

INTERNATIONAL RESIDENTIAL CODE 2009 EDITION

FUEL GAS SECTION

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Code Update 2009

We will be covering the significant changes to the International Residential Code and the International Fuel Gas Code in this portion of the presentation.

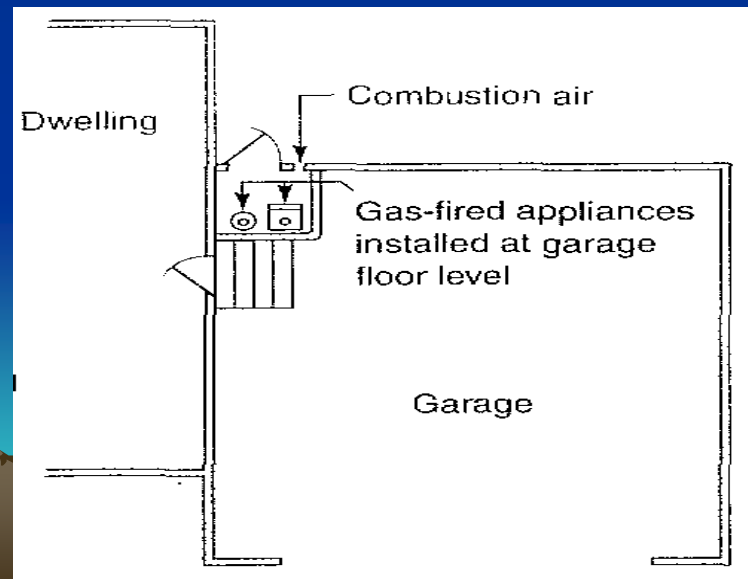


Code Update 2009

IRC G2407.4 and IFGC 304.4

Installation in residential garages

In residential garages where appliances are installed in a separate, enclosed space having access only from outside of the garage, such appliances shall be permitted to be installed at floor level, provided that the required combustion air is taken from the exterior of the garage.

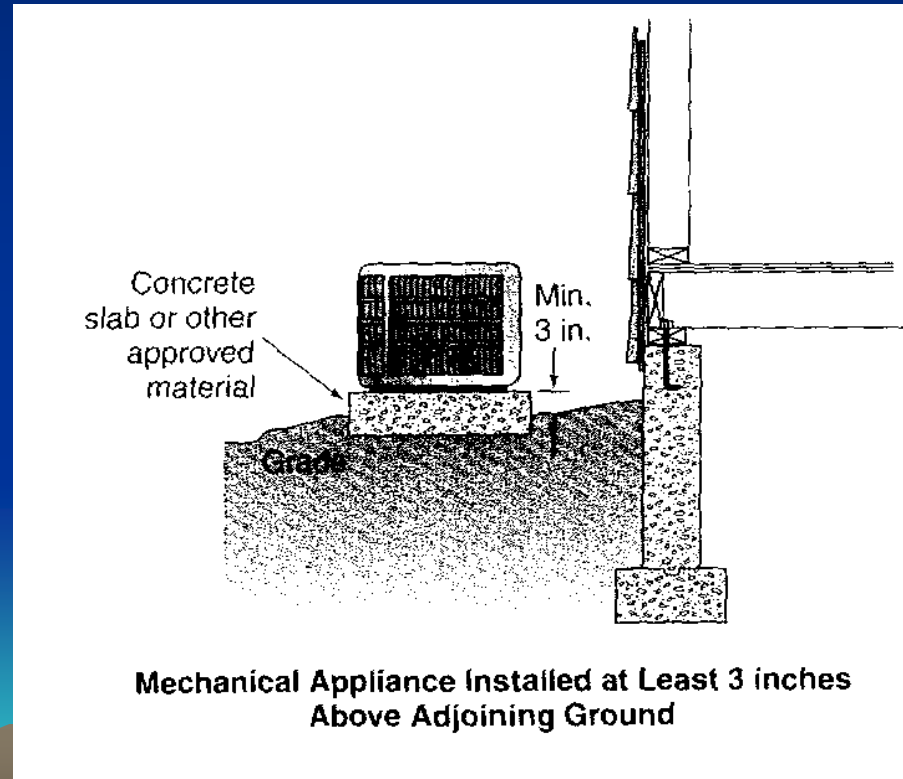


Code Update 2009

IRC G2408.4 & IFGC 305.7

Clearances from grade Added clearance to adjoining grade:

Equipment and appliances installed at grade level shall be on a level concrete slab or other approved material extending not less than 3 inches above adjoining grade.



Code Update 2009

IRC G2408.6 & IFGC 305.12

Avoid strain on gas piping

Appliances shall be supported and connected to the piping so as not to exert undue strain on the connection.



Gas Pipe/ Hanger rod



Code Update 2009

IRC G2411.1.1

CSST BONDING

Corrugated stainless steel tubing (CSST) gas systems shall be bonded to the electrical service grounding electrode system *at the point where the gas service enters the building.* The bonding jumper shall not be smaller than 6AWG copper wire or equivalent.

Code Update 2009

IRC G2415.4 and IFGC 404.4

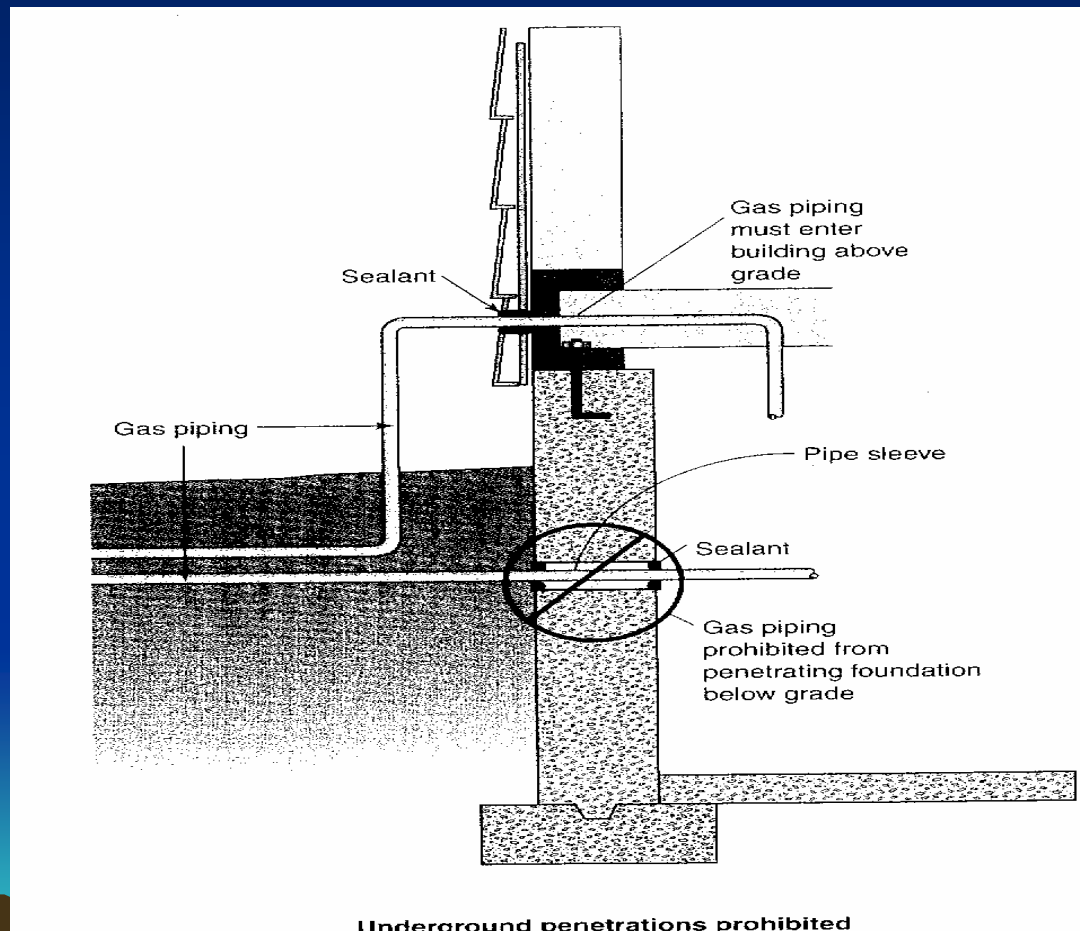
Underground penetrations prohibited

Gas piping shall not penetrate building foundation walls at any point below grade. Gas piping shall enter and exit a building at a point above grade and the annular space between the pipe and the wall shall be sealed.



Code Update 2009

IRC G2415.4 and IFGC 404.4



Code Update 2009

IRC G2415.6.1, G2415.12.1, IFGC 404.6.1 & 404.12.1

Conduit with one end terminating outdoors.

The conduit shall extend into an occupiable portion of the building and, at the point where the conduit terminates in the building, the space between the conduit and the gas piping shall be sealed to prevent the possible entrance of any gas leakage. The conduit shall extend not less than 2" beyond the point where the pipe emerges from the floor. If the end sealing is capable of withstanding the full pressure of the gas pipe, the conduit shall be designed for the same pressure as the pipe. Such conduit shall extend not less than 4" outside of the building, shall be vented above grade to the outdoors and shall be installed to prevent the entrance of water and insects.



Code Update 2009

IRC G2415.6.2, G2415.12.2 & IFGC 404.6.2, 404.12.2

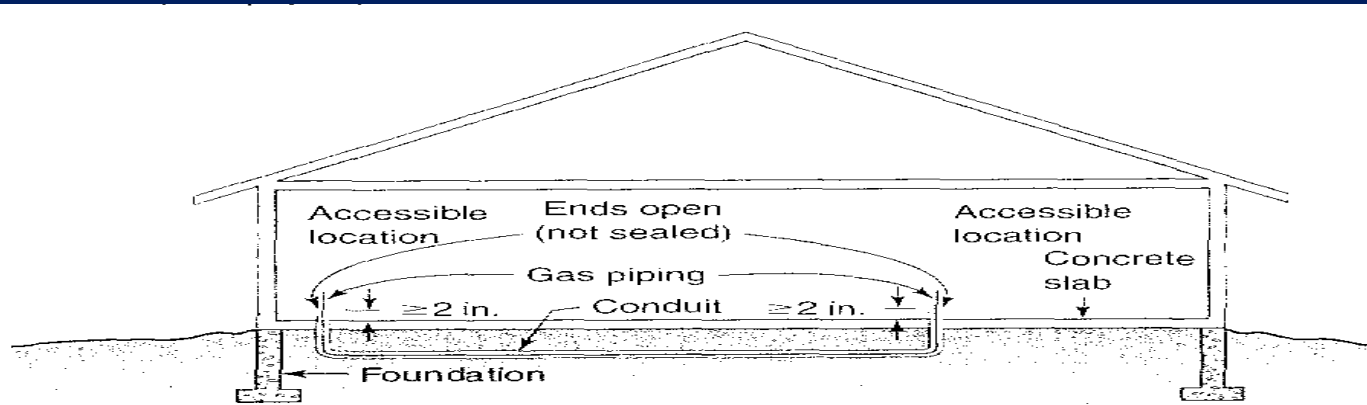
Conduit with both ends terminating indoors.

Where the conduit originates and terminates within the same building, the conduit shall originate and terminate in an accessible portion of the building and shall not be sealed. The conduit shall extend not less than 2" beyond the point where the pipe emerges from the floor.

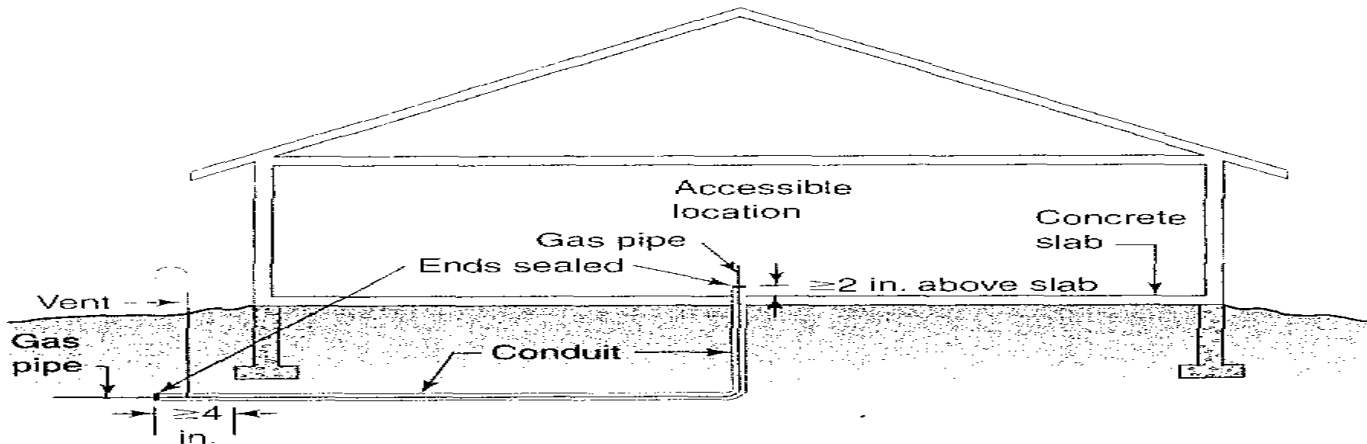


Code Update 2009

IRC G2415.6.2, G2415.12.2 & IFGC 404.6.2, 404.12.2



Conduit with both ends terminating indoors



Conduit with one end terminating outdoors
Gas piping underground beneath buildings

Code Update 2009

IRC G2415.8 & IFGC 404.8

Isolation

Metallic piping and metallic tubing that conveys fuel gas from an LP-gas storage container shall be provided with an approved dielectric fitting to electrically isolate the underground portion of the pipe or tube from the above ground portion that enters a building. Such dielectric fitting shall be installed aboveground outdoors.



Code Update 2009

IRC G2418.2 & IFGC 407.2

Design and installation

Piping shall be supported with metal pipe hooks, metal pipe straps, metal bands, metal brackets, metal hangers or building structural components suitable for the size of piping, of adequate strength and quality, and be located at intervals so as to prevent or damp out excessive vibration. Piping shall be anchored to prevent undue strains on connected appliances and shall not be supported by other piping.



Code Update 2009

IRC G2419.4 & IFGC 408.4

Sediment Trap

New language has been added to clarify which opening of the tee is used to read as follows:

The sediment trap shall be either a tee fitting having a capped nipple of any length installed vertically in the bottommost opening of the tee or other device approved as an effective sediment trap.



Code Update 2009

IRC G2419.4 & IFGC 408.4



Code Update 2009

IRC G2420.5 & IFGC 409.5

Appliance shutoff valve

Each appliance shall be provided with a shutoff valve in accordance with Section G2420.5.1, G2420.5.2 or G2420.5.3.





Code Update 2009

IRC G2420.5.1 & IFGC 409.5.1

Located within the same room

The shutoff valve shall be located in the same room as the appliance. The shutoff valve shall be within 6 feet of the appliance, and shall be installed upstream of the union, connector or quick disconnect device it serves. Such shutoff valves shall be provided with access. Appliance shutoff valves located in the firebox of a fireplace shall be installed in accordance with the appliance manufacturer's instructions.



Code Update 2009

IRC G2420.5.2 & IFGC 409.5.2

Vented decorative appliances and room heaters

Shutoff valves for vented decorative appliances, room heaters and decorative appliances for installation in vented fireplaces shall be permitted to be installed in an area remote from the appliances where such valves are provided with ready access. Such valves shall be permanently identified and shall serve no other appliance. The piping from the shutoff valve to within 6 feet of the appliance shall be designed, sized and installed in accordance with Sections G2412 through G2419 or Sections 401 through 408 of the IFGC.



Code Update 2009

IRC G2420.5.3 & IFGC 409.5 .3

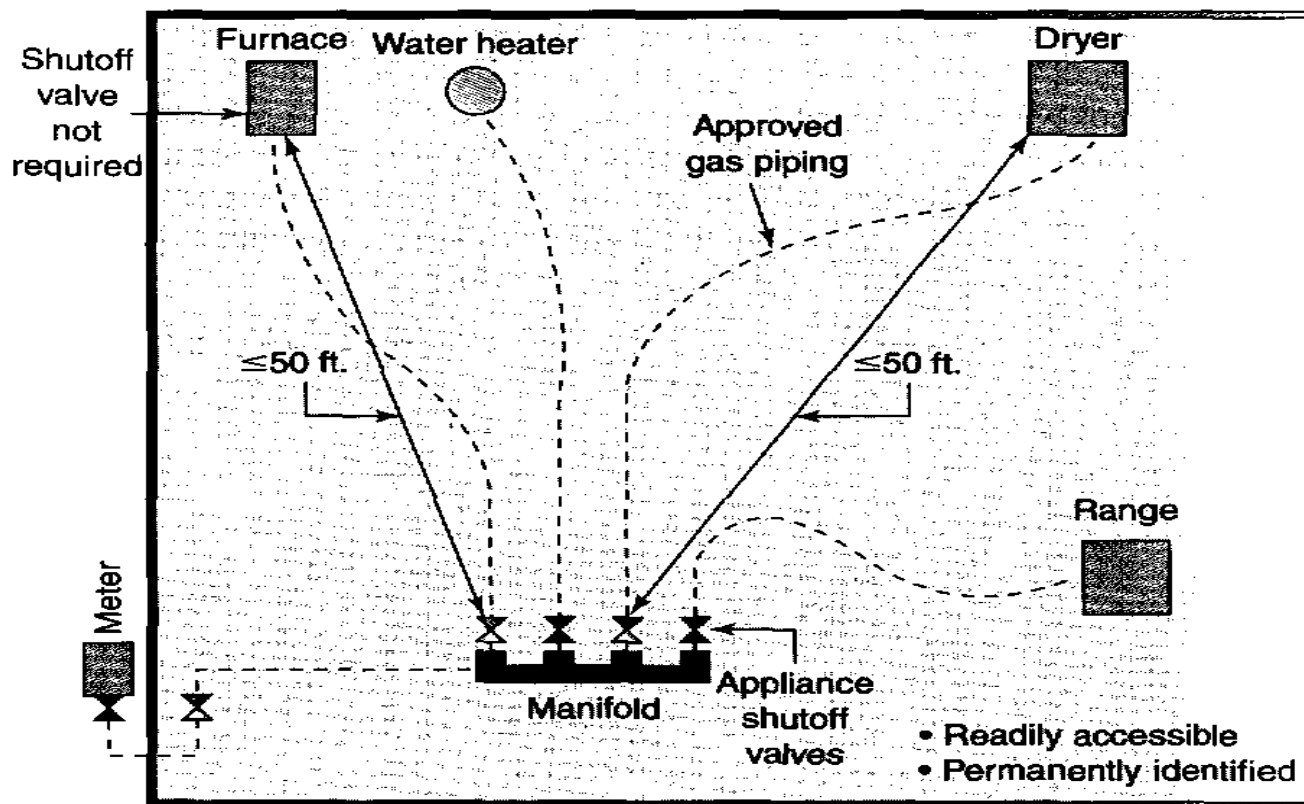
Located at manifold

Where the appliance shutoff valve is installed at a manifold, such shutoff valve shall be located within 50 feet of the appliance and shall be readily accessible and permanently identified. The piping from the manifold to within 6 feet of the appliance shall be sized and installed in accordance with Sections G2412 through G2419 of the IRC or Sections 401 through 408 of the IFGC.



Code Update 2009

IRC G2420.5.3 & IFGC 409.5 .3



Appliance shutoff valves

Code Update 2009

IRC G2421.3.1 & IFGC 410.3.1

Vent piping

Vent piping for relief vents and breather vents shall be constructed of materials allowed for gas piping in accordance with Section G2414. Vent piping shall not be smaller than the vent connection on the pressure regulating device. Vent piping serving relief vents and combination relief and breather vents shall be run independently to the outdoors and shall serve only a single device vent. Vent piping serving only breather vents is permitted to be connected with an approved design that minimizes back pressure in the event of diaphragm rupture. Regulator vent piping shall not exceed the length specified in the regulator manufacturer's installation instructions.

Code Update 2009

IRC G2422.1.2.1 & IFGC 411.1.3.1

Appliance connector maximum length

Connectors shall not exceed 6 feet in overall length.

Exception: Rigid metallic piping used to connect an appliance to the piping system shall be permitted to have a total length greater than 6 feet provided that the connecting pipe is sized as part of the piping system in accordance with Section G2413 and location of the appliance shutoff valve complies with Section G2420.5.



Clearances to electrical



Code Update 2009

IRC G2422.1.2.3 & IFGC 411.1.3.3

Exceptions:

1. Connectors constructed of materials allowed for piping systems in accordance with Section G2414 shall be permitted to pass through walls, floors, partitions and ceilings where installed in accordance with Section G2420.5.2 or G2420.5.3
2. Rigid steel pipe connectors shall be permitted to extend through openings in appliance housings.
4. Semirigid tubing and listed connectors shall be permitted to extend through an opening in an appliance housing, cabinet or casing where the tubing or connector is protected against damage

Code Update 2009

IRC 2422.1.4 & IFGC 411.1.6

Unions

A union fitting shall be provided for appliances connected by rigid metallic piping. Such unions shall be accessible and located within 6 feet of the appliance.



Code Update 2009

IRC G2422.2 & IFGC 411.3

Suspended low-intensity infrared tube heaters

Suspended low-intensity infrared tube heaters shall be connected to the building piping system with a connector listed for the application complying with ANSI Z21.24/CGA 6.10. The connector shall be installed as specified by the tube heater manufacturer's instructions.



Code Update 2009

IRC G2425.15.4 & IFGC 501.15.4

Clearances

Exception added to read as follows:

Masonry chimneys without the required air-space clearances shall be permitted to be used if lined or relined with a chimney lining system listed for use in chimneys with reduced clearances in accordance with UL 1777. The chimney clearance shall be not less than that permitted by the terms of the chimney lining listing and the manufacturer's instructions.



Code Update 2009

IRC G2427.6.11 & IFGC 503.6.13

Fastener penetrations

Screws, rivets and other fasteners shall not penetrate the inner wall of double-wall gas vents, except at the transition from an appliance draft hood outlet, a flue collar or a single-wall metal connector to a double-wall vent.





Code Update 2009

IRC G2439.5.3 & IFGC 614.6.3

Dryer exhaust protection required

Protective shield plates shall be placed where nails or screws from finish or other work are likely to penetrate the clothes dryer exhaust duct. Shield plates shall be placed on the finished face of all framing members where there is less than 1¼ inches between the duct and the finished face of the member. Protective shield plates shall be constructed of steel, shall have a minimum thickness of 0.062 inch and shall extend a minimum of 2 inches above sole plates and below top plates.







Code Update 2009

**This is the end of the significant
changes to the IRC Gas Section**



INTERNATIONAL FUEL GAS CODE

2009 EDITION



Code Update 2009

IFGC 305.10

Repair garages

Appliances installed in repair garages shall be installed in a detached building or room, separate from repair areas by walls or partitions, floors or floor-ceiling assemblies that are constructed so as to prohibit the transmission of vapors and having a fire-resistance rating of not less than 1 hour, and that have no openings in the wall separating the repair area within 8 feet of the floor. Air for combustion purposes shall be obtained from the outdoors. The appliance room shall not be used for the storage of combustible materials.



Code Update 2009

IFGC 305.10

Exceptions:

1. Overhead heaters where installed not less than 8 feet above the floor shall be permitted.
2. Heating appliances for vehicle repair areas where there is no dispensing or transferring of Class I or II flammable or combustible liquids or liquefied petroleum gas shall be installed in accordance with NFPA 30A.



Code Update 2009

IFGC 306.1

Access for maintenance and replacement

Appliances shall be accessible for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, or any other piping or ducts not connected to the appliance being inspected, serviced, repaired or replaced. A level working space at least 30 inches deep and 30 inches wide shall be provided in front of the control side to service an appliance.



Code Update 2009

IFGC 306.3 & IFGC 306.4

Appliances in attics & under floors

The last sentence has been reworded to read as follows:

The clear access opening dimensions shall be a minimum 20 inches by 30 inches, *and large enough to allow removal of the largest appliance.*



Code Update 2009

IFGC 404.9.3

Coating Application

USBC amendment added to read as follows:
Joints in gas piping systems shall not be coated prior to testing and approval.



Code Update 2009

IFGC 503.4.1.1

Plastic vent joints

Plastic pipe and fittings used to vent appliances shall be installed in accordance with the appliance manufacturer's installation instructions. Where a primer is required, it shall be of a contrasting color.



Code Update 2009

IFGC 503.10.4.1

Two or more openings

Where two or more openings are provided into one chimney flue or vent, the openings shall be at different levels, or the connectors shall be attached to the vertical portion of the chimney or vent at an angle of 45 degrees or less relative to the vertical.



Code Update 2009

IFGC Tables 504.2(3) & 504.2(4)

Masonry chimney

Maximum internal area of chimney (sq. in.)

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TABLE 504.2(3)—continued
MASONRY CHIMNEY

Number of Appliances	Single
Appliance Type	Category I
Appliance Vent Connection	Type B double-wall connector

HEIGHT (H) (feet)	LATERAL (L) (feet)	TYPE B DOUBLE-WALL CONNECTOR DIAMETER—(D) inches to be used with chimney areas within the size limits at bottom																										
		3		4		5		6		7		8		9		10		12										
		APPLIANCE INPUT RATING IN THOUSANDS OF BTU/H																										
		FAN		NAT		FAN		NAT		FAN		NAT		FAN		NAT		FAN		NAT		FAN		NAT				
		Min	Max	Max	Min	Max	Max	Min	Max	Max	Min	Max	Max	Min	Max	Max	Min	Max	Max	Min	Max	Max	Min	Max	Max			
30	2	NA	NA	41	NA	NA	82	NA	NA	137	NA	NA	216	47	581	303	57	762	421	68	985	558	81	1,240	717	111	1,793	1,112
	5	NA	NA	NA	NA	NA	76	NA	NA	128	NA	NA	198	75	561	281	90	741	393	106	962	526	125	1,216	683	169	1,766	1,094
	10	NA	NA	NA	NA	NA	67	NA	NA	115	NA	NA	184	NA	NA	263	115	709	373	135	927	500	158	1,176	648	210	1,721	1,025
	15	NA	NA	NA	NA	NA	NA	NA	NA	107	NA	NA	171	NA	NA	243	NA	NA	353	156	893	476	181	1,139	621	239	1,679	981
	20	NA	NA	NA	NA	NA	NA	NA	NA	91	NA	NA	159	NA	NA	227	NA	NA	332	176	860	450	203	1,103	592	264	1,638	940
	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	188	NA	NA	288	NA	NA	416	249	1,035	555	318	1,560	877
50	2	NA	NA	NA	NA	NA	92	NA	NA	161	NA	NA	251	NA	NA	351	51	840	477	61	1,106	633	72	1,413	812	99	2,080	1,243
	5	NA	NA	NA	NA	NA	NA	NA	NA	151	NA	NA	230	NA	NA	323	83	819	445	98	1,083	596	116	1,387	774	155	2,052	1,225
	10	NA	NA	NA	NA	NA	NA	NA	NA	138	NA	NA	215	NA	NA	304	NA	NA	424	126	1,047	567	147	1,347	733	195	2,006	1,147
	15	NA	NA	NA	NA	NA	NA	NA	NA	127	NA	NA	199	NA	NA	282	NA	NA	400	146	1,010	539	170	1,307	702	222	1,961	1,099
	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	185	NA	NA	264	NA	NA	376	165	977	511	190	1,269	669	246	1,916	1,050
	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	327	NA	NA	468	233	1,196	623	295	1,832	984
Minimum Internal Area of Chimney (square inches)		12		19		28		38		50		63		78		95		132										
Maximum Internal Area of Chimney (square inches)		Seven times the listed appliance categorized vent area, flue collar area or draft hood outlet area.																										

For SI: 1 inch = 25.4 mm, 1 square inch = 645.16 mm², 1 foot = 304.8 mm, 1 British thermal unit per hour = 0.2931 W.

Code Update 2009

IFGC 505.1.1

Commercial cooking appliances vented by exhaust hoods

Text added to section to read as follows:

The method of interlock between the exhaust hood system and the appliances equipped with standing pilot burner ignition systems **shall not** cause such pilots to be extinguished.

NOTE: By-pass piping is not permitted by the code.



Code Update 2009

IFGC 620.5

Unit heaters installed in commercial garages and aircraft hangars

Unit heaters installed in garages for more than three motor vehicles or in aircraft hangars shall be installed in accordance with Sections 305.9, 305.10 and 305.11.



Code Update 2009

IFGC 630.3

Combustion and ventilation air

Where unvented infrared heaters are installed, natural or mechanical means shall provide outdoor ventilation air at a rate of not less than 4 cfm per 1000 Btu/h of the aggregate input rating of all such heaters installed in the space. Exhaust openings for removing flue products shall be above the level of the heaters.



Code Update 2009

IFGC 630.4

Installation in commercial garages and aircraft hangars

Overhead infrared heaters installed in garages for more than three motor vehicles or in aircraft hangars shall be installed in accordance with Sections 305.9, 305.10 and 305.11.



The End

