

shall be Class I roof coverings, or roof coverings of equal or greater fire resistance.

Roofs of buildings required to be of Type III, IV, V or VI construction shall have Class 2 roof coverings, or roof coverings of equal or greater fire resistance.

Roofs of Type VII buildings may be of any type of roofing permitted by this Code.

Section 10.6—FIRE STOPPING.

General Provisions.

10.601 Fire stops shall be provided at all intersections of all interior and exterior walls with floors and either ceilings or roofs in such a manner as to effectively cut off communication by fire through hollow concealed spaces and prevent both vertical and horizontal drafts. Such fire stopping shall be not less than 2 inches in nominal thickness. Where studs are continuous thru two stories fire stopping shall be provided both immediately above and below the joists.

Section 10.7—MISCELLANEOUS FIRE PROTECTION REQUIREMENTS

Supporting Members.

10.701. All members supporting construction, required to be of fire resistive construction, shall have a fire resistance rating equal or greater than that required for the construction they support.

Roof Structures.

10.702. Roof structures, such as pent-houses, bulkheads, and enclosures for tanks, stairways, elevators, or any other structure of similar character on a roof shall be of fire resistive construction throughout in type I and II buildings and in other construction wood shall be protected by incombustible material. All tanks shall be supported on steel or masonry construction.

CHAPTER XI

Chimneys and Heating Appliances

Section 11.—CHIMNEYS

General Requirements.

11.101 Chimneys shall be constructed and maintained so that when operated under the most severe service conditions they shall not cause the adjoining wood or other combustible material to attain a higher temperature than 125 degrees Fahrenheit. Chimneys shall be constructed in conformity with the following requirements.

Materials.

(a) The walls of all chimneys, whether the fuel used be coal, coke, wood, gas, or oil, shall be built of brick, concrete, stone, hollow tile of clay or concrete, or of concrete block of such thickness and construction as is hereinafter specified, but this shall not preclude the use of a metal smokestack when located inside of a vent shaft having masonry walls not less than 8 inches thick and having a 4 inch minimum air space between the walls and stack on all sides, nor of metal stacks placed outside the building.

Flue Linings.

(b) Flue linings shall be manufactured from fire clay or other suitable refractory clays, either natural or compounded, adapted to withstand reasonably high temperatures and flue gases, and shall have a softening point not lower than 1994 degrees Fahrenheit (Seger Cone 03).

Flue linings shall be of standard commercial thickness but not less than 3/8 inch. They shall be carefully bedded one upon another in mortar, with all joints left smooth on the inside.

Where flues change direction, the abutting linings at the angle joints shall be cut to fit closely, and at no point shall the cross sectional area be reduced. Not more than two lined flues shall be permitted in the same flue space, and the joints of any such adjoining flue linings shall be staggered at least 7 inches. When there are more than two flues in a chimney, at least each third flue shall be separated from the others by a smoke-tight withe or division wall of masonry or concrete not less than 3 1/2 inches thick and bonded into the chimney walls.

The flue linings shall be built up with the chimney walls. At all joints in the flue lining the spaces between the masonry and the lining shall be thoroughly slushed and grouted full of mortar as the masonry is laid. No cracked, broken or otherwise defective linings shall be used. Flue linings shall start from a point not less than 18 inches below the bottom of smoke pipe intakes, or in the case of fireplaces from the apex of the smoke chamber, and shall be continuous to the height required.

When any single flue, except fireplace flues, has an effective area exceeding 200 square inches, the walls shall be not less than 8 inches thick and shall have flue linings as previously specified, but when flues become so large as to render it impracticable to obtain fire clay flue linings such flues shall be lined with not less than 4 inches of fire brick for a distance of at least 25 feet from the point of the intakes.

Masonry Chimneys.

(c) Brick chimneys shall be built of good sound brick, or may be built of perforated radial brick manufactured for the purpose and adapted to withstand high temperatures, but no other hollow brick shall be used.

The walls of brick chimneys shall not be less than 3 3/4 inches thick and shall be lined.

Flue linings may be omitted in brick chimneys for residence buildings provided the walls of the chimneys be not less than 8 inches thick, and the inner core be of fire brick.

Perforated radial brick chimneys may be unlined, provided the brick have a softening point not less than 1994 degrees Fahrenheit (Seger Cone 03), and be not less than 7 1/2 inches in radial thickness, except that when such chimney is located inside a vent shaft having walls not less than 8 inches thick, the thickness of the chimney wall may be determined by engineering design. Such brick shall be shaped to the circular and radial lines of the various sections of the shaft so as to form uniform mortar joints.

Mortar Joints and Bond.

(d) All brick work shall be laid with full, flush-filled cross and bed joints. All portions of the masonry forming the chimney shall be thoroughly bonded together with masonry bond.

Miscellaneous Types.

Concrete chimneys cast in place shall be suitably reinforced vertically and horizontally. The walls shall not be less than 3 3/4 inches thick and shall have flue lining.

Special chimney blocks or bricks shall have walls not less than 3 3/4 inches thick and shall be properly lined with not less than 8 inches in solid thickness. When more than one flue is provided in a single concrete block, it shall have suitable embedded reinforcement completely encircling the block and each of its flues shall be lined.

Stone ashlar chimneys shall conform to the requirements for brick chimneys. Chimney walls of other stone shall be at least 4 inches thicker than required for sawed or dressed stone. All stone chimneys shall be properly bonded, or tied with non-corrodible metal anchors and shall have flue linings.

All stacks or chimneys shall be so designed and constructed that the stresses upon any part thereof shall not exceed the limits established by this Code.

Building Walls as Part of Chimneys.

(f) Masonry or concrete walls of buildings may form a part of a chimney when the chimney walls are securely bonded into the walls of the building and when the flue is lined the same as required for an independent chimney.

Hollow blocks or hollow building tile of clay or concrete shall not be used for the walls of independent chimneys, but may be used for chimneys built in connection with hollow masonry walls. The outer 8 inches of such walls may serve as a wall of the chimney, but the remainder of the chimney shall be constructed of not less than 2 thick-

nesses of 4 inch hollow block or tile set with staggered joints and having a total thickness of not less than 8 inches, or may be built of 4 inches of solid masonry. All such chimneys shall be properly lined.

Height.

(g) Chimneys shall be built at least 3 feet above flat roofs, and not less than 2 feet above the ridge of gable and hip roofs or the high point of mansards, irrespective of the distance of the chimney from such obstruction to draft. Unless provided with a stone, terra-cotta, concrete, cast iron or other special cap or top, the chimney lining shall project not less than 2 inches above the top course of masonry. No type of chimney top shall decrease the required flue area.

Chimney Supports.

(h) Chimneys shall be built upon concrete or solid masonry footings properly proportioned to carry the weight without danger of settlement or tracking. The footing for an exterior chimney shall start below the frost line.

Chimneys shall not rest upon or be carried by wooden floors, beams or brackets nor be hung or supported by metal struts from wooden construction.

The total offset, overhang or corbel of an independent chimney shall not project so as to cause tension in the masonry.

Corbelled chimneys shall not be supported by hollow walls, unless adequate provision is made for the distribution of the load.

Roof Connections.

(i) Connections between chimneys and roofs shall be made with sheet metal cap and base flashing arranged to allow for vertical or lateral movement between chimney and roof.

No increase of chimney wall thickness, nor any projecting masonry, nor set back, shall be permitted within a distance of 6 inches above or below the rafters or roof joists.

Smoke Pipe Connections.

(j) Smoke pipes shall enter the side of chimneys through a fire clay or metal thimble or flue ring of masonry. Two or more smoke pipes may connect to a single flue, or the vent from a gas burning device may connect to the same flue with a smoke pipe from any other heating appliance. The smoke pipes and flues shall be of sufficient size to serve all devices thus connected, and the chimneys to which such connections are made shall conform to the combined requirements for both such connections.

Required Flue Area.

(k) Ordinary and low pressure heating devices shall have a minimum effective flue area of not less than the following:

Small stoves and heaters.....	28 Sq. Inches
Stoves, Ranges and Room Heaters.....	40 Sq. Inches
with a minimum of.....	
Warm air furnaces, steam and hot water boilers.....	50 Sq. Inches
Flues for Gas Appliances.....	70 Sq. Inches

(l) Vent flues for hot water heaters, gas stoves, and other gas appliances shall be not less than 3 inches internal diameter and shall be of steel or wrought iron not lighter than standard pipe, or of vitrified clay or terra cotta pipe. Vitrified clay or terra cotta pipe, used as a vent flue, shall be used only as a lining in a masonry chimney. Such vent flues shall not be in contact with wood but shall be separated therefrom by 1/2 inch air space or 1/4 inch of asbestos. All such flues shall have tight joints and shall be carried to the outside of the building. A drain shall be provided at the bottom of the flue to adequately care for any condensation in the flue.

Mortar.

(m) Mortar used between the joints of flue linings and in the portions of a chimney above a roof or otherwise wholly exposed to the weather shall be mixed in proportion of one part portland cement to not more than three part of clean sand.

The brick, when required, shall be laid in fireclay mortar. All mortar used in chimney construction, except as specified above, shall be not leaner than the following mix by volume: one part portland cement, one part hydrated lime, six parts clean sand, thoroughly mixed to a uniform color before wetting. In lieu of hydrated lime, slaked putty lime may be dissolved in the mixing water.

Miscellaneous Requirements.

(n) After a chimney has been completed, all flues, intakes and cleanouts shall be thoroughly cleaned and left smooth on the inside.

When required by the Building Inspector, all flues to which ranges, heating furnaces, boilers, water heaters or fireplaces are to be connected may be subjected to a smoke test before acceptance, but the test shall not be made until the mortar has thoroughly seasoned. The method of the smoke is flowing freely from the flue, close it tightly at the top. Escape of smoke into other flues or through the chimney walls indicates openings that shall be made tight before the chimney is accepted. The test shall be made by the mason contractor in the presence of the Building Inspector.

The Building Inspector shall have the right to require the lengthening or alteration of any smoke stack, chimney or flue that may prove a nuisance to surrounding property.

Any chimney, smoke stack or flue which emits sparks in sufficient amount or size to cause a fire hazard to buildings or surrounding property shall be equipped with a spark arrester of such size and type to prevent the emission of such sparks.

Timber and other combustible materials shall not rest on or be supported by chimney walls. Steel or other incombustible structural members shall not be supported by the required thickness of chimney walls, but may be supported by masonry buttresses constructed integrally with the chimney.

Section 11.2—WOODWORK AROUND CHIMNEY

General Requirements.

11.201 Woodwork around chimneys shall be constructed so as to avoid danger from fire and shall be protected so as not to attain a temperature of exceeding 125 degrees Fahrenheit, under the most severe service conditions.

Clearance.

(a) No wooden beams, joists, rafters or studs shall be placed within 1 inch of chimney walls or the back of any fireplace.

Furring.

(b) No furring, lathing, plaster grounds, plugging or studding of combustible material shall be built into or placed within 1 inch of any chimney wall or the wall of any fireplace.

Section 11.3—SMOKE PIPES

General Requirements.

11.301 All smoke pipes shall be as short and straight as possible. Smoke pipes for furnaces and boilers shall be constructed of metal not less than 24 U. S. Gauge, except that smoke pipe for oil burning furnaces or boilers shall be not less than 22 U. S. Gauge, or of masonry, and shall fit tightly into the chimney.

Clearances.

(a) The top of smoke pipes shall be not less than 24 inches below or away from any combustible material, unless such combustible material is protected by a metal shield, with metal furring, provided a 2 inch air space, or equivalent protection, in which case the distance shall be not less than 6 inches. When a smoke pipe passes thru a combustible partition, all combustible material shall be kept at least 6 inches clear of such smoke pipe and protected with construction equivalent to that required above.

Section 11.4—FIREPLACES

Construction Requirements.

11.401 Fireplaces shall be constructed in accordance with the following provisions:

Wall Thickness.

(a) Fireplace walls shall be not less than 8 inches thick, and if

built of stone or hollow units shall be not less than 12 inches thick, up to the point where the flue lining commences. The faces of all walls exposed to fire shall be lined with brick, soapstone, cast iron, or other suitable fire resistive material. When lined with 4 inches of firebrick, such lining may be included in the required minimum thickness.

Mortar Joints.

(b) All joints between masonry units shall be flushed solid with mortar.

Mantel.

(c) No wooden mantel or other woodwork shall be placed within 4 inches of the jambs or of the top or arch of any fireplace opening, unless such woodwork is adequately protected.

Hearths.

All fireplaces and chimney breasts shall have masonry trimmer arches or other incombustible construction supporting hearths. Such arches and hearths shall be not less than 20 inches wide, measured from the chimney breast, and not less than 4 inches wider on each side than the fireplace opening. The hearths shall be of masonry not less than 4 inches thick. No wood construction shall be left under any hearth.

False Fireplaces.

(e) False fireplaces for gas heaters shall conform to all requirements for fireplaces. False fireplaces for electric heaters shall not be provided with a flue, and the sides, back and bottom of the fireplace shall be protected with 3/4 inch incombustible plasterboard and 1/4 inch of gypsum or portland cement plaster; the plaster to be reinforced with mesh weighing not less than 2 pounds per square yard, or equivalent construction.

Section 11.5—HEATING APPLIANCES

Warm Air Furnaces.

11.501 Warm air furnaces shall be encased in a double metal shield with an air space between and shall rest on masonry or concrete floor. No wood partition shall be built within 5 feet of the front or 2 feet of the sides of the outer shield of such furnaces, except that the ends are covered with the partitions on the sides may be reduced to 1 foot if they are covered with sheet metal with metal furring providing a 2 inch air space, or equivalent protection. The distance from the top shield of such furnace to any ceiling of combustible material shall be not less than 24 inches unless such ceiling is protected with sheet metal with metal furring providing a two inch air space, or equivalent protection, in which case the minimum distance shall be 6 inches.

Hot Air Piping.

(a) Hot air piping or ducts shall be of incombustible material and when placed within 6 inches of combustible material, if such pipes are of metal, shall have double walls providing not less than 1/4 inch air space, providing a single walled duct may be used if covered with 2 layers of asbestos paper weighing at least 8 pounds per 100 square feet, or equivalent protection.

Shut-offs.

(b) All hot air systems shall have at least 1 hot air register without valve or shut-off.

Steam and Hot Water Plants.

11.502 Steam and hot water plants shall rest on concrete or masonry foundations. The clearance of combustible materials shall be as required for warm air furnaces as established in Section 11.501. All such plants shall have proper protection to prevent any combustible material being heated to a temperature hotter than 125 degrees Fahrenheit.

Pipe Covering.

(a) All steam and hot water heating pipes or hot water supply pipes shall not be placed nearer to any combustible material than 2 inches unless protected by fire resistive covering of asbestos not less than 3/8 inch thick, or other equivalent protective covering.

Domestic Hot Water Heaters.

11.503 Domestic hot water heaters shall not be placed within 12 inches of any combustible material unless such combustible material is properly protected, in which case the minimum distance shall be 6 inches.

Hot water heaters shall not be used at a higher working pressure than that for which they are designed.

Miscellaneous Heating Appliances.

11.504 Stoves, gas ranges, hot plates, ovens and other heating appliances shall be installed and maintained as specified in Ordinance Number 185.

Oil Burners.

11.505 The use, handling, storage and sale of fuel oil, and the arrangement, design, construction and installation of burners, tanks and other equipment for the burning of fuel oil shall be in conformity with the requirements of this section.

Definition.

(a) For the purposes of this section the terms listed herein shall have the following meanings:

FUEL OIL shall mean any liquid used as fuel, and for equipment installed in accordance with the provisions of this section shall have a flash point of not less than 120 degrees Fahrenheit as determined by the Tag closed cup tester, as standardized by the Bureau of Standards.

FUEL OIL BURNERS shall mean any device, including burners, motors, piping, valves and other equipment designed and arranged for the purpose of burning fuel oil.

AUXILIARY TANK shall mean any tank between the storage tank and the burner delivering oil by gravity or pressure to the fuel oil burner or blower.

STORAGE TANK OR TANK shall mean any tank, having a capacity of more than 25 gallons, for the storage of oil, connected through some approved means directly to the fuel oil burner or indirectly connected to the fuel oil burner through an approved auxiliary tank.

Permit and Approval Required.

(b) Before any fuel oil burners, tanks and other equipment pertaining thereto shall be installed within the Village of Birmingham, the owner of such premises, or his agent, shall obtain from the Village Clerk a permit for the installation of such fuel oil burner and equipment and for the storage and use of fuel oil for the operation thereof. Upon issuing such permit the Clerk shall issue therewith a tag to be attached to the fill pipe of the tank. Such tag shall be a temporary permit for the operation of the oil burner for a period of not to exceed 30 days after the issuance of same, unless such permit is extended by written permission of the Building Inspector. When the installation is complete, or upon expiration of the temporary permit the Building Inspector shall inspect such installation and if found to be in conformity with this Code shall affix a metal tag which shall constitute a permit for the operation of such oil burner. If upon the expiration of the temporary permit, the installation does not conform to the requirements of this Code and the temporary permit is not extended, the Building Inspector shall remove the tag and the fuel oil burner shall not be operated nor fuel oil supplied to such installation until it is made to conform to the requirements of this Code.

Sale of Fuel Oil.

(c) No person shall supply with fuel oil any tanks or containers for fuel oil burners unless such fuel oil burners and equipment shall have been approved as provided herein and permit tag attached to the filler pipe of such tank or containers in the manner herein specified.

Tests.

(d) The tests and investigations of the Building Inspector shall cover the arrangement of parts, suitability of material, strength of parts, electrical control, thermostatic control, sensitiveness of automatic features, positiveness of ignition, safeguards against flooding, possibilities of explosion and hydrostatic or air pressure testing of storage tanks.