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**INDUSTRIAL COMMISSION
OF WISCONSIN**

**GENERAL ORDERS ON
FIRE PREVENTION**

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**INDUSTRIAL COMMISSION OF WISCONSIN
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INDUSTRIAL COMMISSION OF WISCONSIN

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INTRODUCTION

Chapter 501, laws of 1917, transferred all fire prevention activities to the Industrial Commission, and authorized the Commission as follows: "To make reasonable orders for the repair or removal of any building or other structure which for want of repair or by reason of age or dilapidated condition or for any other cause is especially liable to fire, and which is so situated as to endanger other buildings or property and for the repair or removal of any combustible or explosive material or inflammable conditions, dangerous to the safety of any building or premises or the occupants thereof or endangering firemen in case of fire."

The state fire marshal department had previously carried on this work and making use of their practice and experience the Industrial Commission prepared orders which were distributed for criticism at a public hearing held on December 31, 1917. These orders were then adopted by the Commission, printed in the official newspaper on January 11, 1918 and became effective February 10, 1918.

These orders are listed in this code as Orders 6050, 6055, 6060, 6061, 6062, 6063, 6066, 6070, 6080, 6140 and 6150.

In addition thereto the following orders from the General Orders on Existing Buildings pertaining to fire prevention are also included in order that this bulletin may serve as a convenient manual for ordinary fire department inspections: Orders 6000, 6001, 6025, 6030, 6031, 6032, 6033, 6034, 6035, 6036 and 6037. Also Order 653 of the General Orders on Explosives and Order 2220 of the General Orders on Sanitation are both made a part hereof.

GENERAL ORDERS ON FIRE PREVENTION

Definitions and General Requirements

Order 6000. Building Affected. These orders shall apply to all buildings except;

(1) Private residences, and outbuildings in connection therewith such as barns, garages, etc.

(2) Flat buildings used as the residence of two families only, provided not more than two persons are accommodated who are not members of the family.

(3) Buildings used for agricultural purposes which are not within the corporate limits of a city or village.

(4) Temporary buildings or sheds used for construction purposes only.

Provided, however, that if any building or structure, whether above exempted or not, is especially liable to fire, and is so situated as to endanger other buildings or property; or contains any combustible or explosive material dangerous to the safety of any building or premises or the occupants thereof, or endangering or hindering firemen in case of fire; then such building or structure shall be subject to these orders so far as may be necessary to protect adjoining or other buildings and their occupants and firemen.

Provided, further, that in the case of buildings which are subject to the requirements of the state building code (orders 5000 to 5799 of the Industrial Commission), the requirements of the building code shall prevail.

Order 6001. Local Regulations. These orders shall not be understood to limit the power of cities, villages and towns to make or enforce additional or more stringent regulations, provided the same do not conflict with these orders, or with any other order of the Industrial Commission.

Order 6025. Location and Maintenance of Exits. Every required exit (including stairways, fire escapes, horizontal exits and doors) shall lead to a street, alley or open court

connected with a street. All such exits, and all passageways leading to and from the same, shall be kept in good repair and unobstructed at all times.

BOILERS, FURNACES AND STOVES

Order 6030. Protection of Floor. Every existing boiler, furnace, or oven shall be placed on a fire-resistive floor projecting at least 2 feet on all sides. Such floor shall also be provided for every coal, wood, or oil stove or range which is more than 16 square feet in horizontal area or which has a flame at the bottom. If any such floor rests on or is in contact with any combustible material, then the fire-resistive floor layer shall be at least 3 inches thick and shall be hollow, with air spaces running horizontally through the same. The air spaces shall be open at both ends and shall be so placed that air can circulate through them; their horizontal area shall equal at least $\frac{1}{2}$ the horizontal area of the fire-resistive slab.

Note.—The purpose of these air spaces is to permit air to circulate through the fire-resistive slab and keep down its temperature. When a range or a heater rests on a solid layer of brick or concrete, it has been found that after several months the heat strikes through to the wood below. Many fires have been caused in this way. The air spaces may be secured by using hollow tile placed end to end; or by imbedding wrought or sheet iron pipes (say 3 inch diameter or larger) in a layer of concrete. The air spaces should run parallel to the short dimension of the slab.

If the stove, range, etc., is raised at least 6 inches above the floor and such air space is not enclosed, then the fire-resistive floor layer may be reduced to not less than 2 inch solid thickness, without air spaces, provided it is covered with sheet metal.

Every coal, wood or oil stove or range not more than 16 square feet in horizontal area and not having a flame at the bottom shall, if placed on a combustible floor, be raised at least 6 inches above the floor, and such air space shall not be enclosed. Such floor shall be protected with a stove board of sheet metal or asbestos, projecting at least one foot on all sides.

Gas stoves shall be protected as above specified, except that

(1) a three inch solid fire-resistive floor layer, projecting at least 6 inches on all sides shall be sufficient protection

if the stove has a false bottom at least 3 inches above such fire-resistive floor; and

(2) if the stove is less than 16 square feet in horizontal area and has a false bottom at least 5 inches above the floor, no fire-resistive floor shall be required.

Any new installation of a furnace or boiler in buildings covered by this code, together with the fuel room, shall be provided with not less than a two-hour fire-resistive floor, and further enclosed with not less than one-hour fire-resistive walls and ceiling. All openings will need to be protected with fire-resistive doors.

Order 6031. Protection of Walls and Ceiling; Repair; Fireplaces. Except as otherwise provided in Order 6030, every combustible wall, partition or ceiling which is less than 24 inches distant from a boiler, furnace, oven, stove, or range, shall be protected with at least $\frac{1}{4}$ inch asbestos board covered with galvanized sheet metal, or shall be protected with a metal shield with at least 4 inches air space behind the same, except as provided below. If the wall, partition, or ceiling is less than 12 inches distant from the boiler, furnace, oven, stove or range, then the woodwork and studs shall be cut away and replaced with incombustible material; or shall be otherwise protected as required by the Industrial Commission or the Fire Department.

The above distances may be reduced one-half in the case of stoves and ranges less than 16 square feet in area, and also in the case of gas ranges of greater area if proper insulation is incorporated in the back of the range.

The top of every boiler, furnace or oven, shall be covered with asbestos, sand, or other heat resisting material, or the required distance above same shall be increased 100 per cent.

All cracked, broken or otherwise defective stoves, furnaces and boilers, shall be repaired forthwith, and made safe, or shall be replaced with new ones.

All open fireplaces shall be protected by substantial wire screens.

SMOKE PIPES

Order 6032. No smoke pipe shall pass through any floor, outside window or door, nor through any combustible roof or combustible outside wall, nor through any closet, attic or similarly concealed space.

Every smoke pipe passing through a non fire-resistive partition shall be encased with incombustible material at least 4 inches thick or with a double safety thimble made of two concentric rings of sheet metal with at least one inch open air space between and with outer ring covered with at least $\frac{1}{4}$ inch asbestos.

Note.—The double thimble is of no value unless it is kept free from dirt. The best protection is a casing of solid masonry, with $\frac{1}{4}$ inch space between the masonry and the pipe.

No part of any smoke pipe shall be placed nearer to any combustible partition or wall than the diameter of the pipe, nor nearer to any combustible ceiling than one and one-half times the diameter; but the above distances may be reduced by one-half, if the wall or ceiling is covered with not less than $\frac{1}{4}$ inch asbestos board covered with galvanized sheet metal, or with equivalent protection as specified in Order 6011.

HOT AIR PIPES

Order 6033. Every hot air pipe contained in or passing through a combustible partition or floor, shall be covered with asbestos, or all wood within 2 inches of such pipe shall be protected with asbestos covered with sheet metal, unless such hot air pipe is double.

CHIMNEYS

Order 6034. No chimney shall rest upon a flooring of wood, nor shall any wood or other combustible material be built into or left in contact with any chimney.

All chimneys which are defective by reason of settling, cracking, disintegrating of mortar, or from any other cause, shall be repaired or rebuilt forthwith and made safe.

All chimneys constructed of tile, terra cotta, or brick on edge, shall be replaced by a substantial brick chimney.

All chimneys shall be thoroughly cleaned at least once each year.

Note.—For requirements applying to the construction, remodeling and repair of chimneys, see Order 5210 of the State Building Code issued by the Industrial Commission.

GAS AND OIL LAMPS; GAS SERVICE

Order 6035. Gas and oil lamps shall not be used where electricity is available.

Gas and oil lamps shall be placed at least 6 feet above the floor level, at least 6 inches from any combustible partition or wall, and at least 2 feet (measured from top of flame) below any combustible ceiling unless properly protected by a metal shield with at least 2 inches of air space above. Swinging brackets shall be provided with a guard or stop so that the light cannot come nearer to the partition or wall than one foot. In aisles and public passageways, every such light shall be protected by an incombustible guard unless the light is at least 7 feet above the floor. Gas and oil lights shall be kept at least 2 feet from any drape or window curtain.

Every gas supply main shall have a service cock outside of the building, so placed and maintained that it can be shut off at any time without entering the building.

ELECTRICAL WORK

Order 6036. All new electrical work shall conform to the Wisconsin State Electrical Code of the Industrial Commission.

All electrical wiring and installation which by reason of insufficient supports, defective insulation, contact with combustible materials, or with conductors of electricity, deterioration, faulty materials or from any other cause, is liable to cause fire, shall forthwith be overhauled, repaired or replaced, and made safe, and all such repair work shall be done as required by said Wisconsin State Electrical Code.

Electric cords shall not be hung on or be fastened with or come in contact with nails, staples, hooks, gas or water pipes, machinery or other metal supports.

Pendant lamps must be free from contact with furniture, machinery, posts or other fixtures.

Where portable electric lights must be used, the same shall be equipped with socket of non-combustible, non-absorbent insulating material, large handle of non-absorbent insulating material, basket guard, proper reflector and special heavy duty cord of the reinforced or similar type.

COMBUSTIBLE DRAPES, DECORATIONS

Order 6037. No drapes, curtains or decorations (except within a private apartment or a hotel guest room) of paper, cotton, cloth or any other combustible material shall be used in any building covered by this code unless effectively flame-proofed in an approved manner.

Exception. This requirement does not apply to drapes and decorations on display in retail establishments.

Where drapes, curtains or decorations are of a permanent or semi-permanent nature, there shall be affixed thereto a tag or other indication stating the date on which the flame-proofing was done and signed by the firm or person doing the work.

Note.—The ordinary methods of flame-proofing are only effective for a period of from 6 months to a year and for this reason the flame-proofing treatment must be renewed within this period.

Order 6050. Housekeeping. No combustible waste, rubbish or refuse shall be placed, kept or stored in any air, elevator or stair shaft, in closets or dark out-of-the-way places, around electric motors or machinery, or against steam pipes, or within 10 feet from any stove, boiler or furnace, or in any place where oils are used or stored.

All roofs shall be kept free from sawdust, shavings and all other combustible waste and rubbish.

Waste paper shall be baled whenever sufficient for one or more bales, or shall be stored in an isolated building or in a metal or metal-lined room, vault or bin with metal-lined door, or in a metal or metal-lined box, with self-closing cover.

Excelsior, hay, straw or other packing materials shall be stored as above provided, or destroyed.

No person or persons shall allow to remain longer than 36 hours or over one night in any alley, on any sidewalk, or on any premises within 25 feet from any building, any waste paper, excelsior, hay, straw, shavings, rubbish, trash or other like combustible materials or more than 6 empty boxes or barrels.

No hay, or straw shall be kept or stored either loose or in stacks, in the open, within a distance of 40 feet from any chimney or smokestack.

Shavings or other combustible absorbents shall not be used in cuspidors or for absorbing any soil, nor shall any wooden box or receptacle be used as cuspidor.

No person shall place or store ashes in any wooden box, barrel or container or upon any wooden floor or surface or against any wooden wall, partition, fence, post or in contact with any other woodwork.

No rubbish fire shall be built within 30 feet from any building, lumber, woodpile or wooden fence, in the open, or on a windy day.

Rubbish may be burned, not nearer than 15 feet to buildings, in a substantial burner built of boiler iron or of brick, well covered or screened to prevent the escape of sparks and burning embers. Such burner must be approved by the Chief of the fire department where there is one, otherwise by the Industrial Commission.

Cloth or paper cuttings shall be cleaned up and removed from the building at the close of each day's work, or shall be stored in a metal or metal-lined box with cover, or in a fireproof vault or room.

Order 6055. Old Buildings. Any buildings, which by reason of missing, rotten, or punky shingles on the roof, or other defects in the roof, or loose, missing and rotten siding, or needless wall openings, broken plastering, holes in floors, ceilings or partitions, or cracked or defective chimneys, or for any other cause is especially liable to fire, and which is so located as to endanger other buildings or property, shall be repaired forthwith, and put in safe and sound condition, or it shall be torn down and the material removed, but no such repairs shall be made in kind, form, manner, or extent

not authorized by local ordinance, nor shall such repairs be made when a building from any cause, is damaged to an extent of more than 50% of its sound value, but such building shall be torn down and the materials removed.

Note.—Refer to section 66.05 of Wisconsin Statutes 1935. Municipal Law. Razing of Buildings.

Order 6060. Oily Waste. Oily waste and oily rags, when not in actual use, during the day, shall be kept in approved, standard, self-closing metal waste cans, set firmly on three-inch legs. One such waste can shall be installed for every 2,500 square feet of floor area, on each floor, where oil waste or oily rags are used. The contents of all such waste cans shall be destroyed, burned or removed from the building at the close of each day's work.

Order 6061. Oily clothing. Oily or greasy clothing shall not be allowed to remain on wooden floors or work benches, nor placed in wooden lockers, or hung against wooden walls or partitions.

Note.—Well-ventilated, metal lockers are recommended.

Order 6062. Oil Drip Pans. Metal drip pans shall be placed under all oil barrels resting on wooden floors, platforms or supports, and under all machines using oil, to catch the oil drippings, and oily metal borings and shavings. The contents of such drip pans shall be burned or removed from the building each day.

When a printing press or other oil-bearing machine is placed on a combustible floor, such floor shall be covered with substantial sheet metal.

All combustible floors and platforms shall be kept free of oils, oil drippings and oily waste and rags.

Metal oil drip cups shall be placed under all shaft bearings, including elevator machinery, suspended from the ceilings.

Order 6063. Sweeping Compounds. Sweeping compounds within buildings shall be kept and stored in covered metal drums or containers.

Sweepings shall be immediately burned or deposited in approved metal receptacles.

Order 6066. Gasoline Engines. All stationary gasoline engines hereafter installed shall be placed upon incombustible floors, platforms or supports.

Existing installations of such engines on wooden floors are permitted to remain, provided the floor is protected with metal.

The gasoline engine room shall be kept free from dust, waste and combustible materials, needless grease or oil, and shall be lighted by incandescent electric lights, where electricity is available. No open flame or heat shall be permitted in such room.

The exhaust pipe of such engines shall extend to the outside, above the roof, if practicable, and in no case shall it exhaust within 6 feet from any building.

Where such exhaust pipe passes through any combustible wall, partition, ceiling or floor, a clearance of not less than 2 inches shall be provided around the pipe, and the exposed woodwork shall be protected by metal, or such pipe may run through a ventilated double metal thimble, having an air space of not less than 1 inch between the inner and outer rings of such thimble. Such exhaust pipes shall not be closer than 6 inches to any unprotected combustible wall, partition or woodwork.

Order 6070. Glue Pots and Soldering Furnaces. All glue pots and soldering furnaces, when in use, shall rest on an incombustible base, and there shall be no unprotected woodwork within 12 inches from the same.

Wooden work benches may be used as a base for the same, only when covered with metal over $\frac{1}{8}$ inch sheet asbestos, to a distance of not less than 18 inches beyond the pot or furnace on all sides.

Order 6080. Calcium Carbide. Calcium carbide shall be stored in covered, water-tight metal cans, outside of the main building in an isolated, well-ventilated building, under lock and key, and such carbide cans shall be raised above the floor not less than 2 inches to permit the free circulation of air. Not more than one such can shall be opened at one time, or until such can is used up.

Order 6140. Smokehouses. Every building used for smoking meat and located within a distance of 25 feet from any other buildings, shall have walls of brick, stone or concrete, not less than 8 inches thick, an incombustible floor and roof, and an iron door overlapping the door opening at least one inch at the top and on both sides with hinges and hasp embedded in the wall, and shall have a brick or metal vent or smoke flue to the outside, except as follows:

Small smokehouses for retail meat markets may be located in the basement or on the main floor of the building, if constructed of 8 inch brick wall or its equivalent, with roof of brick arch, tile or concrete, the flue to have 6 inch brick walls, the foundation and floor to be of incombustible materials, not less than three inches thick. If such smokehouse is placed on any wooden floor, then the smokehouse floor shall be built of incombustible material at least 5 inches thick, and shall have air spaces running horizontally through the same. The floor under the same shall be supported to safely carry such additional load.

Order 6150. Picker Rooms. Cotton, moss, hair, excelsior and other pickers and shredders shall be housed and operated in an isolated building, or in a room with fire-resisting ceiling, walls and floor, with self-closing, metal-clad doors.

A window or other outside ventilation shall be provided.

Such rooms shall be thoroughly cleaned up at the close of each day's work.

Where steam is available, a live steam jet shall be installed in each such room, and an approved chemical fire extinguisher shall be kept on the outside of the door leading to such room.

EXPLOSIVES

Note.—The following order is taken from General Orders on Explosives issued by the Industrial Commission. For the magazine quantity and distance table refer to the above publication.

Order 653. Storage of Explosives Within Cities and Villages.

(a) No nitroglycerin, dynamite, or other explosive preparations containing more than 60 per cent nitroglycerin or

explosives of equivalent sensitiveness shall be kept or stored in any building, storeroom, wareroom, or in or on any premises within the corporate limits of any city or village.

(b) Not more than a total quantity of 50 pounds of explosives shall be kept or stored in or on any premises within the corporate limits of any city or village. Such 50 pounds or less of such explosives shall be kept and stored in a magazine made of fire-resistive materials or of wood covered with sheet iron and mounted on wheels, and kept securely locked except when opened necessarily for use by authorized persons. Such magazine shall be plainly marked "Explosives" and located within the building, on the floor nearest the street level and within 10 feet from the street entrance.

(c) Not more than 50 pounds of gunpowder may be kept or stored in any building within the corporate limits of any city or village. Such gunpowder shall be kept and stored in closed metal cannisters of not more than 12½ pounds capacity each in a store or wareroom away from artificial light or heat, such place of storage to be approved by the Chief of the Fire Department.

(d) Where blasting operations within a city or village require larger quantities of explosives than those specified above, the Chief of the Fire Department may permit the keeping of larger quantities of such explosives in a portable magazine, but not in excess of the quantity actually needed for one day's operation.

(e) Not more than 5,000 blasting caps or detonators may be kept or stored within the corporate limits of any city or village. In no case shall explosives and blasting caps or detonators be kept or stored in the same magazine.

Blasting caps shall be kept or stored in a similar, but separate magazine, similarly placed, in accordance with the specifications provided for in paragraph (b) of this order.

(f) The Chief of the Fire Department shall be notified of the place, extent and manner of storage of explosives and blasting caps or detonators within the corporate limits of any city or village.

Order 2220. Cleaning Places of Employment. The employer shall provide a vacuum system to sweep and clean his place of employment when there is therein produced dusts of an explosive nature which are not so gathered that they are prevented from settling or gathering on the floors, walls, ceilings, equipment or materials.