20 **117.4.1 Expiration.** Permits and renewed permits shall expire eighteen months from the  
21 date of issuance.

22  
23 **Exceptions:**



1           1. Initial permits for major construction projects that require more than eighteen  
2           months to complete, according to a construction schedule submitted by the  
3           applicant, may be issued for a period that provides reasonable time to complete  
4           the work but in no case longer than three years.

5  
6           2. Permits which expire in less than eighteen months may be issued where the code  
7           official determines a shorter period is appropriate.

8  
9           **117.4.2 Renewal.** Permits may be renewed and renewed permits may be further renewed by  
10          the code official, provided the following conditions are met:

11  
12          1. Application for renewal shall be made within the thirty-day period immediately  
13          preceding the date of expiration of the permit;

14  
15          2. The work authorized by the permit has been started and is progressing at a rate  
16          approved by the code official. Progress justifying renewal of a permit, except as  
17          specified by Item 3, shall include, but is not limited to, requesting of a required  
18          inspection, the arranging of financing, selection of contractors and subcontractors,  
19          securing other necessary permits and licenses, site preparation such as demolition,  
20          clearing and excavation, soils investigation and work done to overcome unusual  
21          construction difficulties;

22  
23          3. If an application for renewal is made either more than eighteen months after the date  
24          of mandatory compliance with a new or revised edition of this code or after the  
25  
26  
27  
28



1 effective date of an amendment to applicable provisions of the Land Use Code, the  
2 permit shall not be renewed unless:

- 3
- 4 (i) The code official determines that the permit complies, or is modified to comply  
5 with the code or codes in effect on the date of application renewal; or  
6
- 7 (ii) The work authorized by the permit is substantially underway and progressing at  
8 a rate approved by the code official. Progress justifying renewal of the permit  
9 shall be evidenced by notification by the permit holder that a construction step  
10 is ready for an inspection required by Section 119.4 of this code.  
11

12 Permits may also be renewed where commencement or completion of the work authorized  
13 by the permit is delayed by litigation, appeals, strikes or other causes related to the work  
14 authorized by the permit, beyond the permit holder's control.  
15

16 **117.4.3 Re-establishment.** A new permit shall be required to complete work where a permit  
17 has expired and was not renewed.  
18

19 **Exception:** A permit which has been expired for less than one year may be reestablished  
20 upon approval of the code official provided it complies with Items 2 and 3 of Section  
21 117.4.2.  
22

23 **117.5 Suspension or Revocation.** The code official may, by written order, suspend or revoke a  
24 permit issued under the provisions of this code whenever the permit is issued in error or on the  
25  
26  
27  
28



1 basis of incorrect information supplied, or in violation of any ordinance or regulation or any  
2 provisions of this code.

3  
4 **SECTION 118**

5 **FEES**

6  
7 A fee for each mechanical permit and for other activities related to the enforcement of this code  
8 shall be paid as set forth in the Fee Subtitle.

9  
10 **SECTION 119**

11 **INSPECTIONS**

12  
13 **119.1 General.** All construction or work for which a permit is required is subject to inspection  
14 by the code official, and certain types of construction shall have special inspections by registered  
15 special inspectors as specified in Section 1704 of the Seattle Building Code.

16  
17 **119.2 Inspection Requests.** It is the duty of the owner of the property or the owner's authorized  
18 agent, or the person designated by the owner/agent to do the work authorized by a permit, to  
19 notify the code official that work requiring inspection as specified in this section and Section  
20 120 is ready for inspection.

21  
22 It is the duty of the person requesting any inspections required by this code to provide access  
23 to and means for proper inspection of such work. It is the duty of the permit holder to cause the  
24 work to be accessible and exposed for inspection purposes until approved by the code official.



1 Neither the code official nor the City shall be liable for expense entailed in the required removal  
2 or replacement of any material to allow inspection.

3  
4 **119.3 Inspection Record.** Work requiring a mechanical permit shall not be commenced until  
5 the permit holder or agent has posted an inspection record in a conspicuous place on the  
6 premises and in a position which allows the code official to conveniently make the required  
7 entries thereon regarding inspection of the work. This record shall be maintained in such a  
8 position by the permit holder until final approval has been granted by the code official.

9  
10 **119.4 Approvals Required.** No work shall be done on any part of the building or structure  
11 beyond the point indicated in each successive inspection without first obtaining the written  
12 approval of the code official. Such written approval shall be given only after an inspection has  
13 been made of each successive step in the construction as indicated by each of the inspections  
14 required in this section.

15  
16 All mechanical systems for which a permit is required by this code shall be inspected by the  
17 code official. No portion of any mechanical system intended to be concealed shall be concealed  
18 until inspected and approved. Neither the code official nor the City shall be liable for expense  
19 entailed in the removal or replacement of material required to permit inspection. When the  
20 installation of a mechanical system is complete, an additional and final inspection shall be  
21 made.

22  
23 Approval as a result of an inspection shall not be construed to be an approval of a violation  
24 of the provisions of this code or of other pertinent laws and ordinances of the City. Inspections  
25  
26  
27  
28



1 presuming to give authority to violate or cancel the provisions of this code or of other pertinent  
2 laws and ordinances of the City shall not be valid.

3  
4 **119.5 Operation of Mechanical Equipment.** The requirements of this section shall not be  
5 considered to prohibit the operation of any mechanical systems installed to replace existing  
6 equipment or fixtures serving an occupied portion of the building in the event a request for  
7 inspection of such equipment or fixture has been filed with the code official more than 48 hours  
8 after such replacement work is completed, and before any portion of such mechanical system is  
9 concealed by any permanent portion of the building.

10  
11 **119.6 Testing of Equipment and Systems.** Refrigeration equipment regulated by this code  
12 shall be tested and approved as required by Chapter 11 of this code.

13  
14 Fuel-gas piping shall be tested and approved as required by Chapter 13 of this code.

15  
16 **119.7 Other Inspections.** In addition to the called inspections required by this code, the code  
17 official may make or require any other inspections of any mechanical work to ascertain  
18 compliance with the provisions of this code and other laws and ordinances which are enforced  
19 by the code official.

20  
21 Where work for which any permit or approval is required is commenced or performed prior  
22 to making formal application and receiving the code official's permission to proceed, the code  
23 official may make a special investigation inspection before a permit may be issued for such  
24 work. Where a special investigation is made, a special investigation fee may be assessed in  
25 accordance with the Fee Subtitle.



1  
2 **119.8 Reinspections.** The code official may require a reinspection when work for which  
3 inspection is called is not complete, corrections called for are not made, the inspection record is  
4 not properly posted on the work site, the approved plans are not readily available to the  
5 inspector, for failure to provide access on the date for which inspection is requested, or when  
6 deviations from plans which require the approval of the code official have been made without  
7 proper approval.

8  
9 For the purpose of determining compliance with Section 104.4, Maintenance, the code  
10 official or the Fire Chief may cause any structure to be reinspected.

11  
12 The code official may assess a reinspection fee as set forth in the Fee Subtitle for any action  
13 listed above for which reinspection may be required. In instances where reinspection fees have  
14 been assessed, no additional inspection of the work shall be performed until the required fees  
15 have been paid.

16  
17 **SECTION 120**  
18 **CONNECTION APPROVAL**  
19

20 **120.1 Energy Connections.** No person shall make connections from a source of energy fuel to a  
21 mechanical system or equipment regulated by this code and for which a permit is required until  
22 approved by the code official.



1 **120.2 Temporary Connections.** The code official may authorize temporary connection of the  
2 mechanical equipment to the source of energy fuel for the purpose of testing the equipment, or  
3 for use under a temporary certificate of occupancy.

4  
5 **SECTION 121**  
6 **REFRIGERATION LICENSES**

7  
8 No one shall perform any of the services or activities related to refrigeration systems as  
9 regulated by Chapter 11 without a license as required by Chapter 6.82 of the Seattle Municipal  
10 Code, or under the direct supervision of a person, firm, associates or corporation holding a  
11 required license.

12  
13 **SECTION 122**  
14 **OPERATING PERMITS FOR REFRIGERATION SYSTEMS**

15  
16 **122.1** An operating permit issued by the code official shall be required to operate any  
17 refrigeration system meeting any one of the following criteria:

- 18  
19 1. Any system over 50 horsepower, or  
20  
21 2. Any system over 50 tons of refrigerant effect, or  
22  
23 3. Any system which contains over 150 pounds of refrigerant, or  
24  
25  
26  
27  
28



1 4. Any system which includes a refrigerant containing a pressure vessel over six inches in  
2 diameter with a capacity of more than 5 cubic feet and a design working pressure under  
3 250 psig., or

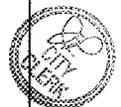
4  
5 5. Any system which includes a refrigerant containing a pressure vessel over six inches in  
6 diameter having a capacity of one and one-half cubic feet and a design working pressure  
7 over 250 psig.

8  
9 **122.2** The operating permit shall not be issued until the system has been inspected and  
10 approved by the code official as to its safe operation and compliance with the provisions of this  
11 code. The permit shall be valid for a period of one year, renewable annually. The permit shall  
12 be displayed in a conspicuous place adjacent to the refrigeration system.

13  
14 Section 4. Subsection 201.3 of the International Mechanical Code, 2003 Edition, is  
15 amended as follows:

16  
17 **201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined  
18 in the *International Building Code*, ((~~ICC~~)) *Seattle Electrical Code*, *International Fire Code*,  
19 *International Fuel Gas Code* or the ((~~International~~)) *Uniform Plumbing Code*, such terms shall  
20 have meanings ascribed to them as in those codes.

21  
22 **Interpretation I201.3:** Unless otherwise amended, whenever an International, National, or  
23 Uniform code is referenced in this code, it shall mean the Seattle edition of that code,  
24 including local amendments.



1 Section 5 Section 202 of the International Mechanical Code, 2003 Edition, is amended  
2 as follows:

3  
4 The following terms and their respective definitions are deleted: automatic boiler, power boiler,  
5 pressure vessels, and steam heating boiler.

6  
7 The following terms and definitions are added and amended:

8  
9 **BOILER.** A closed heating appliance intended to supply hot water or steam for space heating,  
10 processing or power purposes. ~~((Low pressure boilers operate at pressures less than or equal to  
11 15 pounds per square inch (psi) (103 kPa) for steam and 160 psi (1103 kPa) for water. High-  
12 pressure boilers operate at pressures exceeding those pressures.))~~

13  
14 **BOILER CODE.** The Seattle Boiler and Pressure Vessel Code.

15  
16 **CODE.** These regulations, subsequent amendments thereto, or any emergency rule or regulation  
17 that ~~((the administrative authority having jurisdiction))~~ has been lawfully adopted.

18  
19 **CODE OFFICIAL.** ~~The ((officer or other designated authority charged with the administration  
20 and enforcement of this code, ))~~ Director of the Department of Planning and Development or a  
21 duly authorized representative.

22  
23 **CONDITIONED SPACE.** ~~((An area, room or space being heated or cooled by any equipment  
24 or appliance))~~ A cooled space, heated space (fully heated), heated space (semi-heated), or  
25 indirectly conditioned space.



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**CONTAINER (REFRIGERANT).** A cylinder for the transportation of refrigerant.

**CRITICAL PRESSURE, CRITICAL TEMPERATURE AND CRITICAL VOLUME.**

Terms given to the state points of a substance at which liquid and vapor have identical properties. Above the critical pressure or critical temperature there is no line of demarcation between liquid and gaseous phases.

**DAMPER.** A manually or automatically controlled device to regulate draft or the rate of flow of air or combustion gases.

**Volume damper.** A device that, when installed, will restrict, retard or direct the flow of air in a duct, or the products of combustion in a heat-producing appliance, its vent connector, vent or chimney therefrom.

**Backdraft damper.** A damper installed to restrict introduction of unconditioned air from and unconditioned space to a conditioned space.

**Barometric damper.** Any listed device that freely allows the flow of air in one direction, but does not allow conditioned air to escape. All installed combustion air dampers shall meet the installation requirements of the manufacturer.

**Chimney Damper.** A movable valve or plate within the chimney connector for controlling the draft or flow of combustion gases.

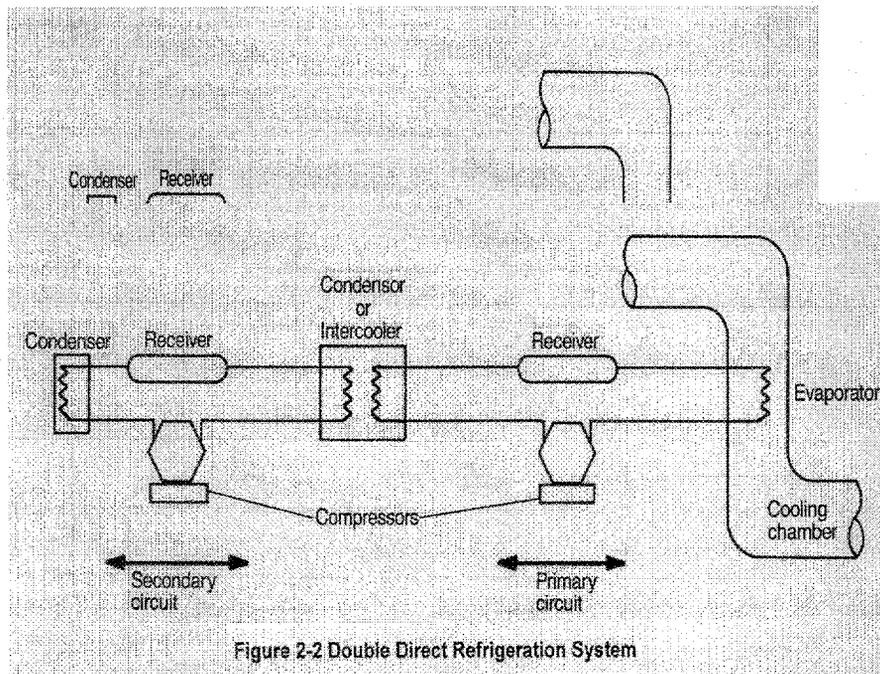


1 **Fire Damper.** See “fire damper”.

2  
3 **Smoke Damper.** See “smoke damper”.

4  
5 **DIRECT REFRIGERATION SYSTEM.** A system in which the evaporator or condenser of  
6 the refrigerating system is in direct contact with the air or other substances to be cooled or  
7 heated. See Figure 2-1.

8  
9 **Double direct refrigeration system.** A system in which an evaporative refrigerant is used  
10 in a secondary circuit to condense or cool a refrigerant in a primary circuit. For the purpose  
11 of this code, each system enclosing a separate body of an evaporative refrigerant shall be  
12 considered as a separate direct system. See Figure 2-2.



1 **DUCT.** A tube or conduit utilized for conveying air. The air passages of self-contained systems  
2 are not to be construed as air ducts.

3  
4 **Environmental air duct.** Ducts used for conveying exhaust air at temperatures not exceeding  
5 250°F (121°C) to or from occupied areas of any occupancy. Examples of environmental air  
6 ducts include, but are not limited to, those used for ventilation for human usage, domestic  
7 kitchen range exhaust, bathroom or restroom exhaust, parking garage exhaust, elevator  
8 exhaust and domestic-type clothes dryer exhaust.

9  
10 **Product-conveying duct.** Ducts used for conveying solid particulates, such as refuse, dust,  
11 fumes and smoke; liquid particulate matter, such as spray residue, mists and fogs; vapors,  
12 such as vapors from flammable or corrosive liquids; noxious and toxic gases; and air at  
13 temperatures exceeding 250°F (121°C). Examples of product-conveying ducts include, but  
14 are not limited to, those that serve a combustion engine, industrial vacuum system, chemical  
15 booth, paint booth, paint enclosure and photo lab exhaust.

16  
17 **ENERGY CODE.** *The Washington State Energy Code with Seattle Amendments.*

18  
19 **ENVIRONMENTAL AIR.** Exhaust air at temperatures not exceeding 250°F (121°C) to or  
20 from occupied areas of any occupancy. Examples of environmental air include air used for  
21 human ventilation, domestic kitchen range exhaust, bathroom or restroom exhaust, parking  
22 garage exhaust, elevator exhaust and Type 1 clothes dryer exhaust.

23  
24 **[B] FIRE DAMPER.** A listed device, installed in ducts and air transfer openings of an air  
25 distribution system or smoke control systems, designed to close automatically upon detection of



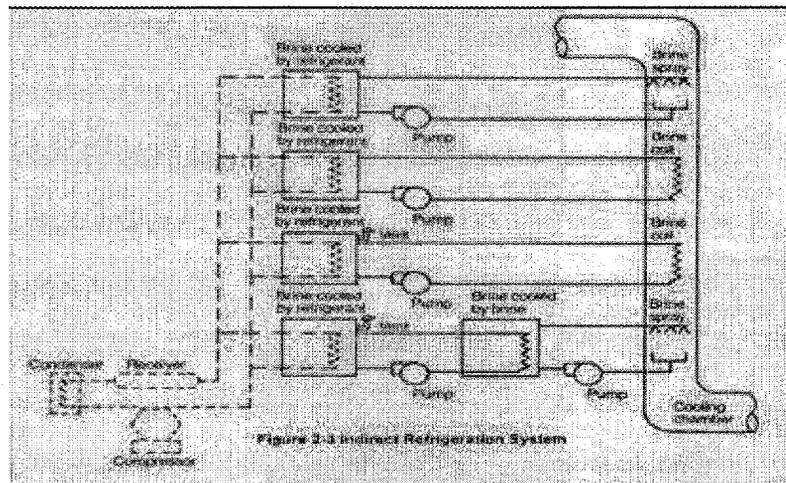
1 heat, to interrupt migratory airflow, and to restrict the passage of flame. Fire dampers are  
2 classified for use in either static systems that will automatically shut down in the event of a fire,  
3 or in a dynamic system that continues to operate during a fire. A dynamic fire damper is tested  
4 and rated for closure under airflow.

5 **[F] GAS ROOM.** A separately ventilated, fully enclosed room in which only compressed gases  
6 and associated equipment and supplies are stored or used.

7  
8 **HOOD.** An air-intake device used to capture by entrapment, impingement, adhesion or similar  
9 means, grease and similar contaminants before they enter a duct system.

10  
11 **Type I.** A kitchen hood for collecting and removing grease vapors and smoke generated  
12 from medium-duty, heavy-duty, extra-heavy-duty, and some light-duty cooking appliances.

13  
14 **Type II.** A general kitchen hood for collecting and removing steam, vapor, heat and odors  
15 generated from some light-duty cooking appliances.



1 **INDIRECT REFRIGERATION SYSTEM.** A system in which a secondary coolant cooled or  
2 heated by the refrigerating system is circulated to the air or other substance to be cooled or  
3 heated. See Figure 2-3. Indirect systems are distinguished by the method of application shown  
4 below:

5  
6 **Closed system.** A system in which a secondary fluid is either cooled or heated by the  
7 refrigerating system and then circulated within a closed circuit in indirect contact with the air  
8 or other substance to be cooled or heated.

9  
10 **Double-indirect open-spray system.** A system in which the secondary substance for an  
11 indirect open-spray system is heated or cooled by an intermediate coolant circulated from a  
12 second enclosure.

13  
14 **Open-spray system.** A system in which a secondary coolant is cooled or heated by the  
15 refrigerating system and then circulated in direct contact with the air or other substance to be  
16 cooled or heated.

17  
18 **Vented closed system.** A system in which a secondary coolant is cooled or heated by the  
19 refrigerating system and then passed through a closed circuit in the air or other substance to  
20 be cooled or heated, except that the evaporator or condenser is placed in an open or  
21 appropriately vented tank.

22  
23 **LIGHT-DUTY COOKING APPLIANCE.** Light-duty cooking appliances include gas and  
24 electric ovens of a maximum 6 kW or 20,000 Btu/h capacity (including standard, bake, roasting,  
25 coffee roasting, revolving, retherm, convection, combination convection/steamer, conveyor,  
26



1 deck or deck-style pizza, and pastry), electric and gas steam-jacketed kettles, electric and gas  
2 compartment steamers (both pressure and atmospheric) and electric and gas cheesemelters.

3  
4 **MEDIUM-DUTY COOKING APPLIANCE.** Medium-duty cooking appliances include  
5 electric discrete element ranges (with or without oven), electric and gas hot-top ranges, electric  
6 and gas griddles, electric and gas double-sided griddles, electric and gas fryers (including open  
7 deep fat fryers, donut fryers, kettle fryers, and pressure fryers), (~~electric and gas pasta cookers,~~  
8 ~~electric and gas conveyor pizza ovens,~~) electric and gas tilting skillets (braising pans) and  
9 electric and gas rotisseries.

10  
11 **SATURATION PRESSURE.** The pressure at which there is a stable coexistence of the vapor  
12 and liquid or the vapor and solid phases of a refrigerant.

13  
14 **SLEEVE.** A factory-built chimney fitting designed to protect combustible materials when it is  
15 necessary to penetrate a combustible wall to connect a chimney.

16  
17 **THIMBLE.** A listed fitting designed to be installed in the opening in a masonry chimney  
18 through which the chimney connector passes.

19  
20 **UNUSUALLY TIGHT CONSTRUCTION.** Construction meeting the following  
21 requirements:

- 22  
23 1. Walls exposed to the outside atmosphere having a continuous water vapor retarder with  
24 a rating of 1 perm ( $57 \text{ ng/s} \cdot \text{m}^2 \cdot \text{Pa}$ ) or less with openings gasketed or sealed;



1 2. Openable windows and doors meeting the air leakage requirements of the *International*  
2 *Energy Conservation Code*, Section 502.1.4; and

3  
4 3. Caulking or sealants are applied to areas, such as joints around window and door frames,  
5 between sole plates and floors, between wall-ceiling joints, between wall panels, at  
6 penetrations for plumbing, electrical and gas lines, and at other openings.

7  
8 [W] 4. Buildings built in compliance with the 1986 or later editions of the *Washington State*  
9 *Energy Code*, Chapter 51-11 WAC; Northwest Energy Code; or Super Good Cents  
10 weatherization standards or equivalent.

11  
12 **Interpretation:** 1986 and later editions of the *Seattle Energy Code*, the *Washington State*  
13 *Energy Code with Seattle Amendments*, and Seattle City Light's Built Smart program are  
14 considered equivalent.

15  
16 **WATER HEATER.** Any heating appliance or equipment, not exceeding a pressure of 160 psi,  
17 a volume of 120 gallons and a heat input of 200,000 Btu/h, that heats potable water and supplies  
18 such water to the potable hot water distribution system.

19  
20 Section 6 Subsections 301.1 and 301.2 of the International Mechanical Code, 2003  
21 Edition, are amended as follows:

22  
23 **301.1 Scope.** This chapter shall govern the approval and installation of all equipment and  
24 appliances that comprise parts of the building mechanical systems regulated by this code in  
25 accordance with Section ~~((401-2))~~ 103.1.



1  
2 **301.2 Energy utilization.** Heating, ventilating and air-conditioning systems of all structures  
3 shall be designed and installed for efficient utilization of energy in accordance with the  
4 ~~((International Energy Conservation Code))~~ Washington State Energy Code with Seattle  
5 Amendments.

6  
7 Section 7 Subsection 301.4 of the International Mechanical Code, 2003 Edition, is  
8 amended as follows:

9  
10 **301.4 Listed and labeled.** All appliances regulated by this code shall be listed and labeled,  
11 unless otherwise approved in accordance with Sections 105, 106 or 107.

12  
13 Section 8 Subsections 301.7 and 301.8 of the International Mechanical Code, 2003  
14 Edition, are amended as follows:

15  
16 **301.7 Electrical.** Electrical wiring, controls and connections to equipment and appliances  
17 regulated by this code shall be in accordance with the ~~((ICC))~~ Seattle Electrical Code.

18  
19 **301.8 Plumbing connections.** Potable water supply and building drainage system connections  
20 to equipment and appliances regulated by this code shall be in accordance with the  
21 ~~((International))~~-Uniform Plumbing Code.

22  
23 Section 9. Subsection 303.3 of the International Mechanical Code, 2003 Edition, is  
24 amended as follows:



1 **303.3 Prohibited locations.** Fuel-fired appliances shall not be located in, or obtain combustion  
2 air from, any of the following rooms or spaces:

- 3
- 4 1. Sleeping rooms.
- 5
- 6 2. Bathrooms.
- 7
- 8 3. Toilet rooms.
- 9
- 10 4. Storage closets.
- 11
- 12 5. Surgical rooms.
- 13

14 **Exception:** This section shall not apply to the following appliances:

- 15
- 16 1. Direct-vent appliances that obtain all combustion air directly from the outdoors.
- 17 2. Solid fuel-fired appliances, provided that the room is not a confined space and the  
18 building is not of unusually tight construction.
- 19 3. Appliances installed in a dedicated enclosure in which all combustion air is taken  
20 directly from the outdoors, in accordance with Section 703. Access to such enclosure  
21 shall be through a solid door, weather-stripped in accordance with the exterior door  
22 air leakage requirements of the (~~*International Energy Conservation Code*~~)  
23 *Washington State Energy Code with Seattle Amendments* and equipped with an  
24 approved self-closing device.  
25  
26  
27  
28



1 Section 10. Subsections 303.7 and 303.8 of the International Mechanical Code, 2003  
2 Edition, are amended as follows:

3  
4 **303.7 Pit locations.** Appliances installed in pits or excavations shall not come in direct contact  
5 with the surrounding soil. The sides of the pit or excavation shall be held back a minimum of 12  
6 inches (305 mm) from the appliance, and a minimum of 30 inches (762 mm) on the control side.  
7 Where the depth exceeds 12 inches (305 mm) below adjoining grade, the walls of the pit or  
8 excavation shall be lined with concrete or masonry. Such concrete or masonry shall extend a  
9 minimum of 4 inches (102 mm) above adjoining grade and shall have sufficient lateral load-  
10 bearing capacity to resist collapse. The appliance shall be protected from flooding in an  
11 approved manner.

12  
13 ~~[B] 303.8 ((Elevator shafts. Mechanical systems shall not be located in an elevator shaft.))~~  
14 **Installation of Pipes or Ducts Conveying Gases, Vapors or Liquids in Hoistways, Machine**  
15 **Rooms, or Machinery Spaces.** Pipes and ducts conveying gases, vapors or liquids are not  
16 permitted to be installed in hoistways, machine rooms, and machinery spaces.

17  
18 **Exceptions:**

- 19 1. Only ducts for heating, cooling, ventilating, and venting these spaces are permitted to  
20 be installed in the hoistway, machine room, and machinery space.
- 21  
22 2. Ducts and electrical conduit may pass through an elevator machine room or  
23 machinery space provided they are separated from the room or space by construction  
24 equal to the rated construction of the room or space and located so that all required  
25 clearances are maintained.
- 26  
27  
28



1  
2       If a vented machine room is not vented directly to the outside of the building, the  
3       vent shall be enclosed within a fire barrier with at least a one-hour fire-resistance rating,  
4       or as required for shafts where it passes through occupied floors.

5  
6       3. Standard sprinkler protection conforming to the requirements of NFPA 13 shall be  
7       permitted to be installed in these spaces, subject to rules promulgated by the code  
8       official.

9  
10       4. Subject to the approval of the building official, pipes protected with double  
11       containment and pipes with threaded or welded joints may be permitted. Pipes shall not  
12       be located less than 7 feet above the floor in machine rooms.

13  
14       Section 11. A new subsection 303.9 is added to the Seattle Mechanical Code, 2003  
15       Edition, as follows:

16  
17       **[B] 303.9 Exit Enclosures.** Mechanical systems shall not be located in exit enclosures.  
18       Penetrations passing entirely through both protective membranes are prohibited.

19       **Exceptions:**

20  
21       1. Equipment allowed or required by the *International Building Code* to serve the exit  
22       enclosure such as ductwork and equipment necessary for independent stairway  
23       pressurization, sprinkler piping, standpipes, electrical conduit terminating in a listed box  
24       not exceeding 16 square inches (10,323 mm<sup>2</sup>) in area, and piping used exclusively for



1 the drainage of rainfall runoff from roof areas provided the roof shall not be used for a  
2 helistop or heliport.

3  
4 2. Unfired heaters allowed by the *International Building Code* for freeze protection of  
5 fire protection equipment may penetrate one protective membrane. The conduit serving  
6 the heater may penetrate both protective membranes.

7  
8 Penetrations and communicating openings between exit enclosures in the same  
9 building are not permitted regardless of their protection. Penetrations shall be protected  
10 as required by the *International Building Code*.

11  
12 Section 12. Subsections 306.3 and 306.4 of the International Mechanical Code, 2003  
13 Edition, are amended as follows:

14  
15 **306.3 Appliances in attics.** Attics containing appliances requiring access shall be provided with  
16 an opening and unobstructed passageway large enough to allow removal of the largest  
17 appliance. The passageway shall not be less than 30 inches (762 mm) high and 22 inches (559  
18 mm) wide and not more than 20 feet (6096 mm) in length measured along the centerline of the  
19 passageway from the opening to the appliance. The passageway shall have continuous solid  
20 flooring not less than 24 inches (610 mm) wide. A level service space not less than 30 inches  
21 (762 mm) deep and 30 inches (762 mm) wide shall be present at the front or service side of the  
22 appliance. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches  
23 (508 mm by 762 mm), where such dimensions are large enough to allow removal of the largest  
24 appliance.



1       **Exception:** The passageway and level service space are not required where the appliance is  
2       capable of being serviced and removed through the required opening.

3  
4       **306.3.1 Electrical requirements.** A lighting fixture controlled by a switch located at the  
5       required passageway opening and a receptacle outlet shall be provided at or near the  
6       appliance location in accordance with the ((ICC)) *Seattle Electrical Code*.

7  
8       **306.4 Appliances under floors.** Underfloor spaces containing appliances requiring access shall  
9       be provided with an access opening and unobstructed passageway large enough to remove the  
10      largest appliance. The passageway shall not be less than 30 inches (762 mm) high and 22 inches  
11      (559 mm) wide, nor more than 20 feet (6096 mm) in length measured along the centerline of the  
12      passageway from the opening to the appliance. A level service space not less than 30 inches  
13      (762 mm) deep and 30 inches (762 mm) wide shall be present at the front or service side of the  
14      appliance. If the depth of the passageway or the service space exceeds 12 inches (305 mm)  
15      below the adjoining grade, the walls of the passageway shall be lined with concrete or masonry.  
16      Such concrete or masonry shall extend a minimum of 4 inches (102 mm) above the adjoining  
17      grade and shall have sufficient lateral-bearing capacity to resist collapse. The clear access  
18      opening dimensions shall be a minimum of 22 inches by 30 inches (559 mm by 762 mm), where  
19      such dimensions are large enough to allow removal of the largest appliance.

20  
21      **Exception:** The passageway is not required where the level service space is present when  
22      the access is open and the appliance is capable of being serviced and removed through the  
23      required opening.



1       **306.4.1 Electrical requirements.** A lighting fixture controlled by a switch located at the  
2       required passageway opening and a receptacle outlet shall be provided at or near the  
3       appliance location in accordance with the ((ICC)) Seattle Electrical Code.

4  
5       Section 13. Subsection 309.1 of the International Mechanical Code, 2003 Edition, is  
6       amended as follows:

7  
8       **[B] 309.1 Space-heating systems.** Interior spaces intended for human occupancy shall be  
9       provided with active or passive space-heating systems capable of maintaining ((a minimum)) an  
10      average indoor temperature of 68°F (20°C) at a point 3 feet (914 mm) above the floor ((on the  
11      design heating day)) when the outside temperature is 24°F. The installation of portable space  
12      heaters shall not be used to achieve compliance with this section.

13  
14      **Exception:** Interior spaces where the primary purpose is not associated with human comfort.

15  
16      Section 14. Subsection 312.1 of the International Mechanical Code, 2003 Edition, is  
17      amended as follows:

18  
19      **312.1 Load calculations.** Heating and cooling system design loads for the purpose of sizing  
20      systems, appliances and equipment shall be determined in accordance with the procedures  
21      described in the ((ASHRAE Handbook of Fundamentals)) Washington State Energy Code with  
22      Seattle Amendments. ((Heating and cooling loads shall be adjusted to account for load  
23      reductions that are achieved when energy recovery systems are utilized in the HVAC system in  
24      accordance with the ASHRAE Handbook HVAC Systems and Equipment. Alternatively,



1 ~~design loads shall be determined by an approved equivalent computation procedure, using the~~  
2 ~~design parameters specified in Chapter 3 of the *International Energy Conservation Code*.))~~  
3

4 Section 15. Subsection 401.2 of the International Mechanical Code, 2003 Edition, is  
5 amended as follows:  
6

7 **401.2 Ventilation required.** ((Every occupied space))  
8

9 **401.2.1 Group R occupancies.** All Group R occupancies, regardless of number of stories,  
10 shall be ventilated as required by Sections 302 or 303 of the *Washington State Ventilation*  
11 *and Indoor Air Quality Code (WSVIAQ)*.  
12

13 **401.2.2 All other occupancies.** All other occupancies shall be ventilated by natural means  
14 in accordance with Section 402 or by mechanical means in accordance with Section 403.  
15

16 Section 16. Subsection 401.5 of the International Mechanical Code, 2003 Edition, is  
17 amended as follows:  
18

19 **401.5 Opening location.** Outdoor air exhaust and intake openings shall be located a minimum  
20 of 10 feet (3048 mm) from lot lines or buildings on the same lot. Where openings front on a  
21 street or public way, the distance shall be measured to the ((centerline)) opposite side of the  
22 street or public way.  
23

24 **Exception:** Group R((-3)).  
25  
26  
27  
28



1 **Interpretation:** For purposes of this section, property line shall include any property line  
2 separating one lot from another lot, but shall not include any property line separating a lot from  
3 a public street or alley right-of-way.

4  
5 **401.5.1 Intake openings.** Mechanical and gravity outside air intake openings, shall be  
6 located a minimum of 10 feet (3048 mm) from any hazardous or noxious contaminant such  
7 as vents, chimneys, plumbing vents, streets, alleys, parking lots and loading docks, except as  
8 otherwise specified in this code. Where a source of contaminant is located within 10 feet  
9 (3048 mm) of an intake opening, such opening shall be located a minimum of 2 feet (610  
10 mm) below the contaminant source. Intake openings shall not be located in crawlspaces or  
11 less than one foot (305 mm) above a roof, adjacent grade, or other surface directly below the  
12 intake.

13  
14 **401.5.2 Exhaust openings.** (~~Outdoor exhaust openings shall be located so as not to~~  
15 ~~create a nuisance. Exhaust air shall not be directed onto walkways.)) The termination point  
16 or exhaust outlet for exhaust ducts shall discharge to the outside of the building and shall be  
17 located, at a minimum, as follows: 3 feet (914 mm) from the property line; 3 feet (914 mm)  
18 from operable openings into the building for all occupancies other than Group U, and 10 feet  
19 (3048 mm) from a mechanical air intake. This includes environmental air regulated by  
20 Sections 504 and 505, but does not include enclosed parking garage exhaust outlets  
21 regulated by Section 404.~~

22 **Exceptions:**

- 23  
24 1. The separation between an air intake and exhaust outlet on a single listed  
25 package HVAC unit.  
26  
27  
28



1  
2           2. Exhaust from environmental air systems other than garages may be discharged  
3           into an open parking garage.

4  
5           3. Where ventilation system design circumstances require building HVAC air to be  
6           relieved, such as during economizer operation, such air may be relieved into an  
7           open or enclosed parking garage within the same building.

8  
9           **[B] 401.5.3 Flood hazard.** For structures located in flood hazard areas, outdoor exhaust  
10           openings shall be at or above the design flood elevation.

11  
12           Section 17. Subsection 402.1 of the International Mechanical Code, 2003 Edition, is  
13           amended as follows:

14  
15           **402.1 Natural ventilation.** Natural ventilation of an occupied space shall be designed to occur  
16           through windows, doors, louvers or other openings to the outdoors. The operating mechanism  
17           for such openings shall be provided with ready access so that the openings are readily  
18           controllable by the building occupants.

19  
20           **Exception:** Automatically controlled natural ventilation systems do not require ready access  
21           and control by building occupants.

22  
23           Section 18. Subsections 403.2 and 403.3 of the International Mechanical Code, 2003  
24           Edition, are amended as follows:



1 **403.2 Outdoor air required.** The minimum ventilation rate of required outdoor air shall be  
2 determined in accordance with Section 403.3.

3  
4 **403.2.1 Recirculation of air.** The air required by Section 403.3 shall not be recirculated. Air  
5 in excess of that required by Section 403.3 shall not be prohibited from being recirculated as  
6 a component of supply air to building spaces, except that:

7  
8 1. Ventilation air shall not be recirculated from one dwelling unit to another or to dissimilar  
9 occupancies.

10  
11 2. Supply air to a swimming pool and associated deck areas shall not be recirculated unless  
12 such air is dehumidified to maintain the relative humidity of the area at 60 percent or less.  
13 Air from this area shall not be recirculated to other spaces.

14  
15 3. Where mechanical exhaust is required by Table 403.3, recirculation of air from such  
16 spaces shall be prohibited. All air supplied to such spaces shall be exhausted, including any  
17 air in excess of that required by Table 403.3.

18  
19 4. Building HVAC air used as transfer air for heat removal may be recirculated.

20  
21 **403.2.2 Transfer air.** Except where recirculation from such spaces is prohibited by Table  
22 403.3, air transferred from occupied spaces is not prohibited from serving as makeup air for  
23 required exhaust systems in such spaces as kitchens, baths, toilet rooms, elevators and  
24 smoking lounges. The amount of transfer air and exhaust air shall be sufficient to provide  
25 the flow rates as specified in Sections 403.3 and 403.3.1. The required outdoor air rates  
26  
27  
28



1 specified in Table 403.3 shall be introduced directly into such spaces or into the occupied  
2 spaces from which air is transferred or a combination of both.

3  
4 **403.2.3 Outdoor air delivery.** The outdoor air shall be ducted in a fully enclosed path  
5 directly to every air handling unit in each zone not provided with sufficient operable opening  
6 area for natural ventilation to occur.

7  
8 **Exception:** Ducts may terminate within 12 inches of the intake to an HVAC unit  
9 provided they are physically fastened so that the outside air duct is directed into the unit  
10 intake.

11  
12 **403.3 Ventilation rate.** Ventilation systems shall be designed to have the capacity to supply the  
13 minimum outdoor airflow rate determined in accordance with Table 403.3 based on the  
14 occupancy of the space and the occupant load or other parameter as stated therein. The occupant  
15 load utilized for design of the ventilation system shall not be less than the number determined  
16 from the estimated maximum occupant load rate indicated in Table 403.3. Ventilation rates for  
17 occupancies not represented in Table 403.3 shall be determined by an approved engineering  
18 analysis. The ventilation system shall be designed to supply the required rate of ventilation air  
19 continuously during the period the building is occupied, except as otherwise stated in other  
20 provisions of the code.

21  
22 **Exception:** ~~((The occupant load is not required to be determined, based on the estimated~~  
23 ~~maximum occupant load rate indicated in Table 403.3 where approved statistical data~~  
24 ~~document the accuracy of an alternate anticipated occupant density))~~ Where occupancy  
25 density is known and documented in the plans, the outside air rate may be based on the



1 design occupant density. Under no circumstance shall the occupancies used result in outside  
2 air less than one-half that resulting from application of Table 403.3 estimated maximum  
3 occupancy rates.

4  
5 **403.3.1 System operation.** The minimum flow rate of outdoor air that the ventilation  
6 system must be capable of supplying during its operation shall be permitted to be based on  
7 the rate per person indicated in Table 403.3 and the actual number of occupants present.

8  
9 **403.3.2 Common ventilation system.** Where spaces having different ventilation rate  
10 requirements are served by a common ventilation system, the ratio of outdoor air to total  
11 supply air for the system shall be determined based on the space having the largest outdoor  
12 air requirement or shall be determined in accordance with the following formula:

13 
$$Y = \frac{X}{(1 + X - Z)}$$
 (Equation 4-1)  
14

15 Where

16  $Y = V_{ot}/V_{st}$  = Corrected fraction of outdoor air in system supply.

17  $X = V_{on}/V_{st}$  = Uncorrected fraction of outdoor air in system supply

18  $Z = V_{oc}/V_{sc}$  = Fraction of outdoor air in critical space. The critical space is that space with the  
19 greatest required fraction of outdoor air in the supply to this space.

20  $V_{ot}$  = Corrected total outdoor airflow rate.

21  $V_{st}$  = Total supply flow rate, i.e., the sum of all supply for all branches of the system.

22  $V_{on}$  = Sum of outdoor airflow rates for all branches on system.

23  $V_{oc}$  = Outdoor airflow rate required in critical spaces.

24  $V_{sc}$  = Supply flow rate in critical space.  
25  
26  
27  
28



1 **403.3.3 Variable air volume system control.** Variable air volume air distribution systems,  
2 other than those designed to supply only 100-percent outdoor air, shall be provided with  
3 controls to regulate the flow of outdoor air. Such control system shall be designed to  
4 maintain the flow of outdoor air at a rate of not less than that required by Section 403 over  
5 the entire range of supply air operating rates.

6  
7 **403.3.4 Balancing.** Ventilation systems shall be balanced by an approved method. Such  
8 balancing shall verify that the ventilation system is capable of supplying the airflow rates  
9 required by Section 403.

10  
11 **403.3.5 Ventilation of buildings used for the repair of automobiles.** In all buildings used  
12 for the repair of automobiles, each repair stall shall be equipped with an exhaust extension  
13 duct, extending to the outside of the building, which if over 10 feet in length, shall  
14 mechanically exhaust 300 cfm. Connecting offices and waiting rooms shall be supplied  
15 with conditioned air under positive pressure.

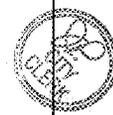
16 **TABLE 403.3**  
**REQUIRED OUTDOOR VENTILATION AIR**

<b>OCCUPANCY CLASSIFICATION</b>	<b>ESTIMATED MAXIMUM OCCUPANT LOAD, PERSONS PER 1,000 SQUARE FEET<sup>a</sup></b>	<b>OUTDOOR AIR (Cubic feet per Minute (cfm) Per person) UNLESS NOTED<sup>e</sup></b>
<b>Correctional facilities</b> Cells without plumbing fixtures with plumbing fixtures Dining halls Guard stations	20 20 100 40	20 20 15 15
<b>Dry Cleaners, laundries</b> Coin-operated dry cleaner Coin-operated laundries Commercial dry cleaner	20 20 30	15 15 30



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Commercial laundry	10	25
Storage, pick up	30	35
<b>Education</b>		
Auditoriums	150	15
Classrooms	50	15
Corridors	—	0.10 cfm/ft <sup>2</sup>
Laboratories	30	20
Libraries	20	15
Locker rooms <sup>b</sup>	—	0.50 cfm/ft <sup>2</sup>
Music rooms	50	15
Smoking lounges <sup>b,g</sup>	70	60
Training shops	30	20
<b>Food and beverage service</b>		
Bars, cocktail lounges	100	30
Cafeteria, fast food	100	20
Dining rooms	70	20
Kitchens (cooking) <sup>f,g</sup>	20	15
<b>Hospitals, nursing and convalescent homes</b>		
Autopsy rooms <sup>b</sup>	—	0.50 cfm/ft <sup>2</sup>
Medical procedure rooms	20	15
Operating rooms	20	30
Patient rooms	10	25
Physical therapy	20	15
Recovery and ICU	20	15
<b>Hotels, motels, resorts and dormitories</b>		
Assembly rooms	120	15
Bathrooms <sup>b,g</sup>	—	35 cfm per room
Bedrooms	—	30 cfm per room
Conference rooms	50	20
Dormitory sleeping areas	20	15
Gambling casinos	120	30
Living rooms	—	30 cfm per room
Lobbies	30	15
<b>Offices</b>		
Conference rooms	50	20
Office spaces	7	20
Reception areas	60	15
Telecommunication centers and data entry	60	20
<b>Private dwellings, single and Multiple</b>		



1	Living areas <sup>c</sup>	Based upon number of bedrooms. first bedroom: 2; each additional bedroom: 1	0.35 air changes per hour <sup>a</sup> or 15 cfm per person, whichever is greater
2			
3			
4	Kitchens <sup>g</sup>	—	100 cfm intermittent or 25 cfm continuous
5			
6	Toilet rooms and bathrooms <sup>g</sup>	—	mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous
7			
8	Garages, separate for each dwelling	—	100 cfm per car
9			
10	Garages, common for multiple units <sup>b</sup>	—	((1.5)) 1.0 cfm/ft <sup>2</sup>
11	<b>Public spaces</b>		
12	Corridors and utilities	—	0.05 cfm/ft <sup>2</sup>
13	Elevators <sup>g</sup>	—	1.00 cfm/ft <sup>2</sup>
14	Locker rooms <sup>b</sup>	—	0.5 cfm/ft <sup>2</sup>
15	Toilet rooms <sup>b,g</sup>	—	75 cfm per water closet or urinal
16	Shower room (per shower head) <sup>b,g</sup>		50 cfm intermediate or 20 cfm continuous
17	Smoking lounges <sup>b,g</sup>	70	60
18	<b>Retail stores, sales floors and Showroom floors</b>		
19	Basement and street	—	0.30 cfm/ft <sup>2</sup>
20	Dressing rooms	—	0.20 cfm/ft <sup>2</sup>
21	Malls and arcades	—	0.20 cfm/ft <sup>2</sup>
22	Shipping and receiving	—	0.15 cfm/ft <sup>2</sup>
23	Smoking lounges <sup>b</sup>	70	60
24	Storage rooms	—	0.15 cfm/ft <sup>2</sup>
25	Upper floors	—	0.20 cfm/ft <sup>2</sup>
26	Warehouses	—	0.05 cfm/ft <sup>2</sup>
27	<b>Specialty shops</b>		
28	Automotive service stations	—	1.5 cfm/ft <sup>2</sup>
	Barber		
	Beauty	25	15
	Clothiers, furniture	25	25
	Florists	—	0.30 cfm/ft <sup>2</sup>



1	Hardware, drugs, fabrics	8	15
	Nail salon <sup>b</sup>	8	15
2	Pet shops	—	25
	Reducing salons	—	1.00 cfm/ft <sup>2</sup>
3	Supermarkets	20	15
		8	15
4	<b>Sports and amusement</b>		
5	Ballrooms and discos	100	25
6	Bowling alleys (seating areas)	70	25
7	Game rooms	70	25
	Ice arenas	—	0.50 cfm/ft <sup>2</sup>
8	Playing floors (gymnasiums)	30	20
	Spectator areas		
9	Swimming pools (pool and deck area)	150	15
		—	0.50 cfm/ft <sup>2</sup>
10	<b>Storage</b>		
	Repair garages	—	1.5 cfm/ft <sup>2</sup>
11	Loading docks	—	1.5 cfm/ft <sup>2</sup>
12	((e))Enclosed parking garages <sup>d</sup>	—	1.0 cfm/ft <sup>2</sup>
	Warehouses	—	0.05 cfm/ft <sup>2</sup>
13	<b>Theaters</b>		
14	Auditoriums	150	15
	Lobbies	150	20
15	Stages, studios	70	15
16	Ticket booths	60	20
17	<b>Transportation</b>		
	Platforms	100	15
18	Vehicles	150	15
	Waiting rooms	100	15
19	<b>Workrooms</b>		
	Bank vaults	5	15
20	Darkrooms	—	0.50 cfm/ft <sup>2</sup>
	Duplicating, printing	—	0.50 cfm/ft <sup>2</sup>
21	Meat processing <sup>c</sup>	10	15
	Pharmacy	20	15
22	Photo studios	10	15

23 For SI: 1 cubic foot per minute = 0.0004719 m<sup>3</sup>/s, 1 ton = 908 kg,

24 1 cubic foot per minute per square foot = 0.00508 m<sup>3</sup>/(s • m<sup>2</sup>),

25 °C = [(°F) - 32]/1.8, 1 square foot = 0.0929 m<sup>2</sup>.



- 1 a. Based upon net floor area.
- 2 b. Mechanical exhaust required and the recirculation of air from such spaces as permitted by  
3 Section 403.2.1 is prohibited (see Section 403.2.1).
- 4 c. Spaces unheated or maintained below 50°F are not covered by these requirements unless  
5 the occupancy is continuous.
- 6 d. Ventilation systems in enclosed parking garages shall comply with Section 404. A  
7 mechanical ventilation system shall not be required in garages having a floor area not exceeding  
8 850 square feet and used for the storage of not more than four vehicles or trucks of 1 ton  
9 maximum capacity.
- 10 e. Where the ventilation rate is expressed in  $\text{cfm}/\text{ft}^2$ , such rate is based upon cubic feet per  
11 minute per square foot of the floor area being ventilated.
- 12 f. The sum of the outdoor and transfer air from adjacent spaces shall be sufficient to provide  
13 an exhaust rate of not less than  $1.5 \text{ cfm}/\text{ft}^2$ .
- 14 g. Transfer air permitted in accordance with Section 403.2.2.

15  
16 Section 19. A new subsection 403.4 is added to the Seattle Mechanical Code, 2003  
17 Edition, as follows:

18  
19 **403.4 Alternate Systems.** Alternate systems designed in accordance with ASHRAE Standard  
20 62-2001 shall be permitted. Calculations and documentation shall be included with the  
21 mechanical permit application.

22  
23 Section 20. Subsections 404.1 and 404.2 of the International Mechanical Code, 2003  
24 Edition, are amended as follows:

25  
26  
27  
28



1 [E]404.1 Enclosed parking garage((s)) exhaust ventilation systems. ((Mechanical ventilation  
2 systems for enclosed parking garages are not required to operate continuously where the system  
3 is arranged to operate automatically upon detection of a concentration of carbon monoxide of 25  
4 parts per million (ppm) by approved automatic detection devices.)) Enclosed parking garage  
5 exhaust ventilation systems with a total design capacity greater than 30,000 cfm shall include  
6 the equipment specified in items 1 and 2 below. Smaller exhaust systems shall include the  
7 equipment specified in either item 1 or 2.

8  
9 1. An automatic control that is capable of staging fans or modulating fan speed as required  
10 to maintain carbon monoxide (CO) concentration below a level of 50 parts per million  
11 (ppm). This provision only applies to garages used predominantly by gasoline-powered  
12 vehicles.

13  
14 2. An automatic control that is capable of shutting off fans or reducing fan speed during  
15 periods when the garage is not in use. The system shall be equipped with at least one of the  
16 following:

17  
18 a. An automatic time clock that can start and stop the system under different schedules  
19 for seven different day-types per week, is capable of retaining programming and time  
20 setting during loss of power for a period of at least 10 hours, and includes an accessible  
21 manual override that allows temporary operation of the system for up to 2 hours.

22  
23 b. An occupant sensor.  
24  
25  
26  
27  
28



1        **404.1.1 Ventilation makeup air.** Ventilation makeup air shall be mechanically supplied to  
2        levels of enclosed parking garages more than 3 stories above or below the nearest garage  
3        entrance or exit.

4  
5        **404.2 Minimum ventilation.** Unless otherwise allowed by Section 404.1, ((A)) automatic  
6        operation of the exhaust system shall not reduce the ventilation rate below 0.05 cfm per square  
7        foot (0.00025 m<sup>3</sup>/s • m<sup>2</sup>) of the garage floor area and the system shall be capable of producing a  
8        ventilation rate of 1.0 cfm per square foot (0.00508 m<sup>3</sup>/s • m<sup>2</sup>) of garage floor area, and, where  
9        applicable, 1.5 cfm per square foot (0.0076 m<sup>3</sup>/s • m<sup>2</sup>) of loading dock floor area. Where  
10       enclosed parking garages and loading docks are combined on the same floor, the 1.5 cfm per  
11       square foot (0.0076 m<sup>3</sup>/s • m<sup>2</sup>) of floor area ventilation rate shall apply to both areas of that  
12       floor.

13  
14       **Code Alternate CA 404.2:** A garage ventilation system shall be designed to exhaust a  
15       minimum of 14,000 cfm for each operating vehicle. Such system shall be based on the  
16       anticipated instantaneous movement rate of vehicles but not less than 2.5% or one vehicle of the  
17       garage capacity.

18  
19       Section 21. A new subsection 404.4 is added to the Seattle Mechanical Code, 2003  
20       Edition, as follows:

21  
22       **404.4 Enclosed parking garage exhaust termination point.** The termination point or exhaust  
23       outlet for garage exhaust ducts discharging to the atmosphere shall be located using the  
24       following minimum distances: 10 feet from a property line, 10 feet from operable openings into  
25



1 a building and 10 feet from a mechanical air intake. Exhaust outlets which extend to the roof  
2 shall extend 3 feet (914 mm) above the roof.

3  
4 **Interpretation:** For purposes of this section, property line shall include any property line  
5 separating one lot from another lot, but shall not include any property line separating a lot from  
6 a public street or alley right-of-way.

7 **Interpretation:** In certain land use zones, the Seattle Land Use Code requires that the venting  
8 of odors, vapors, smoke, cinders, dust, gas and fumes shall be at least 10 feet (3048 mm) above  
9 finished sidewalk grade, and directed away as much as possible from residential uses within 50  
10 feet (15,240 mm) of the vent. This requirement has been interpreted to apply to garage exhaust  
11 system terminations.

12  
13 Section 22. Subsection 405.1 of the International Mechanical Code, 2003 Edition, is  
14 amended as follows:

15  
16 **405.1 General.** Mechanical ventilation systems shall be provided with manual or automatic  
17 controls that will operate such systems whenever the spaces are occupied. Air-conditioning  
18 systems that supply required ventilation air shall be provided with controls designed to  
19 automatically maintain the required outdoor air supply rate during occupancy. Additional  
20 mechanical system control requirements are contained in the *Washington State Energy Code*  
21 *with Seattle Amendments.*

22  
23 Section 23. Section 406 of the International Mechanical Code, 2003 Edition, is amended  
24 as follows:





1        2. **For other product-conveying outlets:** 10 feet (3048 mm) from the property line; 3 feet  
2        (914 mm) from exterior walls and roofs; 10 feet (3048 mm) from operable openings into  
3        the building; 10 feet (3048 mm) above adjoining grade.

4  
5 **Interpretation:** Item 2 includes central vacuum systems, dry cleaner, photo lab, school  
6 chemical lab and combustion engine exhaust.

7  
8        3. **For environmental air duct exhaust:** 3 feet (914 mm) from the property line; 3 feet  
9        (914 mm) from operable openings into the building for all occupancies other than Group  
10       U, and 10 feet (3048 mm) from a mechanical air intake. This includes environmental air  
11       regulated by Sections 504 and 505. For enclosed parking garage exhaust, see Section  
12       404.

13  
14 **Interpretation:** For purposes of this section, property line shall include any property line  
15 separating one lot from another lot, but shall not include any property line separating a lot from  
16 a public street or alley right-of-way.

17  
18 **Note:** In certain land use zones, the Seattle Land Use Code requires that the venting of odors,  
19 vapors, smoke, cinders, dust, gas and fumes shall be at least 10 feet (3048 mm) above finished  
20 sidewalk grade, and directed away as much as possible from residential uses within 50 feet  
21 (15,240 mm) of the vent.

22  
23        Section 25. Subsection 502.1 of the International Mechanical Code, 2003 Edition, is  
24 amended as follows:



1 **502.1 General.** An exhaust system shall be provided, maintained and operated as specifically  
2 required by this section and for all occupied areas where machines, vats, tanks, furnaces, forges,  
3 salamanders and other appliances, equipment and processes in such areas produce or throw off  
4 dust or particles sufficiently light to float in the air, or which emit heat, odors, fumes, spray, gas  
5 or smoke, in such quantities so as to be irritating or injurious to health or safety.

6  
7 **502.1.1 Exhaust inlet location.** The inlet to an exhaust system shall be located in the area of  
8 heaviest concentration of contaminants.

9  
10 **[F] 502.1.2 Fuel-dispensing areas.** The bottom of an air inlet or exhaust opening in fuel-  
11 dispensing areas shall be located not more than 18 inches (457 mm) above the floor.

12  
13 **502.1.3 Equipment, appliance and service rooms.** Equipment, appliance and system  
14 service rooms that house sources of odors, fumes, noxious gases, smoke, steam, dust, spray  
15 or other contaminants shall be designed and constructed so as to prevent spreading of such  
16 contaminants to other occupied parts of the building.

17  
18 **[F] 502.1.4 Hazardous exhaust.** The mechanical exhaust of high concentrations of dust or  
19 hazardous vapors shall conform to the requirements of Section 510.

20  
21 Section 26. Subsection 502.5 of the International Mechanical Code, 2003 Edition, is  
22 amended as follows:

23  
24 **[F]502.5 Valve-regulated lead-acid batteries.** Valve-regulated lead-acid battery systems as  
25 regulated by Section 609 of the *International Fire Code*, shall be provided with ventilation in  
26



1 accordance with Section 502.5.1 or 502.5.2 for rooms and in accordance with Section 502.5.3 or  
2 502.5.4 for cabinets.

3  
4 **[F]502.5.1 Hydrogen limit in rooms.** The ventilation system shall be designed to limit the  
5 maximum concentration of hydrogen to 1.0 percent of the total volume of the room during  
6 the worst-case event of simultaneous boost charging of all batteries in the room. Where  
7 calculations are not provided to substantiate the ventilation rate, continuous ventilation shall  
8 be provided in accordance with Section 502.5.2.

9  
10 **[F]502.5.2 Ventilation rate in rooms.** Continuous ventilation shall be provided at a rate of  
11 not less than 1 cubic foot per minute per square foot (cfm/ft.<sup>2</sup>) [0.00508 m<sup>3</sup>/(s • m<sup>2</sup>)] of floor  
12 area of the room.

13  
14 **[F] 502.5.3 Hydrogen limit in cabinets.** Where VLA batteries are installed inside a cabinet,  
15 the cabinet shall be vented. The cabinet ventilation system shall be designed to limit the  
16 maximum concentration of hydrogen to 1.0 percent of the total volume of the cabinet during  
17 the worst-case event of simultaneous boost charging of all batteries in the cabinet. Where  
18 calculations are not provided to substantiate the ventilation rate, continuous ventilation in  
19 accordance with Section 502.5.4 shall be provided.

20  
21 **[F]502.5.4 Ventilation rate in cabinets.** Continuous ventilation of the cabinet shall be  
22 provided at a rate of not less than 1 cubic foot per minute per square foot (cfm/ft.<sup>2</sup>) [0.00508  
23 m<sup>3</sup>/(s • m<sup>2</sup>)] of the floor area covered by the cabinet. The room in which the cabinet is  
24 installed shall also be ventilated as required by Section 502.5.1 or 502.5.2.



1 Section 27. Subsections 502.7 and 502.8 of the International Mechanical Code, 2003  
2 Edition, are amended as follows:

3  
4 **[F] 502.7 Application of flammable finishes.** Mechanical exhaust as required by this section  
5 shall be provided for operations involving the application of flammable finishes.

6 Spray finishing operations conducted in Group A, E, I or R Occupancies shall be located in a  
7 spray room separated vertically and horizontally from other areas in accordance with the  
8 International Building Code. In other occupancies, spray-finishing operations shall be  
9 conducted in a spray room, spray booth or limited spraying area approved for such use.

10  
11 **[F] 502.7.1 During construction.** Ventilation shall be provided for operations involving the  
12 application of materials containing flammable solvents in the course of construction,  
13 alteration or demolition of a structure.

14  
15 **[F] 502.7.2 Limited spraying ((spaces)) areas.** Positive mechanical ventilation which  
16 provides a minimum of six complete air changes per hour shall be installed in limited  
17 spraying ((spaces)) areas. Such system shall meet the requirements of the *International Fire*  
18 *Code* for handling flammable vapors. Explosion venting is not required.

19  
20 **[F] 502.7.3 Spraying areas.** Mechanical ventilation of spraying areas shall be provided in  
21 accordance with Sections 502.7.3.1 through 502.7.3.7.

22  
23 **[F] 502.7.3.1 Operation.** Mechanical ventilation shall be kept in operation at all times  
24 while spraying operations are being conducted and for a sufficient time thereafter to  
25 allow vapors from drying coated articles and finishing material residue to be exhausted.



1 Spraying equipment shall be interlocked with the ventilation of the spraying area such  
2 that spraying operations cannot be conducted unless the ventilation system is in  
3 operation.

4  
5 **[F] 502.7.3.2 Recirculation.** Air exhausted from spraying operations shall not be  
6 recirculated.

7  
8 **Exceptions:**

9  
10 1. Air exhausted from spraying operations shall be permitted to be recirculated  
11 as makeup air for unmanned spray operations provided that:

12  
13 1.1. Solid particulate has been removed.

14  
15 1.2. The vapor concentration is less than 25 percent of the lower  
16 flammability limit (LFL).

17  
18 1.3. Approved equipment is used to monitor the vapor concentration.

19  
20 1.4. An alarm is sounded and spray operations are automatically shut  
21 down if the vapor concentration exceeds 25 percent of the LFL.

22  
23 1.5. The spray booths, spray ((spaces)) areas or spray rooms involved in  
24 any recirculation process shall be provided with mechanical  
25 ventilation that shall automatically exhaust 100 percent of the  
26

1 required air volume in the event of shutdown by approved  
2 equipment used to monitor vapor concentrations.

- 3  
4 2. Air exhausted from spraying operations shall be permitted to be recirculated  
5 as makeup air to manned spraying operations if all of the conditions provided  
6 in Exception 1 are included in the installation and documents have been  
7 prepared to show that the installation does not present life safety hazards to  
8 personnel inside the spray booth, spray ((space)) area or spray room.

9  
10 **[F] 502.7.3.3 Air velocity.** Ventilation systems shall be designed, installed and  
11 maintained such that the average air velocity over the open face of the booth, or booth  
12 cross section in the direction of airflow during spraying operations, is not less than 100  
13 feet per minute (0.51 m/s).

14  
15 **[F] 502.7.3.4 Ventilation obstruction.** Articles being sprayed shall be positioned in a  
16 manner that does not obstruct collection of overspray.

17  
18 **[F] 502.7.3.5 Independent ducts.** Each spray booth and spray room shall have an  
19 independent exhaust duct system discharging to the outdoors.

20  
21 **Exceptions:**

- 22 1. Multiple spray booths having a combined frontal area of 18 square feet (1.67  
23 m<sup>2</sup>) or less are allowed to have a common exhaust where identical spray-  
24 finishing material is used in each booth. If more than one fan serves one  
25  
26  
27  
28



1 booth, such fans shall be interconnected so that all fans operate  
2 simultaneously.

3  
4 2. Where treatment of exhaust is necessary for air pollution control or energy  
5 conservation, ducts shall be allowed to be manifolded if all of the following  
6 conditions are met:

7  
8 2.1. The sprayed materials used are compatible and will not react or cause  
9 ignition of the residue in the ducts.

10  
11 2.2. Nitrocellulose-based finishing material shall not be used.

12  
13 2.3. A filtering system shall be provided to reduce the amount of overspray  
14 carried into the duct manifold.

15  
16 2.4. Automatic sprinkler protection shall be provided at the junction of each  
17 booth exhaust with the manifold, in addition to the protection required  
18 by this chapter.

19  
20 **[F] 502.7.3.6 Termination point.** (~~The termination point for exhaust ducts discharging~~  
21 ~~to the atmosphere shall be located with the following minimum distances:~~

22  
23 ~~1. For ducts conveying explosive or flammable vapors, fumes or dusts: 30 feet~~  
24 ~~(9144 mm) from the property line; 10 feet (3048 mm) from openings into the~~  
25 ~~building; 6 feet (1829 mm) from exterior walls and roofs; 30 feet (9144 mm)~~  
26



1 from combustible walls and openings into the building which are in the direction  
2 of the exhaust discharge; 10 feet (3048 mm) above adjoining grade.

3  
4 ~~2. For other product conveying outlets: 10 feet (3048 mm) from the property line; 3~~  
5 ~~feet (914 mm) from exterior walls and roofs; 10 feet (3048 mm) from openings~~  
6 ~~into the building; 10 feet (3048 mm) above adjoining grade.~~

7  
8 ~~3. For environmental air duct exhaust: 3 feet (914 mm) from the property line; 3~~  
9 ~~feet (914 mm) from openings into the building.)) See Section 501.5.~~

10  
11 **[F] 502.7.3.7 Fan motors and belts.** Electric motors driving exhaust fans shall not be  
12 placed inside booths or ducts. Fan rotating elements shall be nonferrous or nonsparking  
13 or the casing shall consist of, or be lined with, such material. Belts shall not enter the  
14 duct or booth unless the belt and pulley within the duct are tightly enclosed.

15  
16 **[F] 502.7.4 Dipping operations.** Vapor areas of dip tank operations shall be provided with  
17 mechanical ventilation adequate to prevent the dangerous accumulation of vapors. Required  
18 ventilation systems shall be so arranged that the failure of any ventilating fan will  
19 automatically stop the dipping conveyor system.

20  
21 **[F] 502.7.5 Electrostatic apparatus.** The spraying area in spray-finishing operations  
22 involving electrostatic apparatus and devices shall be ventilated in accordance with Section  
23 502.7.3.



1 [F] **502.7.6 Powder coating.** Exhaust ventilation for powder-coating operations shall be  
2 sufficient to maintain the atmosphere below one-half of the minimum explosive  
3 concentration for the material being applied. Nondeposited, air-suspended powders shall be  
4 removed through exhaust ducts to the powder recovery cyclone or receptacle.

5  
6 [F] **502.7.7 Floor resurfacing operations.** To prevent the accumulation of flammable  
7 vapors during floor resurfacing operations, mechanical ventilation at a minimum rate of 1  
8 cfm/ft<sup>2</sup> [0.00508 m<sup>3</sup>/(s • m<sup>2</sup>)] of area being finished shall be provided. Such exhaust shall be  
9 by approved temporary or portable means. Vapors shall be exhausted to the exterior of the  
10 building.

11  
12 [F] **502.8 Hazardous materials—general requirements.** Exhaust ventilation systems for  
13 structures containing hazardous materials shall be provided as required in Sections 502.8.1  
14 through 502.8.5.

15  
16 [F] **502.8.1 Storage in excess of the maximum allowable quantities.** Indoor storage areas  
17 and storage buildings for hazardous materials in amounts exceeding the maximum allowable  
18 quantity per control area shall be provided with mechanical exhaust ventilation or natural  
19 ventilation where natural ventilation can be shown to be acceptable for the materials as  
20 stored.

21  
22 **Exception:** Storage areas for flammable solids complying with the *International Fire*  
23 *Code.*



1           **502.8.1.1 System requirements.** Exhaust ventilation systems shall comply with all  
2 of the following:

- 3
- 4           1. The installation shall be in accordance with this code.
- 5
- 6           2. Mechanical ventilation shall be provided at a rate of not less than 1 cfm/ft<sup>2</sup>  
7           [0.00508 m<sup>3</sup>/(s • m<sup>2</sup>)] of floor area over the storage area.
- 8
- 9           3. The systems shall operate continuously unless alternate designs are approved.
- 10
- 11           4. A manual shutoff control shall be provided outside of the room in a position  
12 adjacent to the access door to the room or in another approved location. The  
13 switch shall be of ~~((the))~~ a break-glass type or other approved type and shall  
14 be labeled: VENTILATION SYSTEM EMERGENCY SHUTOFF.
- 15
- 16           5. The exhaust ventilation system shall be designed to consider the density of  
17 the potential fumes or vapors released. For fumes or vapors that are heavier  
18 than air, exhaust shall be taken from a point within 12 inches (304 mm) of  
19 the floor. For fumes or vapors that are lighter than air, exhaust shall be taken  
20 from a point within 12 inches (305 mm) of the highest point of the room.
- 21
- 22           6. The location of both the exhaust and inlet air openings shall be designed to  
23 provide air movement across all portions of the floor or room to prevent the  
24 accumulation of vapors.
- 25
- 26
- 27
- 28



1           7. The exhaust (~~ventilation~~) air shall not be recirculated within the room or  
2           building if the materials stored are capable of emitting hazardous vapors.  
3

4           Section 28. Subsection 504.6 of the International Mechanical Code, 2003 Edition, is  
5 amended as follows:  
6

7 **504.6 Domestic clothes dryer ducts.** Exhaust ducts for domestic clothes dryers shall be  
8 constructed of metal and shall have a smooth interior finish. The exhaust duct shall be a  
9 minimum nominal size of 4 inches (102 mm) in diameter. The entire exhaust system shall be  
10 supported and secured in place. The male end of the duct at overlapped duct joints shall extend  
11 in the direction of airflow. Clothes dryer transition ducts used to connect the appliance to the  
12 exhaust duct system shall be limited to single lengths not to exceed 8 feet (2438 mm) and shall  
13 be listed and labeled for the application. Transition ducts shall not be concealed within  
14 construction.  
15

16 **504.6.1 Maximum length.** The maximum length of a clothes dryer exhaust duct shall not  
17 exceed 25 ft (7620 mm) from the dryer location to the outlet terminal. The maximum length  
18 of duct shall be reduced 2½ feet for each 45-degree (0.79 rad) bend and 5 feet (1524 mm)  
19 for each 90-degree (1.6 rad) bend. The maximum length of the exhaust duct does not include  
20 the transition duct.  
21

22 **Exception:** Where the make and model of the clothes dryer to be installed is known and  
23 the manufacturer's installation instructions for such dryer are provided to the code  
24 official, the maximum length of the exhaust duct, including any transition duct, shall be  
25 permitted to be in accordance with the dryer manufacturer's installation instructions.  
26  
27  
28



1  
2 **504.6.2 Rough-in required.** Where a compartment or space for a domestic clothes dryer is  
3 provided, an exhaust duct system shall be installed in accordance with Sections 504.6 and  
4 504.6.1.

5  
6 **504.6.3 Protection required.** Clothes dryer exhaust ducts shall be protected by a steel plate  
7 or clip not less than 1/16 inch (1.59 mm) in thickness and of sufficient width to fully protect  
8 the duct. Plates or clips shall be placed on the finish face of all framing members which the  
9 clothes dryer exhaust duct passes through when there is less than 1¼ inch (32 mm) of  
10 framing material between the duct and the finish face. Plates or clips shall also be placed  
11 where nails or screws from finish or other work are likely to penetrate the clothes dryer  
12 exhaust duct.

13  
14 Section 29 Subsection 505.1 of the International Mechanical Code, 2003 Edition, is  
15 amended as follows:

16  
17 **505.1 Domestic systems.** Where domestic range hoods and domestic appliances equipped with  
18 downdraft exhaust are located within dwelling units, such hoods and appliances shall discharge  
19 to the outdoors through ducts constructed of galvanized steel, stainless steel, aluminum or  
20 copper. Such ducts shall have smooth inner walls and shall be air tight and equipped with a  
21 backdraft damper.

22  
23 Domestic kitchen exhaust systems shall be exhausted separately from domestic clothes dryer  
24 and bathroom vent systems.



1       **Exceptions:**

- 2
- 3           1. Where installed in accordance with the manufacturer's installation instructions and
- 4           where mechanical or natural ventilation is otherwise provided in accordance with
- 5           Chapter 4, listed and labeled ductless range hoods shall not be required to discharge
- 6           to the outdoors.
- 7

8       Note: Chapter 3 of the *Washington State Ventilation and Indoor Air Quality Code* requires  
9       either 100 cfm of intermittent or 25 cfm of continuous source specific kitchen exhaust  
10       ventilation.

- 11
- 12           2. Ducts for domestic kitchen cooking appliances equipped with downdraft exhaust
- 13           systems shall be permitted to be constructed of Schedule 40 PVC pipe provided that
- 14           the installation complies with all of the following:
- 15
- 16           2.1. The duct shall be installed under a concrete slab poured on grade.
- 17
- 18           2.2. The underfloor trench in which the duct is installed shall be completely
- 19           backfilled with sand or gravel.
- 20
- 21           2.3. The PVC duct shall extend not greater than 1 inch (25 mm) above the indoor
- 22           concrete floor surface.
- 23
- 24           2.4. The PVC duct shall extend not greater than 1 inch (25 mm) above grade
- 25           outside of the building.
- 26
- 27
- 28



1  
2           2.5. The PVC ducts shall be solvent cemented.  
3

4           Section 30. Subsections 506.3 and 506.4 of the International Mechanical Code, 2003  
5 Edition, are amended as follows:  
6

7 **506.3 Ducts serving Type I hoods.** Type I exhaust ducts shall be independent of all other  
8 exhaust systems except as provided in Section 506.3.5. Commercial kitchen duct systems  
9 serving Type I hoods shall be designed, constructed and installed in accordance with Sections  
10 506.3.1 through 506.3.12.3.  
11

12 **506.3.1 Duct materials.** Ducts serving Type I hoods shall be constructed of materials in  
13 accordance with Sections 506.3.1.1 and 506.3.1.2.  
14

15 **506.3.1.1 Grease duct materials.** Grease ducts serving Type I hoods shall be  
16 constructed of steel not less than 0.055 inch (1.4 mm) (No. 16 Gage) in thickness or  
17 stainless steel not less than 0.044 inch (1.1 mm) (No. 18 Gage) in thickness.  
18

19 **Exception:** Listed and labeled factory-built commercial kitchen grease ducts shall be  
20 installed in accordance with Section 304.1.  
21

22 **506.3.1.2 Makeup air ducts.** Make up air ducts connecting to or within 18 inches (457  
23 mm) of a Type I hood shall be constructed and installed in accordance with Sections  
24 603.1, 603.3, 603.4, 603.9, 603.10 and 603.12. Duct insulation installed within 18 inches  
25 (457 mm) of a Type I hood shall be noncombustible or shall be listed for the application.  
26  
27  
28



1  
2 **506.3.2 Joints, seams and penetrations of grease ducts.** Joints, seams and penetrations  
3 of grease ducts shall be made with a continuous liquid-tight weld or braze made on the  
4 external surface of the duct system.

5  
6 **Exceptions:**

- 7  
8 1. Penetrations shall not be required to be welded or brazed where sealed by  
9 devices that are listed for the application.  
10  
11 2. Internal welding or brazing shall not be prohibited provided that the joint is  
12 formed or ground smooth and is provided with ready access for inspection.  
13  
14 3. Listed and labeled factory-built commercial kitchen grease ducts installed in  
15 accordance with Section 304.1.  
16

17 **506.3.2.1 Duct joint types.** Duct joints shall be butt joints or overlapping duct joints of  
18 either the telescoping or bell type. Overlapping joints shall be installed to prevent ledges  
19 and obstructions from collecting grease or interfering with gravity drainage to the  
20 intended collection point. The difference between the inside cross-sectional dimensions  
21 of overlapping sections of duct shall not exceed 0.25 inch (6 mm). The length of overlap  
22 for overlapping duct joints shall not exceed 2 inches (51 mm).  
23  
24  
25  
26  
27  
28



1           **506.3.2.2 Duct-to-hood joints.** Duct-to-hood joints shall be made with continuous  
2 internal or external liquid-tight welded or brazed joints. Such joints shall be smooth,  
3 accessible for inspection, and without grease traps.  
4

5           **Exceptions:** This section shall not apply to:

6  
7           1. A vertical duct-to-hood collar connection made in the top plane of the hood  
8 in accordance with all of the following:

9  
10           1.1. The hood duct opening shall have a 1-inch-deep (25 mm), full  
11 perimeter, welded flange turned down into the hood interior at an angle  
12 of 90 degrees from the plane of the opening.  
13

14           1.2. The duct shall have a 1-inch-deep (25 mm) flange made by a 1-inch by  
15 1-inch (25 mm by 25 mm) angle iron welded to the full perimeter of the  
16 duct not less than 1 inch (25 mm) above the bottom end of the duct.  
17

18           1.3. A gasket rated for use at not less than 1,500°F (815°C) is installed  
19 between the duct flange and the top of the hood.  
20

21           1.4. The duct-to-hood joint shall be secured by stud bolts not less than 0.25  
22 inch (6.4 mm) in diameter welded to the hood with a spacing not greater  
23 than 4 inches (102 mm) on center for the full perimeter of the opening.  
24 All bolts and nuts are to be secured with lockwashers.  
25  
26  
27  
28



- 1                   2. Listed and labeled duct-to-hood collar connections installed in accordance  
2                   with Section 304.1.

3  
4                   **506.3.2.3 Duct-to-exhaust fan connections.** Duct- to-exhaust fan connections shall be  
5 flanged and gasketed at the base of the fan for vertical discharge fans; shall be flanged,  
6 gasketed and bolted to the inlet of the fan for side-inlet utility fans; and shall be flanged,  
7 gasketed and bolted to the inlet and outlet of the fan for in-line fans.

8  
9                   **506.3.2.4 Vibration isolation.** A vibration isolation connector for connecting a duct to a  
10 fan shall consist of noncombustible packing in a metal sleeve joint of approved design or  
11 shall be a coated-fabric flexible duct connector listed and labeled for the application.  
12 Vibration isolation connectors shall be installed only at the connection of a duct to a fan  
13 inlet or outlet.

14  
15                   **506.3.3 Grease duct supports.** Grease duct bracing and supports shall be of  
16 noncombustible material securely attached to the structure and designed to carry gravity and  
17 seismic loads within the stress limitations of the *International Building Code*. Bolts, screws,  
18 rivets and other mechanical fasteners shall not penetrate duct walls.

19  
20                   **506.3.4 Air velocity.** Grease duct systems serving a Type I hood shall be designed and  
21 installed to provide an air velocity within the duct system of not less than 1,500 feet per  
22 minute (7.6 m/s).

23  
24                   **Exception:** The velocity limitations shall not apply within duct transitions utilized to  
25 connect ducts to differently sized or shaped openings in hoods and fans, provided that  
26

1 such transitions do not exceed 3 feet (914 mm) in length and are designed to prevent the  
2 trapping of grease.

3  
4 **506.3.5 Separation of grease duct system.** A separate grease duct system shall be provided  
5 for each Type I hood. A separate grease duct system is not required where all of the  
6 following conditions are met:

- 7
- 8 1. All interconnected hoods are located within the same story.
  - 9
  - 10 2. All interconnected hoods are located within the same room or in adjoining rooms.
  - 11
  - 12 3. Interconnecting ducts do not penetrate assemblies required to be fire-resistance rated.
  - 13
  - 14 4. The grease duct system does not serve solid fuel-fired appliances.
  - 15

16 **506.3.6 Grease duct clearances.** Grease duct systems and exhaust equipment serving a  
17 Type I hood shall have a clearance to combustible construction of not less than 18 inches  
18 (457 mm), and shall have a clearance to noncombustible construction and gypsum wallboard  
19 attached to noncombustible structures of not less than 3 inches (76 mm).

20  
21 **Exception:** Listed and labeled factory-built commercial kitchen grease ducts and  
22 exhaust equipment installed in accordance with Section 304.1.

23  
24 **506.3.7 Prevention of grease accumulation in grease ducts.** Duct systems serving a Type I  
25 hood shall be constructed and installed so that grease cannot collect in any portion thereof,  
26



1 and the system shall slope not less than one-fourth unit vertical in 12 units horizontal (2-  
2 percent slope) toward the hood or toward an approved grease reservoir. Where horizontal  
3 ducts exceed 75 feet (22 860 mm) in length, the slope shall not be less than one unit vertical  
4 in 12 units horizontal (8.3-percent slope).

5  
6 **506.3.8 Grease duct cleanouts and other openings.** Grease duct systems shall not have  
7 openings therein other than those required for proper operation and maintenance of the  
8 system. Any portion of such system having sections not provided with access from the duct  
9 entry or discharge shall be provided with cleanout openings. Cleanout openings shall be  
10 equipped with tight-fitting doors constructed of steel having a thickness not less than that  
11 required for the duct. Doors shall be equipped with a substantial method of latching,  
12 sufficient to hold the door tightly closed. Doors shall be designed so that they are operable  
13 without the use of a tool. Door assemblies, including any frames and gasketing, shall be  
14 approved for the purpose, and shall not have fasteners that penetrate the duct. Listed and  
15 labeled access door assemblies shall be installed in accordance with the terms of the listing.

16  
17 **506.3.8.1 Personnel entry.** Where ductwork is large enough to allow entry of personnel,  
18 not less than one approved or listed opening having dimensions not less than 20 inches  
19 by 20 inches (508 mm by 508 mm) shall be provided in the horizontal sections, and in  
20 the top of vertical risers. Where such entry is provided, the duct and its supports shall be  
21 capable of supporting the additional load and the cleanouts specified in Section 506.3.8.  
22 are not required.

23  
24 **506.3.9 Grease duct horizontal cleanouts.** Cleanouts located on horizontal sections of  
25 ducts shall be spaced not more than 20 feet (6096 mm) apart. The cleanouts shall be located  
26



1 on the side of the duct with the opening not less than 1.5 inches (38 mm) above the bottom  
2 of the duct, and not less than 1 inch (25 mm) below the top of the duct. The opening  
3 minimum dimensions shall be 12 inches (305 mm) on each side. Where the dimensions of  
4 the side of the duct prohibit the cleanout installation prescribed herein, the openings shall be  
5 on the top of the duct or the bottom of the duct. Where located on the top of the duct, the  
6 opening edges shall be a minimum of 1 inch (25 mm) from the edges of the duct. Where  
7 located in the bottom of the duct, cleanout openings shall be designed to provide internal  
8 damming around the opening, shall be provided with gasketing to preclude grease leakage,  
9 shall provide for drainage of grease down the duct around the dam, and shall be approved  
10 for the application. Where the dimensions of the sides, top or bottom of the duct preclude  
11 the installation of the prescribed minimum-size cleanout opening, the cleanout shall be  
12 located on the duct face that affords the largest opening dimension and shall be installed  
13 with the opening edges at the prescribed distances from the duct edges as previously set  
14 forth in this section.

15  
16 **506.3.10 Grease duct enclosure.** A grease duct serving a Type I hood that penetrates a  
17 ceiling, wall or floor shall be enclosed from the point of penetration to the outlet terminal. A  
18 duct shall penetrate exterior walls only at locations where unprotected openings are  
19 permitted by the *International Building Code*. Ducts shall be enclosed in accordance with  
20 the *International Building Code* requirements for shaft construction. The duct enclosure  
21 shall be sealed around the duct at the point of penetration and vented to the outside of the  
22 building through the use of weather-protected openings. Clearance from the duct to the  
23 interior surface of enclosures of combustible construction shall be not less than 18 inches  
24 (457 mm). Clearance from the duct to the interior surface of enclosures of noncombustible  
25 construction or gypsum wallboard attached to noncombustible structures shall be not less  
26  
27  
28



1 than ((6)) 3 inches (((152)) 76 mm). The duct enclosure shall serve a single grease exhaust  
2 duct system and shall not contain any other ducts, piping, wiring or systems.

3  
4 **Exceptions:**

- 5  
6 1. The shaft enclosure provisions of this section shall not be required where a duct  
7 penetration is protected with a through-penetration firestop system classified in  
8 accordance with ASTM E 814 and having an "F" and "T" rating equal to the fire-  
9 resistance rating of the assembly being penetrated and where the surface of the  
10 duct is continuously covered on all sides from the point at which the duct  
11 penetrates a ceiling, wall or floor to the outlet terminal with a classified and  
12 labeled material, system, method of construction or product specifically  
13 evaluated for such purpose, in accordance with a nationally recognized standard  
14 for such enclosure materials. Exposed duct wrap systems shall be protected  
15 where subject to physical damage.

16  
17 ~~((2. A duct enclosure shall not be required for a grease duct that penetrates only a  
18 nonfire-resistance-rated roof/ceiling assembly.))~~

19  
20 **506.3.11 Grease duct fire-resistive access opening.** Where cleanout openings are located in  
21 ducts within a fire-resistance-rated enclosure, access openings shall be provided in the  
22 enclosure at each cleanout point. Access openings shall be equipped with tight-fitting sliding  
23 or hinged doors that are equal in fire-resistive protection to that of the shaft or enclosure. An  
24 approved sign shall be placed on access opening panels with wording as follows: "ACCESS  
25 PANEL. DO NOT OBSTRUCT."



1  
2 **506.3.12 Exhaust outlets serving Type I hoods.** Exhaust outlets for grease ducts serving  
3 Type I hoods shall conform to the requirements of Sections 506.3.12.1 through 506.3.12.3.  
4

5 **506.3.12.1 Termination above the roof.** Exhaust outlets that terminate above the roof  
6 shall have the discharge opening located not less than 40 inches (1016 mm) above the  
7 roof surface.  
8

9 **506.3.12.2 Termination through an exterior wall.** Exhaust outlets shall be permitted  
10 to terminate through exterior walls where the smoke, grease, gases, vapors, and odors in  
11 the discharge from such terminations do not create a public nuisance or a fire hazard.  
12 Such terminations shall not be located where protected openings are required by the  
13 *International Building Code*. Other exterior openings shall not be located within ((3)) 10  
14 feet (((914)) 3048 mm) of such terminations.  
15

16 **Note:** See Director's Rule 14-98, or any rule superseding Director's Rule 14-98, for additional  
17 requirements.  
18

19 **506.3.12.3 Termination location.** Exhaust outlets shall be located not less than 10 feet  
20 (3048 mm) horizontally from parts of the same or contiguous buildings, adjacent  
21 property lines and air intake openings into any building and shall be located not less than  
22 10 feet (3048 mm) above the adjoining grade level.  
23  
24  
25  
26  
27  
28





1  
2 **507.2 Where required.** A Type I or Type II hood shall be installed at or above all commercial  
3 cooking appliances in accordance with Sections 507.2.1 and 507.2.2. Where any cooking  
4 appliance under a single hood requires a Type I hood, a Type I hood shall be installed. Where a  
5 Type II hood is required, a Type I or Type II hood shall be installed.

6  
7 **507.2.1 Type I hoods.** Type I hoods shall be installed ~~((where))~~ for collecting and removing  
8 grease and smoke generated from cooking appliances ~~((produce grease or smoke))~~, such as  
9 occurs with griddles, fryers, broilers, ovens, ranges and wok ranges.

10  
11 **507.2.2 Type II hoods.** Type II hoods shall be installed ~~((where))~~ for collecting and  
12 removing steam, vapor, heat or odors from cooking or dishwashing appliances ~~((produce~~  
13 ~~heat or steam and do not produce grease or smoke))~~, such as steamers, kettles, pasta cookers,  
14 pastry ovens, pizza ovens, coffee roaster ovens, roasting ovens of maximum 6 kW (20,000  
15 Btu/h) capacity and dishwashing machines above 140°F (60°C) maximum water  
16 temperature.

17  
18 **Exceptions:**

- 19  
20 1. Under-counter-type commercial dishwashing machines.
- 21  
22 2. A Type II hood is not required for dishwashers and potwashers that are provided  
23 with heat and water vapor exhaust systems that are supplied by the appliance  
24 manufacturer and are installed in accordance with the manufacturer's  
25 instructions.



**507.2.3 Domestic cooking appliances used for commercial purposes.** Domestic cooking appliances utilized for commercial purposes shall be provided with Type I or Type II hoods as required for the type of appliances and processes in accordance with Sections 507.2, 507.2.1 and 507.2.2.

**507.2.4 Solid fuel.** Type I hoods for use over solid fuel-burning cooking appliances shall discharge to an exhaust system that is independent of other exhaust systems.

**Interpretation:** The table below summarizes the types of hoods which are required for different types of appliances. The code official has determined that the appliances for which no hood is required do not produce amounts of steam, smoke, grease or heat comparable to the equipment listed in Section 507.2

<u>TYPE OF APPLIANCE<sup>1</sup></u>	<u>TYPE OF HOOD REQUIRED<sup>2</sup></u>		
	<u>TYPE I</u>	<u>TYPE II</u>	<u>NONE</u>
<u>Baking oven</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Charbroiler</u>	<u>All sizes</u>		
<u>Coffee maker</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Coffee roaster</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Deep-fat fryer</u>	<u>All sizes</u>		
<u>Dishwasher</u>		<u>&gt; 140°F</u>	<u>≤ 140°F</u>
<u>Grill</u>	<u>All sizes</u>		
<u>Hot dog display heater</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Microwave oven</u>			<u>All sizes</u>
<u>Pastry oven</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Pizza oven</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Popcorn maker</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Roasting oven<sup>3</sup></u>	<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>	<u>≤ 6 kW</u>
<u>Roll warmer</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Solid-fuel burning appliances</u>	<u>All sizes &amp; all food products</u>		
<u>Soup warmer, soup preparation cooking unit</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Steam reconstitution device</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Steam table</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Steamer</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Toaster</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>
<u>Warming oven</u>		<u>&gt; 6 kW</u>	<u>≤ 6 kW</u>



1. The code official shall determine hood requirements for appliances not listed in the table.
2. Section 507.2 defines Type I and Type II kitchen hoods.
3. Roasting ovens are used to cook raw or partially cooked food.

Section 32. Subsection 508.1 of the International Mechanical Code, 2003 Edition, is amended as follows:

**508.1 Makeup air.** Makeup air shall be supplied during the operation of commercial kitchen exhaust systems that are provided for commercial cooking appliances. The amount of makeup air supplied shall be approximately equal to the amount of exhaust air. The makeup air shall not reduce the effectiveness of the exhaust system. Makeup air diffusers shall be located to prevent a short-circuiting of makeup air furnished to the exhaust system. Makeup air shall be provided by gravity or mechanical means or both. For mechanical makeup air systems, the exhaust and makeup air systems shall be electrically interlocked to insure that makeup air is provided whenever the exhaust system is in operation. Makeup air intake opening locations shall comply with Sections 401.5 and 401.5.1. A separate makeup air system shall be provided for the kitchen that supplies not less than 90 percent of the air to be exhausted.

**Exceptions:**

1. Where total makeup air for a system is less than 400 cfm; or
2. Where hoods are used to exhaust ventilation air that would otherwise exfiltrate or be exhausted by other mechanical exhaust systems and there is a direct path for air to flow from an area supplied by ventilation air to the kitchen hood.

Exterior windows and doors shall not be used to provide commercial kitchen makeup air.



1       **508.1.1 Makeup air temperature.** The temperature differential between makeup air and the  
2       air in the conditioned space shall not exceed 10°F (6°C) if the amount of makeup air supply  
3       exceeds 2,500 cfm (1180 L/s) per space.

4  
5       **Exceptions:**

- 6  
7           1. Makeup air that is part of the air-conditioning system.  
8  
9           2. Makeup air that does not decrease the comfort conditions of the occupied space.

10  
11       Section 33. Subsection 510.2 of the International Mechanical Code, 2003 Edition, is  
12       amended as follows:

13  
14       **510.2 Where required.** A hazardous exhaust system shall be required wherever operations  
15       involving the handling or processing of hazardous materials, in the absence of such exhaust  
16       systems and under normal operating conditions, have the potential to create one of the following  
17       conditions:

- 18           1. A flammable vapor, gas, fume, mist or dust is present in concentrations  
19           exceeding 25 percent of the lower flammability limit of the substance for the expected  
20           room temperature.  
21           2. A vapor, gas, fume, mist or dust with a health-hazard rating of 4 is present in any  
22           concentration.  
23           3. A vapor, gas, fume, mist or dust with a health-hazard rating of 1, 2 or 3 is present  
24           in concentrations exceeding 1 percent of the median lethal concentration of the  
25           substance for acute inhalation toxicity.



1 Laboratories are permitted to comply with rules promulgated by the building official and fire  
2 official in lieu of this section.

3  
4 **[F] 510.2.1 Lumber yards and woodworking facilities.** Equipment or machinery located  
5 inside buildings at lumber yards and woodworking facilities which generates or emits  
6 combustible dust shall be provided with an approved dust-collection and exhaust system  
7 installed in conformance with this section and the International Fire Code. Equipment and  
8 systems that are used to collect, process or convey combustible dusts shall be provided with an  
9 approved explosion-control system.

10  
11 **[F] 510.2.2 Combustible fibers.** Equipment or machinery within a building which generates or  
12 emits combustible fibers shall be provided with an approved dust-collecting and exhaust system.  
13 Such systems shall comply with this code and the International Fire Code.

14  
15  
16 Section 34. Subsection 510.7 of the International Mechanical Code, 2003 Edition, is  
17 amended as follows:

18  
19 **510.7 Suppression required.**

20  
21 **510.7.1 Ducts.** Ducts shall be protected with an approved automatic fire suppression  
22 system installed in accordance with the International Building Code.



1  
2 The termination point for exhaust ducts discharging to the atmosphere shall not be less than  
3 ((the following:

- 4  
5 1. ~~Ducts conveying explosive or flammable vapors, fumes or dusts: 30 feet (9144 mm)~~  
6 ~~from property line; 10 feet (3048 mm) from openings into the building; 6 feet (1829~~  
7 ~~mm) from exterior walls or roofs; 30 feet (9144 mm) from combustible walls or~~  
8 ~~openings into the building which are in the direction of the exhaust discharge; and 10~~  
9 ~~feet (3048 mm) above adjoining grade.~~  
10 2. ~~Other product conveying outlets: 10 feet (3048 mm) from property line; 3 feet (914 mm)~~  
11 ~~from exterior wall or roof; 10 feet (3048 mm) from openings into the building; and 10~~  
12 ~~feet (3048 mm) above adjoining grade.~~  
13 3. ~~Environmental air duct exhaust: 3 feet (914 mm) from property line; and 3 feet (914~~  
14 ~~mm) from openings into the building)) as required in Section 501.5.~~  
15

16 Section 35. Subsection 513.2 of the International Mechanical Code, 2003 Edition, is  
17 amended as follows:

18  
19 **[B] 513.2 General design requirements.** Buildings, structures, or parts thereof required by this  
20 code to have a smoke control system or systems shall have such systems designed in accordance  
21 with the applicable requirements of Section 909 of the *International Building Code* and the  
22 generally accepted and well-established principles of engineering relevant to the design. The  
23 construction documents shall include sufficient information and detail to describe adequately the  
24 elements of the design necessary for the proper implementation of the smoke control systems.  
25  
26  
27  
28

1 These documents shall be accompanied with sufficient information and analysis to demonstrate  
2 compliance with these provisions.

3  
4 See Seattle Building Code Section 909 for alternate design provisions.

5  
6 Section 36. Subsections 513.11 and 513.12 of the International Mechanical Code, 2003  
7 Edition, are amended as follows:

8  
9 **[B] 513.11 Power systems.** The smoke control system shall be supplied with two sources of  
10 power. Primary power shall be the normal building power systems. Secondary power shall be  
11 from an approved standby source complying with the ((ICC)) Seattle Electrical Code. The  
12 standby power source and its transfer switches shall be in a separate room from the normal  
13 power transformers and switch gear and shall be enclosed in a room constructed of not less than  
14 1-hour fire-resistance-rated fire barriers, ventilated directly to and from the exterior. Power  
15 distribution from the two sources shall be by independent routes. Transfer to full standby power  
16 shall be automatic and within 60 seconds of failure of the primary power. The systems shall  
17 comply with the ((ICC)) Seattle Electrical Code.

18  
19 **[B] 513.11.1 Power sources and power surges.** Elements of the smoke management  
20 system relying on volatile memories or the like shall be supplied with uninterruptible power  
21 sources of sufficient duration to span 15-minute primary power interruption. Elements of the  
22 smoke management system susceptible to power surges shall be suitably protected by  
23 conditioners, suppressors or other approved means.

1     **[B] 513.12 Detection and control systems.** Fire detection systems providing control input  
2     or output signals to mechanical smoke control systems or elements thereof shall comply  
3     with the requirements of Chapter 9 of the *International Building Code* and NFPA 72. Such  
4     systems shall be equipped with a control unit complying with UL 864 and listed as smoke  
5     control equipment.

6  
7     Control systems for mechanical smoke control systems shall include provisions for  
8     verification. Verification shall include positive confirmation of actuation, testing, manual  
9     override, the presence of power downstream of all disconnects and, through a  
10    preprogrammed weekly test sequence report, abnormal conditions audibly, visually and by  
11    printed report.

12  
13    ~~(**[B] 513.12.1 Wiring.** In addition to meeting the requirements of the *ICC Electrical Code*,~~  
14    ~~all wiring, regardless of voltage, shall be fully enclosed within continuous raceways.))~~

15  
16    **[F] 513.12.2 Activation.** Smoke control systems shall be activated in accordance with the  
17    *International Building Code*.

18  
19    **[F] 513.12.3 Automatic control.** Where completely automatic control is required or used,  
20    the automatic control sequences shall be initiated from an appropriately zoned automatic  
21    sprinkler system complying with Section 903.3.1.1 of the *International Fire Code* or from  
22    manual controls that are readily accessible to the fire department, and any smoke detectors  
23    required by engineering analysis.



1 Section 37. Subsection 514.1 of the International Mechanical Code, 2003 Edition, is  
2 amended as follows:

3  
4 **514.1 General.** Energy recovery ventilation systems shall be installed in accordance with this  
5 section. Where required for purposes of energy conservation, energy recovery ventilation  
6 systems shall also comply with the (~~International Energy Conservation Code~~) Washington  
7 State Energy Code with Seattle Amendments.

8  
9 Section 38. Subsections 601.2 and 601.3 of the International Mechanical Code, 2003  
10 Edition, are amended as follows:

11  
12 **[B] 601.2 Air movement in egress elements.** Exit access corridors shall not serve as supply,  
13 return, exhaust, relief or ventilation air ducts.

14  
15 **Exceptions:**

- 16 1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open  
17 directly onto such corridors, including toilet rooms, bathrooms, dressing rooms,  
18 smoking lounges and janitor closets, shall be permitted provided that each such  
19 corridor is directly supplied with (~~outdoor~~) air at a rate greater than the rate of  
20 makeup air taken from the corridor.  
21  
22 2. Where located within a dwelling unit, the use of corridors for conveying return air  
23 shall not be prohibited.  
24  
25  
26  
27  
28

1 3. Where located within tenant spaces of 1,000 square feet (93 m<sup>2</sup>) or less in area,  
2 utilization of corridors for conveying return air is permitted.

3  
4 [W] 4. Where such air is part of an engineered smoke control system.

5  
6 [W] 5. Corridors conforming to the *International Building Code* in Group I  
7 Occupancies.

8  
9 [W] 6. Corridors serving residential occupancies shall be permitted to be supplied  
10 without specific mechanical exhaust subject to the following:

11  
12 6.1 the supply air is one hundred percent outside air;

13  
14 6.2 The units served by the corridor have conforming ventilation independent of  
15 the air supplied to the corridor, and

16  
17 6.3 The duct penetration at the corridor walls shall be protected by approved fire  
18 and smoke dampers.

19  
20 6.4 For other than high-rise buildings, the supply fan will automatically shut off  
21 upon activation of corridor smoke detectors. Such corridor smoke detectors  
22 shall be spaced at no more than 30 feet (9,144 mm) on center along the  
23 corridor, or



1            6.5 For high-rise buildings, corridor smoke detector activation will close required  
2            smoke/fire dampers at the supply inlet to the corridor at the floor receiving the  
3            alarm.

4  
5 **601.3 Contamination prevention.** Exhaust ducts under positive pressure, chimneys, and vents  
6 shall not extend into or pass through ducts or plenums.

7  
8            [W] Exception: Exhaust ducts conveying environmental air may pass through a duct or  
9            plenum provided that:

10  
11            1. The duct is maintained under sufficient negative pressure to prevent leakage of the  
12            exhaust air to the surrounding duct or plenum; or

13  
14            2. If maintained under a positive pressure with respect to the surrounding duct or  
15            plenum, the exhaust duct will be sealed to prevent leakage; or

16  
17            3. The surrounding air stream is an exhaust air stream not intended for recirculation to  
18            the building and cross contamination of the two air streams will not create a  
19            hazardous condition.

20  
21            Section 39. Subsection 602.2 of the International Mechanical Code, 2003 Edition, is  
22 amended as follows:

23  
24 **602.2 Construction.** Plenum enclosures shall be constructed of materials permitted for the type  
25 of construction classification of the building.



1  
2 The use of gypsum boards to form plenums shall be limited to systems where the air  
3 temperatures do not exceed 125°F (52°C) and the building and mechanical system design  
4 conditions are such that the gypsum board surface temperature will be maintained above the  
5 airstream dew-point temperature as determined by the design engineer. Air plenums formed by  
6 gypsum boards shall not be incorporated in air-handling systems utilizing evaporative coolers.

7  
8 **602.2.1 Materials exposed within plenums.** Except as required by Sections 602.2.1.1  
9 through 602.2.1.5, materials exposed within plenums shall be noncombustible or shall have  
10 a flame spread index of not more than 25 and a smoke-developed index of not more than 50  
11 when tested in accordance with ASTM E 84.

12 **Exceptions:**

- 13 1. Rigid and flexible ducts and connectors shall conform to Section 603.  
14 2. Duct coverings, linings, tape and connectors shall conform to Sections 603 and  
15 604.  
16 3. This section shall not apply to materials exposed within plenums in one- and  
17 two-family dwellings.  
18 4. This section shall not apply to smoke detectors.  
19 5. Combustible materials enclosed in approved gypsum board assemblies or  
20 enclosed in materials listed and labeled for such application.  
21 6. Specialty drains and vents required for hazardous materials.

22  
23 **602.2.1.1 Wiring.** Combustible electrical or electronic wiring methods and materials,  
24 optical fiber cable, and optical fiber raceway exposed within a plenum shall have a peak  
25 optical density not greater than 0.50, an average optical density not greater than 0.15, and  
26



1 a flame spread not greater than 5 feet (1524 mm) when tested in accordance with NFPA  
2 262. Only type OFNP (plenum rated nonconductive optical fiber cable) shall be installed  
3 in plenum-rated optical fiber raceways. Wiring, cable, and raceways addressed in this  
4 section shall be listed and labeled as plenum rated and shall be installed in accordance  
5 with ((~~ICC~~)) Seattle Electrical Code.

6  
7 **602.2.1.2 Fire sprinkler piping.** Plastic fire sprinkler piping exposed within a plenum  
8 shall be used only in wet pipe systems and shall have a peak optical density not greater  
9 than 0.50, an average optical density not greater than 0.15, and a flame spread of not  
10 greater than 5 feet (1524 mm) when tested in accordance with UL 1887. Piping shall be  
11 listed and labeled.

12  
13 **602.2.1.3 Pneumatic tubing.** Combustible pneumatic tubing exposed within a plenum  
14 shall have a peak optical density not greater than 0.50, an average optical density not  
15 greater than 0.15, and a flame spread of not greater than 5 feet (1524 mm) when tested in  
16 accordance with UL 1820. Combustible pneumatic tubing shall be listed and labeled.

17  
18 **602.2.1.4 Combustible electrical equipment.** Combustible electrical equipment  
19 exposed within a plenum shall have a peak rate of heat release not greater than 100  
20 kilowatts, a peak optical density not greater than 0.50 and an average optical density not  
21 greater than 0.15 when tested in accordance with UL 2043. Combustible electrical  
22 equipment shall be listed and labeled.

23  
24 **602.2.1.5 Foam plastic insulation.** Foam plastic insulation used as wall or ceiling finish  
25 in plenums shall exhibit a flame spread index of 75 or less and a smoke developed index  
26

1 of 450 or less when tested in accordance with ASTM E 84 and shall also comply with  
2 Section 602.2.1.5.1, 602.2.1.5.2 or 602.2.1.5.3.

3  
4 **602.2.1.5.1 Separation required.** The foam plastic insulation shall be separated  
5 from the plenum by a thermal barrier complying with Section 2603.4 of the  
6 *International Building Code*.

7  
8 **602.2.1.5.2 Approval.** The foam plastic insulation shall be approved based on tests  
9 conducted in accordance with Section 2603.8 of the *International Building Code*.

10  
11 **602.2.1.5.3 Covering.** The foam plastic insulation shall be covered by corrosion-  
12 resistant steel having a base metal thickness of not less than 0.0160 inch (0.4 mm).

13  
14 Section 40. Subsection 603.5 of the International Mechanical Code, 2003 Edition, is  
15 amended as follows:

16  
17 **603.5 Nonmetallic ducts.** Nonmetallic ducts shall be constructed with Class 0 or Class 1 duct  
18 material in accordance with UL 181. Fibrous duct construction shall conform to the SMACNA  
19 *Fibrous Glass Duct Construction Standards* or NAIMA *Fibrous Glass Duct Construction*  
20 *Standards*. The maximum air temperature within nonmetallic ducts shall not exceed 250°F  
21 (121°C).

22  
23 **603.5.1 Gypsum ducts.** The use of gypsum boards to form air shafts (ducts) shall be limited  
24 to return air systems where the air temperatures do not exceed 125°F (52°C) and the gypsum  
25 board surface temperature is maintained above the airstream dew-point temperature as



1 determined by the design engineer. Air ducts formed by gypsum boards shall not be  
2 incorporated in air-handling systems utilizing evaporative coolers.

3  
4 **Exceptions:**

5  
6 1. Gypsum boards coated on the inside with epoxy paint may be used for supply air  
7 ducts.

8  
9 2. Foil-backed gypsum boards may be used for supply air ducts.

10  
11 3. Gypsum boards may be used for ducts that are used only for stairway or elevator  
12 pressurization air.

13  
14 Section 41. Subsections 603.9 and 603.10 of the International Mechanical Code, 2003  
15 Edition, are amended as follows:

16  
17 **603.9 Joints, seams and connections.** All longitudinal and transverse joints, seams and  
18 connections in metallic and nonmetallic ducts shall be constructed as specified in SMACNA  
19 *HVAC Duct Construction Standards—Metal and Flexible* and SMACNA *Fibrous Glass Duct*  
20 *Construction Standards* or NAIMA *Fibrous Glass Duct Construction Standards*. All  
21 longitudinal and transverse joints, seams and connections shall be sealed in accordance with the  
22 ~~*(International Energy Conservation Code)*~~ *Washington State Energy Code with Seattle*  
23 *Amendments.*

1 **603.10 Supports.** Ducts shall be supported with approved hangers at intervals not exceeding 10  
2 feet (3048 mm) or by other approved duct support systems designed in accordance with the  
3 *International Building Code*. Flexible and other factory-made ducts shall be supported in  
4 accordance with the manufacturer's installation instructions.

5  
6 **603.10.1 Seismic Bracing of Ducts.** Longitudinal and transverse bracing shall be required  
7 for ducts 6 square feet (.56 m<sup>2</sup>) and larger, including round ducts with a diameter of 34  
8 inches (864 mm) or more, and on all duct systems used for life safety and smoke control  
9 installed in either the horizontal or vertical position.

10  
11 **603.10.1.1 Transverse Bracing.** Transverse bracing shall occur at maximum  
12 intervals of 30 feet (9144 mm), at each duct turn and at the end of a duct run. Walls,  
13 including non-bearing fixed partitions, which have ducts running through them may  
14 replace a transverse brace.

15 **603.10.1.2 Longitudinal Bracing.** Longitudinal bracing shall occur at maximum  
16 intervals of 60 feet (18 288 mm). Transverse bracing for one duct section may also  
17 act as a longitudinal bracing for a duct section connected perpendicular to it, if  
18 bracing is installed within four feet (1219 mm) of the intersection and sized and  
19 installed on the larger duct.

20  
21 **603.10.2 Grouping of Ducts.** Groups of ducts may be combined in a larger size frame using  
22 overall dimensions and maximum weight of ducts. At least 2 sides of each duct must be  
23 connected to the angles of the brace.

1 **603.10.3 Seismic Loads.** Bracing for ducts shall be designed to resist seismic loading, using  
2 accepted engineering practices and Chapter 16 of the Building Code.

3  
4 **Exception:** No bracing is required if the duct is suspended by hangers 12 inches (305  
5 mm) or less in length as measured from the top of the duct to the bottom of the support  
6 where the hanger is attached. Hangers must be positively attached to the duct within 2  
7 inches (51 mm) of the top of the duct with a minimum of two #10 sheet metal screws.

8  
9 **Interpretation:** Duct bracing that complies with the SMACNA guideline "Seismic Restraint  
10 Manual Guidelines for Mechanical Systems" shall be deemed to comply with Section 603.10.1.

11  
12 Section 42. Subsections 603.14 and 603.15 of the International Mechanical Code, 2003  
13 Edition, are amended as follows:

14  
15 **603.14 Location.** Ducts shall not be installed in or within 4 inches (102 mm) of the earth,  
16 except where such ducts comply with Section ((603-7)) 603.8.

17  
18 **603.15 Mechanical protection.** Ducts installed in locations where they are exposed to  
19 mechanical damage by vehicles or from other causes shall be protected by approved barriers.  
20 Ducts in pedestrian pathways in parking garages shall not interfere with the headroom  
21 requirements specified by the *International Building Code*.

22  
23 Section 43. Subsection 604.1 of the International Mechanical Code, 2003 Edition, is  
24 amended as follows:

1 **604.1 General.** Duct insulation shall conform to the requirements of ((Sections 604.2 through  
2 604.13 and the *International Energy Conservation Code*)) the Washington State Energy Code  
3 with Seattle Amendments.

4  
5 Section 44. Subsection 606.2 of the International Mechanical Code, 2003 Edition, is  
6 amended as follows:

7  
8 **606.2 Where required.** Smoke detectors shall be installed where indicated in Sections 606.2.1  
9 through 606.2.3.

10  
11 **Exception:** Smoke detectors shall not be required where air distribution systems are  
12 incapable of spreading smoke beyond the enclosing walls, floors and ceilings of the room or  
13 space in which the smoke is generated.

14  
15 **606.2.1 Return air systems.** Smoke detectors shall be installed in return air systems with a  
16 design capacity greater than 2,000 cfm (0.9 m<sup>3</sup>/s), in the return air duct or plenum upstream  
17 of any filters, exhaust air connections, outdoor air connections, or decontamination  
18 equipment and appliances.

19  
20 **Exception:** Smoke detectors are not required in the return air system where all portions  
21 of the building served by the air distribution system are protected by area smoke  
22 detectors connected to a fire alarm system in accordance with the *International Fire*  
23 *Code*. The area smoke detection system shall comply with Section 606.4.

1 **606.2.2 Common supply and return air systems.** Where multiple air-handling systems  
2 share common supply or return air ducts or plenums with a combined design capacity greater  
3 than 2,000 cfm (0.9 m<sup>3</sup>/s), the return air system shall be provided with smoke detectors in  
4 accordance with Section 606.2.1.

5  
6 **Exception:** Individual smoke detectors shall not be required for each fan-powered  
7 terminal unit, provided that such units do not have an individual design capacity greater  
8 than 2,000 cfm (0.9 m<sup>3</sup>/s) and will be shut down by activation of one of the following:

- 9  
10 1. Smoke detectors required by Sections 606.2.1 and 606.2.3.  
11  
12 2. An approved area smoke detector system located in the return air plenum serving  
13 such units.  
14  
15 3. An area smoke detector system as prescribed in the exception to Section 606.2.1.

16  
17 In all cases, the smoke detectors shall comply with Sections 606.4 and 606.4.1.

18  
19 **606.2.3 Return air risers.** Where return air risers serve two or more stories and serve any  
20 portion of a return air system having a design capacity greater than 15,000 cfm (7.1 m<sup>3</sup>/s),  
21 smoke detectors shall be installed at each story. Such smoke detectors shall be located  
22 upstream of the connection between the return air riser and any air ducts or plenums.  
23  
24  
25  
26  
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28

1 **Interpretation:** The fan-powered terminal units may be shut down by the building automation  
2 system upon activation of smoke detection described in Section 606.2.2 items 1, 2, or 3. The  
3 building automation system is not required to be listed as a smoke control system, nor comply  
4 with UL Standard 864 Standard for Control Units and Accessories for Fire Alarm Systems.

5  
6 Section 45. Subsection 606.4 of the International Mechanical Code, 2003 Edition, is  
7 amended as follows:

8  
9 **606.4 Controls operation.** Upon activation, the smoke detectors shall shut down the air  
10 distribution system. Air distribution systems that are part of a smoke control system shall switch  
11 to the smoke control mode upon activation of a detector.

12  
13 **606.4.1 Supervision.** The duct smoke detectors shall be connected to the building's fire  
14 alarm control panel as a supervisory signal when a fire alarm system is provided. Duct  
15 detectors shall not activate a fire alarm signal. The actuation of a duct smoke detector shall  
16 activate a visible and audible supervisory signal at a constantly attended location.

17  
18 **Exceptions:**

- 19  
20 1. The supervisory signal at a constantly attended location is not required where the  
21 duct smoke detectors ~~((activates the building's alarm-indicating appliances))~~ are  
22 monitored by a central station alarm service.  
23  
24 2. In occupancies not required to be equipped with a fire alarm system, actuation of  
25 a smoke detector shall activate a visible and an audible signal in an approved  
26

1 location. Duct smoke detector trouble conditions shall activate a visible or  
2 audible signal in an approved location and shall be identified as air duct detector  
3 trouble.

4  
5 Section 46. Subsection 801.1 of the International Mechanical Code, 2003 Edition, is  
6 amended as follows:

7  
8 **801.1 Scope.** This chapter shall govern the installation, maintenance, repair and approval of  
9 factory-built chimneys, chimney liners, vents and connectors. This chapter shall also govern the  
10 utilization of masonry chimneys. Gas-fired appliances shall be vented in accordance with the  
11 International Fuel Gas Code. Hoistway venting requirements shall be in accordance with the  
12 International Building Code.

13  
14 Section 47. Subsection 908.5 of the International Mechanical Code, 2003 Edition, is  
15 amended as follows:

16  
17 **908.5 Water supply.** Water supplies and protection shall be as required by the ((*International*))  
18 Uniform Plumbing Code.

19  
20 Section 48. Subsection 1101.4 of the International Mechanical Code, 2003 Edition, is  
21 amended as follows:

22  
23 **1101.4 Water connection.** Water supply and discharge connections associated with  
24 refrigeration systems shall be made in accordance with this code and the ((*International*))  
25 Uniform Plumbing Code.



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Section 49. Subsection 1105.3 of the International Mechanical Code, 2003 Edition, is amended as follows:

**[F] 1105.3 Refrigerant detectors.** Refrigerant detectors (~~in machinery rooms~~) shall be provided in rooms or spaces that contain quantites of refrigerant in excess of the quantities in IMC Table 1103.1 as ((required by the *International Fire Code.*) follows.

**[F] 1105.3.1 Within machinery rooms.** Machinery rooms shall contain a refrigerant detector connected to an alarm system utilizing listed and approved fire alarm signaling devices capable of generating a sound level, distinctive from other alarm signals, of at least 15dB above the operating ambient sound pressure level of the space in which they are installed and initiating an approved distinctive visual alarm.

Where continuous mechanical ventilation is provided, failure of the ventilation system shall activate an audible and visual alarm.

The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate.

The alarm shall be actuated at a value not greater than the corresponding TLV-TWA values shown in the *International Mechanical Code* for the refrigerant classification.

**Exception:** Machinery room vapor detectors for ammonia systems shall actuate an alarm at a detection level not to exceed 1,000 ppm and shall automatically exhaust air from the



1 machinery room in accordance with the *International Mechanical Code* Section  
2 1105.6.4 for emergency conditions.

3  
4 Detectors and alarms shall be placed in approved locations.

5  
6 [F] 1105.3.2 Outside of machinery rooms. Where evaporators and piping containing  
7 refrigerants are located within rooms or spaces used exclusively for processing or  
8 storage of materials under refrigerated conditions, the refrigerated room or space shall be  
9 equipped with a refrigerant-vapor detector and alarm system complying with Section  
10 1105.3.1.

11  
12 Activation of the refrigerant detector shall also automatically stop the flow of refrigerant  
13 to evaporators within the space and stop the flow of refrigerant in all supply lines leaving  
14 a machinery room whenever the refrigerant vapor concentration is detected at or above  
15 50 percent of the IDLH or 25 percent of the LFL, whichever is lower.

16  
17 Section 50. Subsections 1105.6 and 1105.7 of the International Mechanical Code, 2003  
18 Edition, are amended as follows:

19  
20 **1105.6 Ventilation.** Machinery rooms shall be continuously mechanically ventilated to the  
21 outdoors. Mechanical ventilation shall be capable of exhausting the minimum quantity of air  
22 both at normal operating and emergency conditions. Multiple fans or multispeed fans shall be  
23 allowed in order to produce the emergency ventilation rate and to obtain a reduced airflow for  
24 normal ventilation.



1 **Interpretation:** The requirement for continuous mechanical ventilation to the outdoors means  
2 that fire dampers are not allowed on machinery room ventilation ducts.

3  
4 **Exception:** Where a refrigerating system is located outdoors more than 20 feet (6096 mm)  
5 from any building opening and is enclosed by a penthouse, lean-to or other open structure,  
6 natural or mechanical ventilation shall be provided. Location of the openings shall be based  
7 on the relative density of the refrigerant to air. The free-aperture cross section for the  
8 ventilation of the machinery room shall be not less than:

9  $F = \sqrt{G}$  (Equation 11-1)

10 For SI :

11  $F = 0.138\sqrt{G}$

where:

12  $F$  = The free opening area in square feet ( $m^2$ )

13  $G$  = The mass of refrigerant in pounds (kg) in the largest system, any part of which is located  
14 in the machinery room.

15  
16 **1105.6.1 Discharge location.** The discharge of the air shall be to the outdoors in accordance  
17 with Chapter 5. Exhaust from mechanical ventilation systems shall be discharged not less  
18 than 20 feet (6096 mm) from a property line or openings into buildings.

19  
20 **1105.6.2 Make-up air.** Provisions shall be made for make-up air to be drawn from the  
21 outside to replace that being exhausted. Openings for make-up air shall be located to avoid  
22 intake of exhaust air. Supply and exhaust ducts to the machinery room shall serve no other  
23 area, shall be constructed in accordance with Chapter 5 and shall be covered with corrosion-  
24 resistant screen of not less than 1/4-inch (6.4 mm) mesh.



1 **1105.6.3 Quantity—normal ventilation.** (~~During occupied conditions, t~~) The mechanical  
2 ventilation system shall exhaust the larger of the following:

3  
4 1. Not less than 0.5 cfm per square foot ( $0.0025 \text{ m}^3/\text{s m}^2$ ) of machinery room area or 20  
5 cfm ( $0.009 \text{ m}^3/\text{s}$ ) per person; or

6  
7 2. A volume required to limit the room temperature rise to  $18^\circ\text{F}$  ( $10^\circ\text{C}$ ) taking into  
8 account the ambient heating effect of all machinery in the room.

9  
10 **1105.6.4 Quantity—emergency conditions.** Upon actuation of the refrigerant detector  
11 required in Section 1105.3, the mechanical ventilation system shall exhaust air from the  
12 machinery room in the following quantity:

13  $Q = 100\sqrt{G}$

(Equation 11-2)

14 For SI :  $Q = 0.07\sqrt{G}$

15  
16  
17 where:

18  $Q$  = The airflow in cubic feet per minute ( $\text{m}^3/\text{s}$ ).

19  $G$  = The design mass of refrigerant in pounds (kg) in the largest system, any part of which is  
20 located in the machinery room.

21  
22 **[F] 1105.6.5 Standby source of power required.** When treatment, detection, continuous  
23 ventilation or alarm systems are required, such systems shall be connected to a standby  
24 source of power to supply electrical power in the event of loss of power from the primary  
25  
26  
27  
28



1 source. See the *International Fire Code* Section 606 and Chapter 27 and the *Seattle*  
2 *Electrical Code* Article 701.

3  
4 **1105.7 Termination of relief devices.** Pressure relief devices, fusible plugs and purge systems  
5 located within the machinery room shall terminate outside of the structure at a location not less  
6 than 15 feet (4572 mm) above the adjoining grade level and not less than 20 feet (6096 mm)  
7 from any window, ventilation opening or exit.

8  
9 For additional requirements regarding termination of relief devices for flammable  
10 refrigerants, toxic and highly toxic refrigerants, ammonia refrigerant, treatment systems, flaring  
11 systems, and ammonia diffusion systems, see Section 606.11 of the *International Fire Code*.

12  
13 Section 51. Subsections 1106.3 and 1106.4 of the International Mechanical Code, 2003  
14 Edition, are amended as follows:

15  
16 **1106.3 Ammonia room ventilation.** Ventilation systems in ammonia machinery rooms shall be  
17 operated continuously at the normal ventilation rate determined by Section 1105.6.3.

18  
19 **Exception((s:**

- 20  
21 ~~1. Machinery rooms equipped with a vapor detector that will automatically start the~~  
22 ~~ventilation system and actuate an alarm at a detection level not to exceed 1,000 ppm~~

23 ~~;~~

1           2.)) Machinery rooms conforming to the Class 1, Division 2, hazardous location  
2           classification requirements of ((NFPA 70)) the Seattle Electrical Code.

3  
4 **1106.4 Flammable refrigerants.** Where refrigerants of Groups A2, A3, B2 and B3 are used, the  
5 machinery room shall conform to the Class 1, Division 2, hazardous location classification  
6 requirements of ((NFPA 70)) the Seattle Electrical Code.

7  
8           **Exception:** Ammonia machinery rooms, but not including ventilation fan motors.

9  
10           Section 52. A new subsection 1106.7 is added to the Seattle Mechanical Code, 2003  
11 Edition, as follows:

12  
13 **[F] 1106.7 Alarm activation.** Where continuous ventilation is provided, failure of the  
14 ventilation system shall automatically activate an audible and visual alarm.

15  
16           Section 53. Subsection 1107.4 of the International Mechanical Code, 2003 Edition, is  
17 amended as follows:

18  
19 **1107.4 Materials for refrigerant pipe and tubing.** Piping materials shall be as set forth in  
20 Sections 1107.4.1 through 1107.4.5.

21  
22           **1107.4.1 Steel pipe.** Carbon steel pipe with a wall thickness not less than Schedule 80 shall  
23 be used for Group A2, A3, B2 or B3 refrigerant liquid lines for sizes 1.5 inches (38 mm) and  
24 smaller. Carbon steel pipe with a wall thickness not less than Schedule 40 shall be used for  
25 Group A1 or B1 refrigerant liquid lines 6 inches (152 mm) and smaller, Group A2, A3, B2

1 or B3 refrigerant liquid lines sizes 2 inches (51 mm) through 6 inches (152 mm) and all  
2 refrigerant suction and discharge lines 6 inches (152 mm) and smaller. (~~Type F steel pipe~~  
3 ~~shall not be used for r~~) Refrigerant lines having an operating temperature less than -20°F (-  
4 29°C) shall be designed to meet the requirements of ASME B31.5 - 2001, Refrigeration  
5 Piping and Heat Transfer.

6  
7 **1107.4.2 Copper and brass pipe.** Standard iron-pipe size, copper and red brass (not less  
8 than 80-percent copper) pipe shall conform to ASTM B 42 and ASTM B 43.

9  
10 **1107.4.3 Copper tube.** Copper tube used for refrigerant piping erected on the premises shall  
11 be seamless copper tube of Type ACR (hard or annealed) complying with ASTM B 280.  
12 Where approved, copper tube for refrigerant piping erected on the premises shall be  
13 seamless copper tube of Type K, L or M (drawn or annealed) in accordance with ASTM B  
14 88. Annealed temper copper tube shall not be used in sizes larger than a 2-inch (51 mm)  
15 nominal size. Mechanical joints shall not be used on annealed temper copper tube in sizes  
16 larger than 7/8-inch (22.2 mm) OD size.

17  
18 **1107.4.4 Copper tubing joints.** Copper tubing joints used in refrigerating systems  
19 containing Group A2, A3, B2 or B3 refrigerants shall be brazed. Soldered joints shall not be  
20 used in such refrigerating systems.

21  
22 **1107.4.5 Aluminum tube.** Type 3003-0 aluminum tubing with high-pressure fittings shall  
23 not be used with methyl chloride and other refrigerants known to attack aluminum.



1 Section 54. Subsection 1107.7 of the International Mechanical Code, 2003 Edition, is  
2 amended as follows:

3  
4 **1107.7 Stop valves.** All systems containing more than 6.6 pounds (3 kg) of a refrigerant in  
5 systems using positive-displacement compressors shall have stop valves installed as follows:

- 6  
7 1. At the inlet of each compressor, compressor unit or condensing unit.  
8  
9 2. At the discharge outlet of each compressor, compressor unit or condensing unit and of  
10 each liquid receiver.

11  
12 **Exceptions:**

- 13  
14 1. Systems that have a refrigerant pumpout function capable of storing the entire  
15 refrigerant charge in a receiver or heat exchanger.  
16  
17 2. Systems that are equipped with provisions for pumpout of the refrigerant using either  
18 portable or permanently installed recovery equipment.  
19  
20 3. Self-contained systems.

21  
22 **1107.7.1 Liquid receivers.** All systems containing 100 pounds (45 kg) or more of a  
23 refrigerant, other than systems utilizing nonpositive displacement compressors, shall have  
24 stop valves, in addition to those required by Section 1107.7, on each inlet of each liquid  
25  
26  
27  
28



1 receiver. Stop valves shall not be required on the inlet of a receiver in a condensing unit, nor  
2 on the inlet of a receiver which is an integral part of the condenser.

3  
4 Ammonia systems shall be provided with liquid receivers designed for pumpdown that  
5 have sufficient capacity to assure that the liquid does not occupy more than 90% of the  
6 volume of the receiver at 90°F.

7  
8 **1107.7.2 Copper tubing.** Stop valves used with soft annealed copper tubing or hard-drawn  
9 copper tubing 7/8-inch (22.2 mm) OD standard size or smaller shall be securely mounted,  
10 independent of tubing fastenings or supports.

11  
12 **1107.7.3 Identification.** Stop valves shall be identified where their intended purpose is not  
13 obvious. Numbers shall not be used to label the valves, unless a key to the numbers is  
14 located near the valves.

15  
16 Section 55. Chapter 15 of the International Mechanical Code, 2003 Edition, is amended by  
17 adding the following referenced standard.

18  
19 ASME B31.5 – 2001 Refrigeration Piping and Heat Transfer

20  
21 Section 56. The Director of the Department of Planning and Development shall for a  
22 period of 60 days following the effective date of this ordinance, approve applications that  
23 comply with either the requirements of this Ordinance or with the provisions of Ordinance  
24 119080 as amended by Ordinance 120380.

1 Section 57. This ordinance shall take effect and be in force thirty (30) days from and  
2 after its approval by the Mayor, but if not approved and returned by the Mayor within ten (10)  
3 days after presentation, it shall take effect as provided by Municipal Code Section 1.04.020.

4 Passed by the City Council the 6<sup>th</sup> day of July, 2004, and signed by me in  
5 open session in authentication of its passage this 6<sup>th</sup> day of July, 2004.

6  
7   
8 President ~~pro tem~~ of the City Council

9 Approved by me this 16 day of July, 2004.

10   
11 Gregory J. Nickels, Mayor

12 Filed by me this 16 day of July, 2004.

13   
14 City Clerk

15 (Seal)  
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**FISCAL NOTE FOR NON-CAPITAL PROJECTS**

<b>Department:</b>	<b>Contact Person/Phone:</b>	<b>DOF Analyst/Phone:</b>
Planning and Development	Maureen Traxler/233-3892	Barbara Gangwer/616-0768

**Legislation Title:**

An ordinance relating to Building and Construction Codes: amending Chapter 22.400 of the Seattle Municipal Code, the Seattle Mechanical Code; adopting Chapters 2 through 9, Chapter 11, and Chapters 13 through 15 of the 2003 International Mechanical Code; amending Chapter 2, Definitions; Chapter 3, General Regulations; Chapter 4, Ventilation; Chapter 5, Exhaust Systems; Chapter 6, Duct Systems; Chapter 8, Chimneys and Vents; Chapter 9, Specific Appliances, Fireplaces and Solid Fuel Burning Equipment; Chapter 11, Refrigeration; and Chapter 15, Referenced Standards; adding a new Chapter 1 related to administration, permitting and enforcement; and repealing the 1997 Seattle Mechanical Code.

• **Summary of the Legislation:**

Adopts 2003 International Mechanical Code with Seattle amendments.

• **Background:**

This bill is one of six related ordinances that adopt the International Building, Residential, Mechanical, Fuel Gas, and Fire codes, and Seattle amendments to the Washington State Energy Code. The International Codes are model codes adopted pursuant to RCW 19.27.031. DPD is proposing amendments to the Building, Residential, Mechanical and Fuel Gas codes; the Fire Department is proposing amendments to the Fire Code.

This ordinance has been reviewed by the Construction Codes Advisory Board and other industry experts. Most of the proposed amendments are currently in force as part of the 1997 Seattle Mechanical Code, which will be replaced by this ordinance and the Fuel Gas Code.

Adoption will have minimal fiscal impact on the City, but will have variable impact on the cost of construction for property owners and developers.

**X This legislation does not have any financial implications.**



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STATE OF WASHINGTON – KING COUNTY

--SS.

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174856  
CITY OF SEATTLE, CLERKS OFFICE

No. ORDINANCE IN FULL

**Affidavit of Publication**

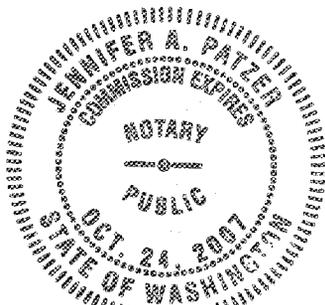
The undersigned, on oath states that he is an authorized representative of The Daily Journal of Commerce, a daily newspaper, which newspaper is a legal newspaper of general circulation and it is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continuously as a daily newspaper in Seattle, King County, Washington, and it is now and during all of said time was printed in an office maintained at the aforesaid place of publication of this newspaper. The Daily Journal of Commerce was on the 12<sup>th</sup> day of June, 1941, approved as a legal newspaper by the Superior Court of King County.

The notice in the exact form annexed, was published in regular issues of The Daily Journal of Commerce, which was regularly distributed to its subscribers during the below stated period. The annexed notice, a

CT:121523 ORD IN FULL

was published on

7/23/2004



Affidavit of Publication

*Phil Don*

Subscribed and sworn to before me on

7/23/2004

*Jennifer A. Patzer*

Notary public for the State of Washington,  
residing in Seattle

# City of Seattle

## ORDINANCE 121523

AN ORDINANCE relating to Building and Construction Codes: amending Chapter 22.400 of the Seattle Municipal Code, the Seattle Mechanical Code; adopting Chapters 2 through 9, Chapter 11, and Chapters 13 through 15 of the 2003 International Mechanical Code; amending Chapter 2, Definitions; Chapter 3, General Regulations; Chapter 4, Ventilation; Chapter 5, Exhaust Systems; Chapter 6, Duct Systems; Chapter 8, Chimneys and Vents; Chapter 9, Specific Appliances, Fireplaces and Solid Fuel Burning Equipment; Chapter 11, Refrigeration; and Chapter 15, Referenced Standards; adding a new Chapter 1 related to administration, permitting and enforcement; and repealing the 1997 Seattle Mechanical Code.

### BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Section 22.400.010 of the Seattle Municipal Code is amended as follows:

**SMC 22.400.010 Adoption of ((Uniform)) International Mechanical Code.** The Seattle Mechanical Code shall consist of the following portions of the ((1997)) 2003 edition of the ((Uniform)) International Mechanical Code as published by the International ((Conference of Building Officials)) Code Council, together with the amendments and additions thereto adopted: Chapters 2 through 9, Chapters 11, and Chapters 13 through 15 ((and 16 and the Uniform Mechanical Code standards contained in Appendix A)). One copy of the ((1997 Uniform)) 2003 International Mechanical Code is filed with the City Clerk in C. F. ((302708))

Section 2. The 1997 Seattle Mechanical Code adopted by Ordinance 119080 and amended by Ordinance 120380 is hereby repealed.

Section 3. Chapter 1 of the Seattle Mechanical Code is adopted to read as follows:

### CHAPTER 1 ADMINISTRATION SECTION 101 TITLE

These regulations shall be known as the "Seattle Mechanical Code," may be cited as such, and will be referred to herein as "this code." All references to the *International Mechanical Code* contained in this code shall mean the *Seattle Mechanical Code*.

### SECTION 102 PURPOSE

The purpose of this code is to provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation, and maintenance or use of heating, ventilating, cooling, refrigeration systems, incinerators and other miscellaneous heat-producing appliances within the City.

The purpose of this code is to provide for and promote the health, safety and welfare of the general public, and not to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefited by the terms of this code.

### SECTION 103 SCOPE

**103.1 Applicability.** The provisions of this code shall apply to the erection, installation, alteration, repair, relocation, replacement, addition to, use or maintenance of any heating, ventilating, cooling, refrigeration systems, incinerators or other miscellaneous heat-producing appliances within the City. The design and testing of equipment regulated by this code shall be

**104.2 Existing Installations.** Mechanical systems adopted of this code may have their use, maintenance or component replacement continued if the use, maintenance or component replacement is in accordance with this code and no hazard to life, health or property has been created.

**104.3 Changes in Building Occupancy.** Mechanical systems in a building or structure undergoing a change in use or occupancy shall comply with all requirements of this code which apply to the new occupancy.

**104.4 Maintenance.** All mechanical systems, new and old, and all parts thereof shall be maintained in accordance with the original design and in a safe and hazard-free condition. The owner or the owner's designated agent shall be responsible for the maintenance of mechanical systems and equipment. To determine if mechanical systems and equipment installed in a building comply with the requirements of this code, the code official may cause a mechanical system or equipment to be inspected.

The Fire Chief and the code official shall each be responsible for the enforcement of the requirements of this subsection.

**Exception:** The code official may modify the requirements of this subsection if a portion of the building is unoccupied.

**104.5 Moved Buildings.** Building or structures not in compliance with the standards adopted by the code official. No building shall be moved unless, prior to moving, the code official has inspected the building and the permit holder has agreed to correct all violations. A bond or cash deposit for the building permit for the work. A bond or cash deposit for the building permit shall be posted prior to issuing a building permit for the work. Any moved building found to be a public nuisance may be abated.

**104.6 Historic Buildings and Structures.** The code official may, in the opinion of the code official, will result in a reasonable number of occupants of those buildings.

A historic building or structure is one which has been designated as a City Landmarks Preservation Board or the State of Washington, or is determined eligible to be listed, in the National Register of Historic Places, or is a structure contributing to the historic character of a landmark or special review district.

### SECTION ALTERNATE MATERIALS AND METHODS

This code does not prevent the use of any material, method, or equipment specifically allowed or prohibited by this code, provided that the use of such material, method, or equipment does not result in a lower level of safety or health than that required by this code.