

Chapter 19.07

MECHANICAL CODE*

* **Editors Note:** Serial No. 2004-31, § 1, adopted Oct. 11, 2004 amended Title 19 in its entirety. Serial No. 2006-19, adopted May 23, 2006 further amended Title 19 to read as herein set out. See the editor's note at Tit. 19 and also the Code Comparative Table for a detailed analysis of inclusion.

Charter References: Technical code adoption, § 5.5.

Cross References: General right of entry for inspection, CBJ Code ch. 01.35; code enforcement, CBJ Code ch. 03.30.

State Law References: Similar provisions, 13 AAC 50.023.

Note: State Fire Marshal required changes are designated by "(SFM)". 18.70.010

19.07.010 International mechanical code (IMC) adopted.

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19.07.1401 Solar systems.

19.07.Ch 15 Referenced standards.

19.07.IMC_Appendix_A Combustion air openings and chimney connection pass-throughs.

19.07.IMC_Appendix_B Recommended permit fee schedule.

19.07.010 International mechanical code (IMC) adopted.

For the purpose of regulating the erection, installation, alterations, repair, relocation, replacement, addition to, use, design, quality of materials, location and maintenance of heating, ventilating, cooling and refrigeration systems, incinerators, and other miscellaneous heat-producing appliances within and without all buildings and structures and portions thereof within the City and Borough, there is adopted by reference as the mechanical code of the City and Borough that compilation of rules and regulations prepared and published by the International Code Council, a nationally recognized technical trade organization, which compilation is entitled "International Mechanical Code, 2003 Edition," (IMC) and five copies each of which have been filed in the office of the municipal clerk of the City and Borough or at such other places designated by the municipal clerk, for public use, inspection and examination and which compilation is made a part of this chapter as if fully set forth in this section, subject only to the enumerated additions, deletions and changes in this chapter.
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.100 Accessibility.

Delete IMC Chapter 1, except as referred to elsewhere in this code, and add the following:

"Chapter 1, Accessibility. When buildings or facilities (or portions thereof) are covered by IBC Chapter 11, Accessibility, installations such as switches and controls, receptacles, signage, elevators and lifts, protective signaling systems, alarm systems, telephone listening devices and other operable equipment and the height of operable parts such as receptacles, switches, thermostats, panelboards, controls and other operable equipment shall meet or exceed the requirements of ICC/ANSI A117.1-2003."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.202 Definitions.

Add the following definitions:

"HEAT RECOVERY DEVICE. An assembly containing a heat recovery element."

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

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.303.3 Prohibited locations.

Insert the words "tightly gasketed" before "solid" to read "tightly gasketed solid door."

Delete the words "weather stripped in accordance with the exterior door air leakage"

requirements of the International Energy Conservation Code and." from the third exception.
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.304.7 Clearances to combustible construction.

Delete section 304.7 and add the following:

"304.7 Clearances to combustible construction. Heat-producing equipment and appliances shall be installed to maintain the required clearances to combustible construction as specified in the listing and manufacturer's instructions. Such clearances shall be reduced only in accordance with Section 308. Certain unlisted, heat-producing equipment shall be allowed provided it is installed in a manner so as to maintain the clearances to combustible construction specified in Tables 304.7 and 304.8. Clearances to combustibles shall include such considerations as door swing, drawer pull, overhead projections or shelving and window swing, shutters, coverings and drapes. Devices such as doorstops or limits, closers, drapery ties or guards shall not be used to provide the required clearances." (SFM)

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.Table 304.7 Standard installation clearances, in inches for certain unlisted heat-producing appliances.

Insert table as follows: (SFM)

Table 304.7 Standard Installation Clearances, In Inches For Certain Unlisted Heat-Producing Appliances

Appliances	Fuel	Above Top Of Casing Or Appliance	From Top and Sides of Warm-air Bonnet or Plenum	From Front (1)	From Back (6)	From Sides (6)
Residential - Type						
Furnaces - Floor For mounting on Combustible floors.	Solid	18(2)	18(2)	48	18	18
	Automatic Oil or comb. Gas-oil	36		12	12	12
Room Heaters(3) Circulating type.	Oil or Solid	36		24	12	12
Radiant or Other type.	Oil or Solid	36		36	36	36
Fireplace stove	Solid	48(4)		54	48(4)	48(4)
Incinerators Domestic types		36(5)		48	36	36
Commercial - Type Low Heat Appliances						
Unit Heaters Floor mounted any size.	All fuels	18		48	18	18
Other low-heat Industrial Appliances. Floor mounted or suspended.	All fuels	18	18	48	18	18
Commercial Industrial - Type Medium Heat Appliances						
Incinerators All sizes.		48		96	36	36

Footnotes:

- (1) The minimum dimension shall be that necessary for servicing the appliance, including access for cleaning and normal care, tube removal, and similar items.
- (2) The dimension may be six inches (152mm) for an automatically stoker-fired forced-warm-air furnace equipped with 250 degree Fahrenheit limit control and with barometric draft control operated by draft intensity and permanently set to limit draft to a maximum intensity of 0.13-inch water gauge (32Pa).
- (3) Approved appliances must be installed on non-combustible floors and may be installed on protected combustible floors. Heating appliances approved for installation on protected combustible flooring shall be so constructed that flame

and hot gases do not come in contact with the appliance base. Protection for combustible floors shall consist of four inch (102mm) hollow masonry covered with sheet metal at least 0.021 inch (0.5mm) thick (NO. 24 manufacturer's standard gauge). Masonry must be permanently fastened in place in an approved manner with the ends unsealed and joints matched so as to provide free circulation of air through the masonry. Floor protection shall extend 12 inches (305mm) at the sides and rear of the appliance, except that at least 18 inches (457mm) shall be required on the appliance-opening side or sides measured horizontally from the edges of the opening.

- (4) The 48 -inch (1219mm) clearance may be reduced to 36 inches (914mm) when protection equivalent to that provided by items 1 through 6 of Table 304.8 (see below) is applied to the combustible construction.
- (5) Clearance above the charging door must be at least 48 inches (1219mm).
- (6) If the appliance is encased in brick, the 18-inch (457mm) clearance above and at sides and rear may be reduced to 12 inches (305mm).

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.Table 304.8 Clearances, in inches with specified forms of protection.

Insert the following table: (SFM)

Table 304.8 Clearances, in inches with specified forms of protection. (1,2)

TYPE OF PROTECTION		Where the standard clearance in Table 304.7 with no protection is											
		36 Inches			18 Inches			12 Inches			6 Inches		
Applied to the Combustible Material Unless Otherwise Specified and Covering All Surfaces within the Distance Specified as the Required Clearance with No Protection (Thicknesses Are Minimum)		(X 25.4 for mm)											
		(X 25.4 for mm)		Above	Sides And Rear	Chimney or Vent Connector	Above	Sides and Rear	Chimney or Vent Connector	Above	Sides and Rear	Chimney or Vent Connector	Above
1.	1/4" in insulating mill board spaced out 1" (3)	30	18	30	15	9	12	9	6	6	3	2	3
2.	0.013" (No. 28 manufacturer's standard gage) steel sheet on 1/4" insulating millboard	24	18	24	12	9	12	9	6	4	3	2	2
3.	0.013" (No. 28 manufacturer's standard gage) steel sheet spaced out 1" (3)	18	12	18	9	6	9	6	4	4	2	2	2
4.	0.013" (No. 28 manufacturer's standard gage) steel sheet on 1/8" insulating mill board spaced out 1" (3)	18	12	18	9	6	9	6	4	4	2	2	2
5.	1 1/2" insulating cement covering on heating appliance	18	12	36	9	6	18	6	4	9	2	1	6
6.	1/4" insulating millboard on 1" mineral fiber batts reinforced with wire mesh or equivalent	18	12	18	6	6	6	4	4	4	2	2	2

1. For appliances complying with Sections 304.2 and 304.3.
2. Except for the protection described in Item 5, all clearances shall be measured from the outer surface of the appliance to the combustible material, disregarding any intervening protection applied to the combustible material.
3. Spacers shall be of noncombustible material.

NOTE: Insulating millboard is a factory-made product formed of noncombustible materials, normally fibers, and having a thermal conductivity of I Btu -inch per square foot per degree Fahrenheit [1.73W/(m K)] or less.

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.304.12 Installation; aircraft servicing and storage areas.

Add a new subsection as follows:

"304.12 Aircraft Servicing and Storage Areas. Overhead heaters installed in aircraft storage or servicing areas shall be at least ten feet (3048 mm) above or away from the upper surface of wings or engine enclosures of the tallest aircraft which may be housed in the hangar."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.306.4 Appliances under floors.

Add the following as the first sentence:

"Installation of gas burning appliances in underfloor crawl spaces is prohibited."
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.308.12 Clearance reduction; steam and hot-water pipes.

Add the following new subsection:

"308.12 Steam and hot-water pipes. Coverings or insulation used on steam or hot-water pipes shall be of material suitable for the operating temperature of the system. The insulation or jackets shall be of noncombustible materials, or the insulation or jackets and lap-seal adhesives shall be tested as a composite product. Such composite product shall have a flame-spread rating of not more than 25 and a smoke-developed rating not to exceed 50."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.312 Heating and cooling load calculations.

In the third sentence, delete the words "using the design parameters specified in Chapter 3 of the International Energy Conservation Code." (SFM)
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.403.3 Ventilation rate.

Delete the first sentence and add the following:

"Ventilation Systems shall be designed to have the capacity to supply the minimum outdoor airflow rate required in Table 403.3 based on the occupancy of the space and the occupant load or other parameter as stated herein, or in accordance with ASHRAE Standard 62 (2001 edition)." (SFM)

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.Table 403.3 Required outdoor ventilation air.

Add a footnote h as follows:

"h. Change of use of a space to an accessory storage occupancy shall not require addition of a ventilation system when the space was not previously mechanically ventilated."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.501.2 Outdoor discharge.

Delete the exceptions and add the following to the second sentence:

"unless it is a part of an engineered ventilation system."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.504.1 Clothes dryer exhaust; installation.

Delete the exception and add the following sentence:

"Condensing (ductless) clothes dryers shall not be used."
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.505.1 Domestic kitchen exhaust equipment.

In Exception 1, delete the words "or natural" and add the word "exhaust" in their place.

And add the following Exception:

"3. Ducting included as a part of a listed appliance may be used as listed with that appliance."
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.506.3.4 Commercial kitchen grease ducts and exhaust equipment; air velocity.

Add the following at the end of the sentence:

"and not to exceed 2,500 feet per minute (12.7 m/s)."
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.506.6 Commercial kitchen grease ducts and exhaust equipment.

Add a new Section 506.6, as follows:

"506.6 Kitchen ventilation heat recovery equipment.

506.6.1 General. The provisions of this section apply to installation of kitchen ventilation heat recovery equipment installed within the interior of the building.

506.6.2 Ceiling penetrations. Any grease duct or hood penetrating a ceiling, regardless of whether or not the ceiling is rated, is considered concealed and shall be enclosed within a rated duct enclosure constructed in accordance with IMC 506.3.10.

506.6.3 Equipment installations. Only fans associated with heat recovery devices serving Type I hoods may be located in the grease duct within a rated enclosure. This equipment shall be specifically listed for kitchen ventilation application, or the equipment housing shall maintain the integrity of the externally welded liquid tight duct up to the entrance of and the exit from the exhaust fan or heat recovery element. Provisions shall be made for access to the equipment and internal components of devices containing fans or heat recovery elements for proper maintenance and cleaning. Duct cleanouts and other doors shall comply with IMC 506.3.8. Access doors to enclosures shall comply with IMC 506.3.11.

506.6.4 Duct and equipment enclosure. A grease duct enclosure may be enlarged to enclose equipment or may connect to the equipment housing if the equipment housing meets the rating of the grease duct enclosure. The duct may be run exposed within the rated equipment enclosure to the entrance of, and the exit from, the equipment which complies with this paragraph and IMC Section 506.3.10.

506.6.5 Fire dampers. Other associated ductwork located within a grease duct enclosure constructed as described in IMC Section 506.3.10 shall be fire dampered where penetrations of the enclosure occur."

506.6.6 Exhaust outlets. The grease duct shall terminate above the roof in accordance with IMC Section 506.3.12. A grease duct enclosure that stops at the rated equipment enclosure shall be vented to the exterior as if the rated equipment enclosure were a continuation of the duct enclosure."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.511.1 Dust, stock and refuse conveying systems.

Add the following exception:

"Exception: Listed dust collectors and separators designed and installed in accordance with NFPA 664."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.514 Energy recovery ventilation systems.

Delete the words "Where required for purposes of energy conservation, energy recovery ventilation systems shall also comply with the International Energy Conservation Code."; and add the words "Shall be installed according to the manufacturers instructions and specifications."

(SFM)

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.601.3 Contamination prevention.

Add the following exception:

"Exception: Environmental air exhaust ducts under positive pressure may extend into or through ducts or plenums if one of the following design approaches is used:

1. Route environmental air exhaust ducts inside a shaft when passing through a duct or plenum.
2. Install a second smooth duct or flexible, seamless duct around the environmental air exhaust duct where passing through ducts and plenums to minimize leakage to the duct or plenum. Seal both ends of the outer duct to outside.

3. Seal the environmental air exhaust ducts along all seams and joints using a listed low to medium pressure duct sealant which is typically applied by brush, trowel, or caulking gun. Install sealant per manufacturer's recommendations.
4. Provide flexible duct with no seams in the duct or plenum only to a limit of eight feet."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.603.1 Duct construction and installation.

Add the following sentence:

"Bathroom, laundry room and kitchen room exhaust ducting and HRV ducting may be of smooth plastic, smooth metal or flexible metal. Ducting included as a part of a listed appliance may also be used as listed with that appliance."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.603.5.1 Gypsum ducts.

Add the following sentence:

"Bathroom, laundry room, clothes dryer, and kitchen room exhaust and HRV ducting may not be constructed of gypsum products."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.603.9 Joints, seams and connections.

Delete the second sentence and replace with the following:

"All joints, longitudinal and transverse seams, and connections in ductwork, shall be securely fastened and sealed with welds, gaskets, mastics (adhesives), mastic-plus-embedded-fabric systems, or tapes. Tapes and mastics used to seal ductwork shall be listed and labeled in accordance with UL 181A or UL 181B. Duct connections to flanges of air distribution system equipment shall be sealed and mechanically fastened. Cloth duct tape is not permitted as a sealant on any metal ducts." (SFM, partial)

Add the following exception:

Exception. Continuously welded and locking-type longitudinal joints and seams on ducts operating at static pressures less than two inches w.g. (500 Pa) pressure classification."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.604.1 Duct systems; insulation; general.

Delete the words "and the International Energy Conservation Code." (SFM, partial)

Add to the end of the paragraph:

All supply and return air ducts and plenums shall be insulated with a minimum of R-5 insulation when located in unconditioned spaces and with a minimum of R-8 insulation when located outside the building envelope. When located within a building envelope assembly, the duct or plenum shall be separated from the building exterior or unconditioned or exempt spaces by a minimum of R-8 insulation.

Exceptions:

1. When located within equipment.
2. When the design temperature difference between the interior and exterior of the duct or plenum does not exceed 15°F (8°C).
3. When located within the under floor crawlspace of a one or two family dwelling unit."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.701.2 Combustion air; combustion and dilution air required.

Add a new sentence at the end of the section as follows:

"Garages with at least two single or one double car garage doors shall be assumed to meet the combustion air requirement unless the doors are unusually tight fitting."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.703.1.2 Combustion air; all air from the outdoors; size of direct openings.

Change "4,000 Btu/h" to "5,000 Btu/h".

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.703.1.3 Combustion air; all air from the outdoors; size of horizontal openings.

Change "2,000 Btu/h" to "2,500 Btu/h".

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.709.1 Combustion air; opening obstructions, general.

Add a second sentence to read:

"Combustion-air openings shall be covered with corrosion-resistant screen of 1/4 inch to 1/2 inch mesh." (SFM, partial)

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.804.1 Direct-vent, integral vent, mechanical vent and ventilation/exhaust hood venting.

Add the following sentence to the end of the paragraph:

"For direct-vent terminal clearances not specified by the manufacturer, the minimum dimension to air openings into the building shall be 24 inches."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.926 Unvented room heaters.

Add a new section as follows:

"926.1 Unvented Room Heaters. Unvented room heaters shall not be used."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.1001.1 Boilers, water heaters and pressure vessels; scope.

In exception 7, add the following sentence:

"See AS 18.60.180 - 18.60.395." (SFM)

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.1006.7 Boilers, water heaters and pressure vessels; boiler safety devices.

Add ", Table 10-A," after the word "instructions."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07 Table 10A Boilers, water heaters and pressure vessels.

In IMC Chapter 10, add a new Table 10A, as follows:

TABLE 10A-CONTROLS AND LIMIT DEVICES FOR AUTOMATIC BOILERS

BOILER GROUP	FUEL	FUEL INPUT RANGE ¹ (Inclusive) (x 0.293071 For W)	TYPE OF PILOT ²	SAFETY CONTROL TIMING (Nominal Maximum Time in Seconds)				Main Burner Flame Failure ³	ASSURED FUEL SUPPLY CONTROL ⁴	ASSURED AIR SUPPLY CONTROLS ⁵	LOW FIRE START UP CONTROL ⁶	PRE-PURGING CONTROL ⁷	HOT WATER TEMPERATURE AND LOW WATER LIMIT CONTROLS ⁸	STEAM PRESSURE AND LOW WATER LIMIT CONTROLS ⁹	APPROVED FUEL SHUTOFF ¹⁰	CONTROL AND LIMIT DEVICE SYSTEM DESIGN ¹¹
				Trial for Pilot	Direct Electric Ignition	Flame Pilot	Trial for Main Burner Flame									
A	Gas	0--400,000 Btu/h	Any type	90	Not Required	90	90	Not Required	Required	Not Required	Not Required	Required	Required	Not Required	Required	
B	Gas	400,001--2,500,000 Btu/h	Interrupted or intermittent	15	15	15	2--4	Not Required	Required	Not Required	Not Required	Required	Required	Not Required	Required	
C	Gas	2,500,001--5,000,000 Btu/h	Interrupted or intermittent	15	15	15	2--4	Required	Required	Required	Required	Required	Required	Required	Required	
D	Gas	Over 5,000,000 Btu/h	Interrupted	15	15	15	2--4	Required	Required	Required	Required	Required	Required	Required	Required	
E	Oil	0--400,000 Btu/h	Any type	Not Required	90	90	90	Not Required	Required	Not Required	Not Required	Required	Required	Not Required	Required	
F	Oil	400,001--1,000,000 Btu/h	Interrupted	Not Required	30	30	2--4	Required	Required	Not Required	Not Required	Required	Required	Not Required	Required	
G	Oil	Over 3,000,000 Btu/h	Interrupted	Not Required	15	15	2--4	Required	Required	Not Required	Not Required	Required	Required	Not Required	Required	
H	Oil	Over 3,000,000 Btu/h	Interrupted	15	15	60	2--4	Required	Required	Required	Required	Required	Required	Required	Required	
	Electric	All	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Required	Required	Not Required	Required	

¹Fuel input shall be determined by one of the following:

1.1 The maximum burner input as shown on the burner nameplate or as otherwise identified by the manufacturer.

1.2 The nominal boiler rating, as determined by the building official, plus 25 percent.

²Automatic boilers shall have one flame failure device on each burner which shall prove the presence of a suitable ignition source at the point where it will reliably ignite the main burner, except that boiler Groups A, B, E, F and G which are equipped with direct electric ignition shall monitor the main burner, and all boiler groups using interrupted pilots shall monitor only the main burner after the prescribed limited trial and ignition periods, Boiler Group A equipped with continuous pilot shall accomplish 100 percent shutoff within 90 seconds upon pilot flame failure. The use of intermittent pilots in boiler Group C is limited to approved burner units.

³In boiler Groups B, C and D, a 90-second main burner flame failure limit may apply if continuous pilots are provided on manufacturer-assembled boiler-burner units which have been approved by an approved testing agency as complying with nationally recognized standards approved by the building official, Boiler Groups F and G equipped to reenergize their ignition system within 0.8 second after main burner flame failure will be permitted 30 seconds for Group F or 15 seconds for Group G to reestablish its main burner flame.

⁴Boiler Groups C and D shall have controls interlocked to accomplish a nonrecycling fuel shutoff upon high or low gas pressure, and boiler Groups F, G and H using steam or air for fuel atomization shall have controls interlocked to accomplish a non recycling fuel shutoff upon low atomizing steam or air pressure. Boiler Groups F, G and H equipped with a preheated oil system shall have controls interlocked to provide fuel shutoff upon low oil temperature.

⁵Automatic boilers shall have controls interlocked to shut off the fuel supply in the event of draft failure if forced or induced draft fans are used or, in the event of low combustion airflow, if a gas power burner is used. Where a single motor directly driving both the fan and the oil pump is used, a separate control is not required.

⁶Boiler Groups C, D and H, when firing in excess of 400,000 Btu (117 kW) per combustion chamber, shall be provided with low fire start of its main burner system to permit smooth light-off. This will normally be a rate of approximately one third of its maximum firing rate.

⁷Boiler Groups C, D and H shall not permit pilot or main burner trial for ignition operation before a purging operation of sufficient duration to permit a minimum of four complete air changes through the furnace, including combustion chamber and the boiler passes. Where this is not readily determinable, five complete air changes of the furnace,

including combustion chamber up to the first pass, will be considered equivalent. An atmospheric gas burner with no mechanical means of creating air movement or an oil burner which obtains two thirds or more of the air required for combustion without mechanical means of creating air movement shall not require purge by means of four air changes so long as its secondary air openings are not provided with means of closing. If such burners have means of closing secondary air openings, a time delay must be provided which puts these closures in a normally open position for four minutes before an attempt for ignition. An installation with a trapped combustion chamber shall in every case be provided with a mechanical means of creating air movement for purging.

⁸Every automatic hot-water-heating boiler, low-pressure hot-water-heating boiler, and power hot-water boiler shall be equipped with two high-temperature limit controls with a manual reset on the control with the higher setting interlocked to shut off the main fuel supply, except that manual reset on the high-temperature limit control shall not be required on any automatic package boiler not exceeding 400,000 *Btu/h* (117 kW) input and which has been approved by an approved testing agency. Every automatic hot-water heating, power boiler and package hot-water supply boiler shall be equipped with one low-water-level limit control with a manual reset interlocked to shut off the fuel supply so installed as to prevent damage to the boiler and to permit testing of the control without draining the heating system except on boilers used in Group R Occupancies of less than six units and in Group M Occupancies and further, except that the low-water-level limit control is not required on package hot-water-supply boilers approved by a nationally recognized testing agency. However, a low-water-flow limit control installed in the circulating water line may be used instead of the low-water-level limit control for the same purpose on coil-type boilers.

⁹Every automatic low-pressure steam-heating boiler, small power boiler and power steam boiler shall be equipped with two high-steam pressure limit controls interlocked to shut off the fuel supply to the main burner with manual reset on the control with the higher setting and two low-water-level limit controls, one of which shall be provided with a manual reset device and independent of the feed water controller. Coil-type flash steam boilers may use two high-temperature limit controls, one of which shall be manually reset in the hot-water coil section of the boiler instead of the low-water-level limit control.

¹⁰Boiler Groups C, D and H shall use an approved automatic reset safety shutoff valve for the main burner fuel shutoff, which shall be interlocked to the programming control devices required. On oil burners where the safety shutoff valve will be subjected to pressures in excess of 10 psi (69 kPa) when the burner is not firing, a second safety shutoff valve shall be provided in series with the first. Boiler Groups C and D, using gas in excess of I-pound-per-square-inch (6.9 kPa) pressure or having a trapped combustion chamber or employing horizontal fire tubes, shall be equipped with two approved safety shutoff valves, one of which shall be an automatic-reset type, one of which may be used as an operating control, and both of which shall be interlocked to the limit-control devices required. Boiler Groups C and D using gas in excess of I-pound-per-square-inch (6.9 kPa) pressure shall be provided with a permanent and ready means for making periodic tightness checks of the main fuel safety shutoff valves.

¹¹Control and limit device systems shall be grounded with operating voltage not to exceed 150 volts, except that, on approval by the building official, existing control equipment to be reused in an altered boiler control system may use 220-volt single phase with one side grounded, provided such voltage is used for all controls. Control and limit devices shall interrupt the ungrounded side of the circuit. A readily accessible means of manually disconnecting the control circuit shall be provided with controls so arranged that when they are deenergized the burner shall be inoperative."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.1105.3 Refrigerant detector.

Add a second sentence to read as follows:

"Refrigerant detectors shall alarm both inside and outside the machinery room."

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.1105.6.2 Refrigeration; make-up air.

In the last sentence after " 1/4 -inch (6.4 mm)" insert "to not more than 1/2 -inch (12.8 mm)".

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.1204.1 Hydronic piping; pipe insulation; insulation characteristics.

Delete the words "conform to the requirements of the International Energy Conservation Code and". (SFM)

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.1204.2 Hydronic piping; pipe insulation; required thickness.

Delete section 1204.2 and add the following:

"1204.2 Required Insulation. The surface temperature of piping located within normal reach of building occupants shall not exceed 120 degrees Fahrenheit." (SFM, partial)

(Serial No. 2004-31, § 1, 10-11-2004)

19.07.1305.1 Fuel oil system installation; flood hazard.

Add a second paragraph as follows:

"In flood hazard areas, tank inlets, fill openings, outlets, and vents shall be at or above the design flood elevation or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the design flood."

(Serial No. 2006-19, § 16, 5-23-2006)

19.07.1401 Solar systems.

Delete Sections 1401 through 1404 and insert a new Section 1401 as follows:

"1401 General. Solar energy equipment and appliances must be installed in compliance with the Solar Energy Code as adopted by 8 AAC 63.010." (SFM)
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.Ch 15 Referenced standards.

In IMC Chapter 15, add or change these listed referenced standards to the following:

NFPA 13-2002 Installation of Sprinkler Systems.

NFPA 72-2002 National Fire Alarm Code. (SFM)

NFPA 96-2001 Ventilation Control and Fire Protection of Commercial Cooking Operations. (SFM)
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.IMC_Appendix_A Combustion air openings and chimney connection pass-throughs.

IMC Appendix A is adopted as a part of this Code.
(Serial No. 2004-31, § 1, 10-11-2004)

19.07.IMC_Appendix_B Recommended permit fee schedule.

IMC Appendix B is not adopted.
(Serial No. 2004-31, § 1, 10-11-2004)