

## ORDINANCE NO. 24

## THE CITY OF CARSON CITY ORDAINS:

Section 1: Gas Burner, General Requirement. The construction arrangement and manner of installation of all gas burners and gas burner equipment hereafter installed for use in connection with heating systems, and the alteration and repair hereafter of all gas burners and gas burner equipment used or to be used in connection with heating systems, shall conform to the following provisions:

Section 2: Gas Burner and Gas Burner Equipment Defined. For the purpose of this code, the term "gas burner" shall mean a device for the final conveyance of the gas, or a mixture of gas and air to the combustion zone of a boiler or furnace used in connection with a heating system. The term "gas burner equipment" shall include gas burners, as above defined, and all piping (other than supply piping) from meter to appliance shut off valve, blower, control device, and accessories connected to the burners.

Section 3: Board of Inspection: The mayor, by and with the consent of the Common Council, or Board of Supervisors, shall appoint a Board of Inspection to consist of three (3) members, and one (1) of members to be the Fire Chief and the remaining two (2) shall be two (2) Citizens of the City of Carson City and it shall be the duty of the Board of Inspection to appoint an Inspector whose duty it shall be to make the inspection required by this ordinance.

Section 4: Administration: It shall be unlawful for any person, firm, partnership, association, or corporation, personally or through any agent or servant or other party acting on his, their, or its behalf, to engage, in the City of Carson City, in the business of installing, altering, repairing, or servicing any gas fired space heating equipment or any parts or accessories thereof or appurtenances thereto, without having applied for and obtained a license currently in force, covering the class of equipment in question, as hereinafter provided, and it shall also be unlawful for any person who is required by this Ordinance to register as an employee to install, repair or service any gas heating equipment without having currently so registered, and it shall be unlawful for any person, firm, partnership, association, or corporation to permit any employee who is required to register, to install, repair or service any gas heating equipment without having so registered.

Section 5: License, Application for: Application for a license shall be made on a blank form to be furnished for such purpose by an authorized person. The application shall contain in addition to other requested information, the following:

- (A) Name, age and address of applicant:
- (B) The class of equipment:
- (C) Qualifications of applicant:
- (D) If applicant be a corporation.
  - 1. Full and accurate corporate name:
  - 2. When and where incorporated.
  - 3. Full names and addresses of officers of corporations.
  - 4. Name of officer or regular employee who is to take the examination and his qualifications:
- (E) If applicant is a partnership;
  - 1. Names and addresses of members thereof and the name of the partner or regular employee who is taking the examination and his qualifications:
- (F) If the applicant conducts business under a trade or assumed name, the following additional information:
  - 1. Complete and full trade name.
  - 2. The name of the person or persons doing business under such trade or assumed name.

Section 6: A license fee of Fifteen Dollars (\$15.00) shall be paid to an authorized person upon filing such application.

Section 7: Installation, When Lawful: It shall be unlawful for any person or his agents to install any gas burner, such as above defined, until an application for a permit on a form similar to that set forth, immediately hereafter, shall have been filed with and a permit issued by an authorized person. (Installer shall obtain permit from Comptroller's office.)

#### APPLICATION FOR PERMIT TO INSTALL BURNER

The undersigned hereby requests that a permit be issued to install the gas burner described as follows:

1. Address where installation is to be made \_\_\_\_\_
2. Name of burner \_\_\_\_\_
3. Types of burner \_\_\_\_\_
4. B.T.U. input \_\_\_\_\_
5. Name of Manufacturer \_\_\_\_\_
6. Address of Manufacturer \_\_\_\_\_
7. Kind of fuel recommended for burner \_\_\_\_\_
8. Length of time burner has been on market \_\_\_\_\_
9. Name of approving laboratory \_\_\_\_\_
10. Application filed by \_\_\_\_\_
11. At \_\_\_\_\_, Michigan, this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_.

The permit fee shall be One Dollar for each residence commercial, or industrial installation plus fifty cents for each additional unit. Fees shall be used to pay for the inspection.

Section 8: Approval: An authorized person shall issue a permit for installing any gas burner approved by the American Gas Association or any other nationally recognized inspection board or laboratory. Gas burners not approved by the American Gas Association or any other nationally recognized inspection board or laboratory shall not be installed until they shall have been inspected, tested and approved by some recognized engineering board or laboratory capable of making such a test and inspection, this inspection and test shall cover arrangement of parts; suitability of material, strength of parts, electrical control, thermostatic arrangement, reliability of automatic features and positiveness of ignition.

Section 9: Installation of Used Gas Burners, Procedure Required: It shall be unlawful for any person, licensed to install, alter, repair or replace gas burners within the City, to install any used gas burner or for an authorized person to issue any permit authorizing him so to do, until said licensee shall have first submitted with his application for such permit a copy of the purchase order describing the used burner that is to be installed and a statement by the purchaser acknowledging that to be the case, together with a statement by said licensee that said burner has been properly reconditioned and will comply in every way with code requirements for new equipment as to operation, safety standards and adjustments.

Section 10: Ventilation: Gas burners, as hereinafter defined, shall not be installed in any appliance located in a room where the normal facilities for ventilation do not permit proper combustion of gas, unless special provision is made for supplying sufficient air for complete combustion.

Section 11: Flues. All appliance flues through which flue gases are conducted shall be thoroughly cleaned and examined for leaks and draft conditions before installation is to be made.

Section 12: When to be Replaced: When flue pipes are rusted or burned out, they shall be replaced by new pipe.

Section 13: Kind of Material to be used: Material used for flue pipe shall be such as to resist the corrosive action of flue gases.

Section 14: Support of Location: Flue pipe shall be well supported to prevent sagging, shall be adequately insulated from and in no case shall be located closer than four inches to combustible building materials.

Section 15: Draft Hood: A draft hood or its equivalent should be installed which is designed to (1) insure the ready escape of the products of combustion in the event of no draft, back draft, or stoppage beyond the appliance, (2) prevent a back draft from entering the appliance and (3) Neutralize the effect of stock action of the flue upon the operation of the appliance or in the appliance itself, such draft hood, or equivalent device, shall conform to the American Gas Association for Standard Listed Draft Hoods.

Section 16: Location: The draft hood shall be located at a point not lower than the top of the highest flue passage in the appliance.

Section 17: Draft Hood Location, Alternate: The draft hood should ordinarily be located adjacent to the appliance. In case where it appears to be desirable to place the draft hood at a distance from the appliance, the size of the restricted section may be modified according to the length and rise of the flue pipe.

Section 18: Revertible Type: Appliances of the revertible flue type shall have the draft hood located at least one foot higher than the top of the highest flue passage. In all boilers or furnaces of the revertible flue type not specifically designed for the use of gas fuel, proper provisions shall be made to prevent the accumulation of gas in any part thereof, subject to the approval of the Inspector.

Section 19: Area: The internal cross-sectional area of the section of the flue pipe between the outlet of the appliance and the draft hood shall be such as to provide not less than one square inch of flue area per 7,500 hourly BTU in put. In no case shall this section of flue pipe be less than three inches in diameter and it shall be not larger than the next integral inch diameter above the size given in the following tables:

MINIMUM PERMISSIBLE FLUE  
SIZE FOR GAS BURNER

<u>Input Rating B.T.U. per hr.</u>	<u>Area of Flue outlet sq. in.</u>	<u>Diameter of Flue Pipes</u>
52:500	7.0	3
94:500	12.6	4
147:000	19.6	5
212:250	28.3	6
288:750	38.5	7
377:250	50.3	8
477:000	63.3	9

Based on 1 sq. in. flue area per 7,500 B.T.U. per hour input. In cases where the outlet from the appliance is greater than the above indicated disk, an orifice plate may be inserted or a section of the flue pipe restricted to the size indicated.

Section 20: Adjustable Damper: The portion section at the flue outlet of the appliance eliminates the necessity of using an adjustable damper in the flue pipe.

Section 21: Dampers, Permanently Kept Open: Where dampers are an integral part of the boiler or furnace, they shall be removed or permanently secured in the wide open position, except such dampers the function of which is to alter the passage of flue gases through the appliances, which shall be locked in such a position as not to interfere with the normal operation of the burners.

Section 22: Relocated: Flue pipes shall be relocated where necessary to avoid sharp turns or other constructional features which would create excessive resistance to the flow of the flue gases.

Section 23: Where Installed: Means shall be employed which will prevent the flue pipe from entering beyond the inner wall of the chimney flue. Flue pipe shall be cemented to the chimney wall so as to prevent infiltration of cold air.

Section 24: Baffles Not to be Used: No baffle shall be applied which will interfere with the proper combustion of the gas.

Section 25: Heating Surfaces: The heating surfaces shall be thoroughly cleaned before burners are installed.

Section 26: Gas Tight: The combustion chamber and all flue gas passage shall be gas tight.

Section 27: Doors: In converted burners, the fuel door of the heating appliance must be arranged to relieve passage due to puffs or backfire caused by delayed ignition.

Section 28: Installation: General: Gas burners of all types shall consist of factory assembled and tested units and shall be accompanied by complete and comprehensive installation and operation instructions. Space heaters and room heaters shall be of the vented type only.

Section 29: Directions Must be Followed: The burner or burners shall be located according to the manufacturer's instructions and shall be securely fastened in place to prevent twisting, sliding or dropping out of position.

Section 30: Accessible for Cleaning: The Burners shall be so installed so as to be readily accessible for cleaning and inspection.

Section 31: Prevent Incomplete Combustion: The burner or burners shall be so installed that no part of the flames impinge so as to cause incomplete combustion.

Section 32: Air Shutter Adjustment: Air shutters shall be adjusted to produce a good flame at the prevailing gas pressure.

Section 33: Secondary Air Openings: Where secondary air is necessary, secondary air opening or openings shall be provided or sufficient area to supply an adequate amount of air for complete combustion.

Section 34: Controls: Where an automatic secondary air control is provided, the construction shall be such that in case the control falls in any way, either the gas will be shut off or the secondary air door will remain open.

Section 35: Pilots: Either a thermostatic pilot, so constructed and adjusted that no gas can flow through the main burner unless the pilot flame is burning, or some other similar type of safety device serving the same end shall be employed. The operation of this safety device shall not depend on the closing of an electrical circuit to shut off the main gas supply.

Section 36: Fixed in Stationary Position: Pilot burners shall be supported in such manner that their position relative to the main burner or burners will be fixed.

Section 37: Accessible: Pilot burner or burners shall be so placed that they can be safely lighted and they shall be readily accessible or removable for cleaning.

Section 38: Lines To: Pilot lines shall be connected to vertical main gas supply lines or to the side or top of the horizontal lines ahead of all controls except pressure regulators and shall be susceptible to independent control.

Section 39: Thermostatic Safety: Thermostatic safety pilots shall be so adjusted that main gas supply will be shut off within three minutes after flame has been extinguished.

Section 40: Shut-off Valve Main: A manually operated shut-off valve shall be installed at each appliance to shut off the entire gas supply to the appliance in case of emergency.

Section 41: Location: Such valve shall be so located that it is readily accessible and shall be lever handly valve, or of such construction that the "open" and "closed" position is clearly indicated.

Section 42: Electric Control Valves: Electric control valves shall be installed according to the instructions furnished by the manufacturer and comply with the Electrical Ordinance.

Section 43: Gas Pressure Regulators: A gas pressure regulator shall be installed on all gas burners installation for heating purposes.

Section 44: Safety Devices: The boiler or furnace shall be equipped with safety devices arranged to limit high steam pressure or water temperature, as well as high air temperatures in warm air furnaces.

Section 45: Shall Be Independent of Shut-Off Main Gas Supply: Safety devices operated electrically shall not depend upon the closing of a circuit to shut-off the main gas supply. This requirement shall not be construed as prohibiting the use of electrical regulating devices, provided the required safety devices are also installed.

Section 46: Cut-off, Low Water: Each gas fired steam boiler shall be equipped with a low-water cut-off.

Section 47: Forced Primary Air Control: When air under pressure is used in connection with the gas supply, effective means shall be provided to prevent the air from going back into the gas piping.

Section 48: Piping, Fuel Lines to Burner: All gas piping installed for the service of the gas burners shall be of adequate size to supply the requirements of the heating system and shall be of sufficient size to deliver gas to the burner at a pressure in excess of the manifold pressure specified by the burner manufacturer.

Section 49: Adjustment of Pilot and Burners: After the piping has been thoroughly purged, the pilot burner shall be lighted and adjusted and the burners put into operation in accordance with the manufacturer's instructions.

Section 50: Pilot Operation: Pilot flames shall effectively ignite the gas at the main burner or burners and shall adequately be protected from drafts. A device which is at least equal in performance to the draft hoods hereinbefore provided for shall be interpreted as fulfilling the second part of this requirement as far as chimney drafts are concerned.

Section 51: Flames Not to be Extinguished: Pilot flames shall not become extinguished when the main burner or burners are turned on or off in a normal manner, either manually or by automatic controls.

Section 52: Luminous Flame: Luminous flame pilots shall be adjusted so as not to show carbon deposits.

Section 53: Electrical Devices, Approval: All automatic or electrical devices used in connection with the operation and repair of gas burners must be approved by the American Gas Association or some other nationally recognized board before a permit will be issued thereto to install such device.

Section 54: Gas Burners, Summer Cooling, How Equipped: Gas burners equipped with summer switches for cooling purposes must have a key type switch installed.

Section 55: Flame, Regulation of: The flame from each burner shall freely ignite the gas from adjacent burners or from each constant burning pilot, when operating at the prevailing gas pressure or when the main control valve is regulated to deliver about one third the full gas range, except where additional pilots are provided.

Section 56: Not to Flash: When ignition is made in a normal manner, the flames shall not flash outside the appliance.

Section 57: Not to Burn in Mixer: Burners shall not expel gas through air openings in mixer faces when operating at the prevailing pressure.

Section 58: Appliance, Operation, Oxygen, Concentration, Pressure: The concentration of oxygen in the flue products shall in no case be less than four per cent, not more than ten per cent. The rate of flow of the gas shall be adjusted to within plus or minus five per cent of the required hourly B.T.U. input rating at the manifold pressure specified by the manufacturer. When the prevailing pressure is less than the manifold pressure specified, the gas rate shall be adjusted to the prevailing pressure.



Section 59: Appliance, Method of Test: The appliance shall be allowed to operate until the stack temperature becomes stabilized, after which a sample of the flue products shall be taken at a point in the flue after the outlet of the appliance but ahead of the draft hood and analyzed for carbon dioxide and oxygen. No appliance installation showing carbon monoxide shall be approved.

Section 60: Checked by Inspector and Installer: The various controls of the appliance shall be checked by both inspector and installer to insure their proper operation.

Section 61: Instructions to the Customer: Suitable printed instructions shall be supplied by the installer and posted in a prominent position near the appliance.

Section 62: Suitable printed instructions shall be supplied by the installer and posted in a prominent position near the appliance.

Section 63: Direct Fire Unit Gas Heaters: Direct Fire Unit Gas Heaters may be used in Public garages and similar buildings and shall be of a type listed by the Department of the American Gas Association for use in garages and similar buildings; must be installed near the eave level at least 8 feet above the floor. All vents to extend 2 feet above roof with aerated nipple with stove cap on vent.

Section 64: Validity: Should any section, clause or provision of this code be held unconstitutional or invalid by any court, all other sections, clauses and provisions shall nevertheless be deemed effective just as though such unconstitutional or invalid action, clause or provision had never been inserted in this code.

Section 65: All Ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section 66: Any person, firm or corporation, violating any of the provisions of this ordinance shall be sentenced to pay a fine not to exceed one hundred dollars or to imprisonment for a period not to exceed thirty days or both such fine and imprisonment in the descretion of the Court.

Section 67: This Ordinance shall take effect on May 19, 1964 in accordance with Sec. 7.3 (D) Chapter 7 of the City Charter.