

**INTRODUCED BY:** Councilmember Michael Glickert

**DATE:** November 13, 2017

**BILL NO. 9340**

**ORDINANCE NO. 7063**

**AN ORDINANCE FOR THE PURPOSE OF ESTABLISHING MINIMUM REQUIREMENTS AND STANDARDS FOR THE USE OF EXPLOSIVES AND EXPLOSIVES MATERIALS TO PROTECT HEALTH, SAFETY AND WELFARE WITHIN THE CITY OF UNIVERSITY CITY, MISSOURI; PROVIDING FOR THE ISSUANCE OF PERMITS; MAKING OF INSPECTIONS; COLLECTION OF PERMIT AND INSPECTION FEES; AND PROVIDING PENALTIES FOR THE VIOLATION THEREOF THROUGH THE ADOPTION OF THE EXPLOSIVES CODE OF THE COUNTY OF SAINT LOUIS, MISSOURI AS THE EXPLOSIVES CODE OF THE CITY OF UNIVERSITY CITY, MISSOURI.**

BE IT ORDAINED BY THE BY THE CITY COUNCIL OF THE CITY OF UNIVERSITY CITY, MISSOURI, AS FOLLOWS:

Section 1. The Explosives Code, as adopted by County of Saint Louis, Missouri through last amendatory ordinance 18,693, and approved November 12, 1997 by the County of Saint Louis, Missouri is hereby adopted as the Explosives Code of the City of University City Missouri, a copy of which is attached hereto, as if fully set out herein.

Section 2. All ordinances, parts of ordinances or provisions of the Municipal Code of the City of University City, Missouri in conflict with any provisions of this ordinance are hereby repealed.

Section 3. This ordinance, and the code adopted hereby, shall be in full force and effect from and after its passage and approval.


**PASSED and ADOPTED THIS 27<sup>th</sup> DAY OF NOVEMBER, 2017.**

  
MAYOR

ATTEST:

  
INTERIM CITY CLERK

CERTIFIED TO BE CORRECTED AS TO FORM:

  
CITY ATTORNEY





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711.010 Citation of Chapter.-- This chapter shall be known and may be cited as "The Explosives Code."

(O. No. 2703)

711.020 Definitions.-- When used in this chapter:

(1) *County* unless otherwise specified shall mean that part of St. Louis County outside of incorporated cities and towns and villages.

(2) *Director*: Shall mean the Director of Public Works of St. Louis County, Missouri, and shall include his authorized agents.



(3) *Explosives* and *explosive materials* when used herein shall mean gunpowder used for blasting, all forms of high explosives, fuses, detonators and other detonating agents, smokeless powders, and any chemical compound or mechanical mixture that is commonly used or intended for the purpose of producing an explosion containing any oxidizing and combustible units or other ingredients in such proportions, quantities, or packing, that ignition by fire, by friction, by concussion, by percussion, by detonation of, by any part of the compound or mixture may cause such a sudden generation of highly heated gasses that the resultant gas pressures are capable of producing destructive effects on contiguous objects or of destroying life or limb; but explosives shall not include small arms ammunition, gasoline, kerosene, or oils, greases or other petroleum products intended for lubrication purposes. For the purposes of this ordinance, explosives shall be classified as Class A, high explosives and Class B, low explosives and said classifications shall be as follows:

Class A, high explosives: Those explosives possessing detonating qualities such as dynamite, nitroglycerin, picric acid, lead azide, fulminate of mercury, smokeless powder, blasting caps and detonating primers.

Class B, low explosives: Those explosives not otherwise specified herein as Class A Explosives, including, but not limited to, explosives presenting a flammable hazard such as propellant explosives and photographic flash powder.

(4) *Blasting agent*: Shall mean any material or mixture consisting of a fuel and oxidizer intended for blasting, not otherwise classified herein as an explosive, in which none of the ingredients are classified as explosives provided that the finished product, as mixed and packaged for use or shipment, cannot be detonated by means of a No. 8 test blasting cap when unconfined.

(5) *Blasting Cap No. 8*: A No. 8 test blasting cap is one containing two (2) grams of a mixture of eighty (80) percent mercury fulminate and twenty (20) percent potassium chlorate or a cap of equivalent strength.

(6) *Pyrotechnics*: Shall mean and include any combustible or explosive composition or manufactured articles designated and prepared for the purpose of producing audible or visual effects which are commonly referred to as fireworks.

(7) *Person*: Shall mean any individual, firm, co-partnership, corporation, company, association, joint stock association, and including any trustee, receiver, assignee or personal representative thereof.

(8) *Singular* and *plural*: Words used in the singular number shall include the plural and in the plural the singular.

(9) *Small arms ammunition*: Shall mean any shotgun, rifle, pistol or revolver cartridge.

(10) *Scaled distance* shall mean the actual distance (in feet) to the nearest structure, divided by the square root of the maximum explosive weight (in pounds) per eight-millisecond (or greater) delay. If delay intervals less than eight (8) milliseconds are employed or if instantaneous blasting is employed, scaled distance shall be computed by dividing the actual distance (in feet) by the square root of the total explosive weight in pounds.

(11) *Uncontrolled structures* shall mean any building not owned or controlled by the explosives user.

(O. No. 17057, 6-6-94)

711.025 Contracting with Municipalities for Code Enforcement.-- The Director of Public Works, with the approval of the County Executive of St. Louis County, is hereby authorized to

contract with municipalities within St. Louis County, Missouri, to provide appropriate Explosives Code enforcement and further to collect fees for applicable permits, licenses and inspections issued or made pursuant to such contracts. Contracts shall be approved by the Director of Public Works and shall be approved as to legal form by the County Counselor. No contract shall be entered into until the municipality desiring to contract with St. Louis County for Explosives Code enforcement shall first have duly adopted appropriate legislation authorizing said contract (a certified copy to be attached to and made a part of the contract) and duly adopted an Explosives Code identical in substance to this code.  
(O. No. 18693, 11-12-97)

711.030 Explosives Control Advisory Board--Creation, Duties.-- There is hereby created an Explosives Control Advisory Board, composed of three (3) resident freeholders holding no other County Office who shall be appointed by the County Executive, subject to confirmation by the Council. Of the members appointed first, one (1) shall serve a term of one (1) year, one (1) a term of two (2) years, and one (1) a term of three (3) years, but thereafter all members shall serve for a term of three (3) years except those appointed to fill a vacancy occurring during the term of a member. Each of those appointed shall have had at least five (5) years' experience in the handling, manufacture, or use of explosives. The Explosives Control Advisory Board shall meet at least once a month and at such other times as may be set by the Board, or at the request of the Director and as may be determined by the Board, for the purpose of assisting and advising with the Director in connection with the provisions of this chapter.  
(O. No. 2703)

711.040 Scope.-- This chapter shall apply to the manufacture, storage, sale, transportation or use of explosives and blasting agents in the County. It shall not apply to the discharge of small arms ammunition when discharged in connection with hunting or target shooting or other lawful uses connected with firearms.  
(O. No. 2703)

711.050 Exception--Military or Governmental Use.-- Nothing contained in this chapter shall be construed as applying to the regular military or naval forces of the United States, the duly authorized Militia of the State, the Police or Fire Departments or to regular employees of the County in the proper performance of their official duties.  
(O. No. 2703)

711.060 Exception--Amount of Explosives.-- It shall be unlawful for any person to possess, store, stock or hold for resale, any amount of explosives, blasting agents or blasting caps unless such person has first obtained a written permit therefore from the Director as hereinafter provided, except for the following items and amounts:

- (1) Thirty (30) pounds of smokeless powder and one thousand (1,000) small arms primers for hand loading of small arms ammunition.
- (2) Thirty (30) pounds of explosives or blasting agents in industrial research laboratories and laboratories of technical institutes, colleges, universities and similar institutions.
- (3) Pyrotechnics which shall be governed by other ordinances of the County.

(O. No. 10039, 1-9-81)

711.070 Permit--Storage of Explosives--Requirements.-- Application for such permit to possess, store, stock or hold for sale those items specified in Section 711.070 hereof shall be made to the Director at the Courthouse on forms provided and shall contain the following information:

- (1) Name of applicant.
- (2) Address of residence.
- (3) Place of business.
- (4) Occupation.
- (5) Age.
- (6) Experience in the use of explosives and such other information relative thereto as the Director may prescribe or require.
- (7) Maximum amount of each kind of explosives, blasting agents or blasting caps applicant intends to store or stock at any one time and the location and type of construction of the magazine or storage place of same.

(O. No. 10039, 1-9-81)

711.080 Permit Shall Be Granted--When.-- A person shall be entitled to a permit to store or stock explosives or blasting agents in the County who has met the following requirements:

- (1) Filed an application as provided in Section 711.070 hereof.
- (2) Secured whatever construction, occupancy or other permits which the applicant may otherwise be required by law to obtain.
- (3) Obtained a proper storage facility for the storage of such explosives as the same may be required by this chapter.

(O. No. 10038, 1-9-81)

711.090 Storage of Explosives.-- 1. No person shall store any explosive materials in a manner not in conformity to this chapter.

2. Any change, addition, or modification to an approved storage facility shall not be made unless authorized by a new permit under Section 711-080.

(O. No. 10039, 1-9-81)

711.100 Types of Storage Facilities.-- For purposes of this chapter, there shall be five (5) types of storage facilities. These types, together with the classes of explosive materials which shall be stored therein, are as follows:

(a) *Type 1 storage facilities.* Permanent storage facilities for the storage of high explosives, subject to the limitations prescribed by sections 711.130 and 711.146. Other classes may also be stored therein.

(b) *Type 2 storage facilities.* Portable indoor and outdoor storage facilities for the storage of high explosives, subject to the limitations prescribed by sections 711.130, 711.134(b) and 711.146. Other classes may also be stored therein.

(c) *Type 3 storage facilities.* Portable outdoor facilities for the temporary storage of high explosives while attended (for example, a "day-box"), subject to the limitations prescribed by sections 711.130 and 711.146. Other classes may also be stored therein.

(d) *Type 4 storage facilities.* Facilities for the storage of low explosives, subject to the limitations prescribed by sections 711.130(b), 711.138(b) and 711.146. Blasting agents may also be stored therein.



(e) *Type 5 storage facilities.* Facilities for the storage of blasting agents, subject to the limitations prescribed by sections 711.130(a) and (c), 711.140(b), and 711.146.  
(O. No. 10039, 1-9-81)

711.110 *Inspection of Storage Facilities.*-- Any person storing explosive materials shall open and inspect his storage facilities at intervals not greater than three (3) days to determine whether the explosives therein are intact and to determine whether there has been unauthorized entry or attempted entry into the storage facilities or the unauthorized removal of facilities or their contents.  
(O. No. 10039, 1-9-81)

711.115 *Storage Records to Be Kept.*-- Records shall be kept of all Class A high explosives when such are kept in or on any premises in the portions of the County covered by this chapter or when stored in facilities licensed under the terms of this chapter. Such records shall consist of:

- a. Quantities of all materials entering or leaving the facility.
- b. Dates and times of all material entering or leaving the facility or premise.
- c. A description, brand name and serial number(s) of all involved material.
- d. Names of the person(s) removing any involved material and the reason for the removal.
- e. Any other information that the Director may require in a written notification to the licensee or permittee.

Such written records shall be kept at or near the storage facility and shall be available at all times to the Director or his agent.  
(O. No. 10039, 1-9-81)

711.120 *Removal of Explosive Materials.*-- All explosive materials must be kept in storage facilities meeting the standards prescribed by this chapter unless they are:

- (a) In the process of manufacture, or
- (b) Being physically handled in the operating process of a licensee or user, or
- (c) Being used, or
- (d) Being transported to a place of storage or use by a permittee or by a person who has lawfully acquired explosive materials in the manner required by this chapter.

(O. No. 10039, 1-9-81)

711.130 *Location of Storage Facilities.*-- (a)(1) Except as otherwise provided in this chapter, storage facilities in which any explosive materials are stored shall be located at minimum distances from inhabited buildings, passenger railways, public highways, and from other storage facilities in which explosive materials are stored as specified in the American Table of Distances (Appendix A). Provided, that this table shall not apply to any indoor storage facility. When a storage facility is not barricaded, the distances shown in the American Table of Distances shall be doubled. For purposes of this paragraph, a storage facility shall be deemed barricaded when it is effectually screened from inhabited buildings, passenger railways, public highways, and other storage facilities in which explosive materials are stored either by a natural or artificial barricade of such height that a straight line from the top of any side wall of the storage facility to the eave line of such other inhabited building or storage facility, or to a point twelve (12) feet above the center of a passenger railway or public highway, will pass through such intervening barricade.



(2) If any two (2) or more storage facilities are separated from each other by less than the distances specified in Appendix A, then such two (2) or more storage facilities, as a group, shall be considered as one storage facility, and the total quantity of explosive materials stored in such group shall be treated as if stored in a single facility and shall comply with the minimum of distances specified in Appendix A from other storage facilities, inhabited buildings, passenger railways, and public highways.

(b) Storage facilities in which low explosives are stored shall be located at minimum distances from inhabited buildings, passenger railways, public highways, and from other storage facilities in which explosive materials are stored as specified in the table of distances for storage of low explosives as set forth in 27 CFR Section 181.199. Provided, that this table shall not apply to any indoor storage facility. The distances shown therein shall not be reduced by the presence of barricades.

(c) Ammonium nitrate and storage facilities in which blasting agents are stored shall be located at minimum distances from storage facilities containing high explosives or blasting agents as specified in the Table of Recommended Separation Distances of Ammonium Nitrate and Blasting Agents from Explosives or Blasting Agents as set forth in 27 CFR Section 181.200. (O. No. 10039, 1-9-81)

711.132 Construction of Type 1 Storage Facilities.-- A type 1 storage facility shall be a permanent structure: a building, an igloo or Army-type structure, a tunnel, or a dugout. It shall be bullet-resistant, fire-resistant, weather-resistant, theft-resistant, and well ventilated.

(a) *Buildings.* All building-type storage facilities shall be constructed of masonry, wood, metal, or a combination of these materials and shall have no openings except for entrances and ventilation. Ground around such storage facilities shall slope away for drainage.

(1) *Masonry wall construction.* Masonry wall construction shall consist of brick, concrete, tile, cement block, or cinder block and shall be not less than six (6) inches in thickness. Hollow masonry units used in construction shall have all hollow spaces filled with well-tamped coarse dry sand or weak concrete (a mixture of one (1) part cement and eight (8) parts of sand with enough water to dampen the mixture while tamping in place). Interior walls shall be covered with a nonsparking material.

(2) *Fabricated metal wall construction.* Metal wall construction shall consist of sectional sheets of steel or aluminum not less than number 14 gauge, securely fastened to a metal framework. Such metal wall construction shall be either lined inside with brick solid cement blocks, hardwood not less than four (4) inches in thickness, or shall have at least a six-inch sand fill between interior and exterior walls. Interior walls shall be constructed of or covered with a nonsparking material.

(3) *Wood frame wall construction.* The exterior of outer wood walls shall be covered with iron or aluminum not less than number 26 gauge. An inner wall of nonsparking material shall be constructed so as to provide a space of not less than six (6) inches between the outer and inner walls, which space shall be filled with coarse dry sand or weak concrete.

(4) *Floors.* Floors shall be constructed of a nonsparking material and shall be strong enough to bear the weight of the maximum quantity to be stored.

(5) *Foundations.* Foundations shall be constructed of brick, concrete, cement block, stone, or wood posts. If piers or posts are used, in lieu of a continuous foundation, the space under the buildings shall be enclosed with metal.

(6) *Roof.* Except for buildings with fabricated metal roofs, the outer roof shall be covered with no less than number 26 gauge iron or aluminum fastened to seven-eighth-inch sheathing.

(7) *Bullet-resistant ceilings or roofs.* Where it is possible for a bullet to be fired directly through the roof and into the storage facility at such an angle that the bullet would strike a point below the top of inner walls, storage facilities shall be protected by one of the following methods:

(i) A sand tray shall be located at the tops of inner walls covering the entire ceiling area, except that necessary for ventilation, lined with a layer of building paper, and filled with not less than four (4) inches of course dry sand.

(ii) A fabricated metal roof shall be constructed of three-sixteenth-inch plate steel lined with four (4) inches of hardwood. (For each additional one-sixteenth-inch of plate steel, the hardwood lining may be decreased one (1) inch.)

(8) *Doors.* All doors shall be constructed of one-fourth-inch plate steel and lined with two (2) inches of hardwood. Hinges and hasps shall be attached to the doors by welding, riveting or bolting (nuts on inside of door). They shall be installed in such a manner that the hinges and hasps cannot be removed when the doors are closed and locked.

(9) *Locks.* Each door shall be equipped with two (2) mortise locks; or with two (2) padlocks fastened in separate hasps and staples; or with a combination of mortise lock and a padlock; or with a mortise lock that requires two (2) keys to open; or a three-point lock. Locks shall be five-tumbler proof. All padlocks shall be protected with one-fourth-inch steel caps constructed so as to prevent sawing or lever action on the locks or hasps. All doors shall be kept locked at all times, except during placement and removal of stocks of explosives, or during repairs to storage facilities.

(10) *Ventilation.* Except at doorways, a two-inch air space shall be left around ceilings and the perimeter of floors. Foundation ventilators shall be not less than four (4) by six (6) inches. Vents in the foundation, roof, or gables shall be screened and offset.

(11) *Exposed metal.* No sparking metal construction shall be exposed below the top of walls in the interior of storage facilities, and all nails therein shall be blind-nailed or countersunk.

(b) *Igloos, Army-type structures, tunnels, and dugouts.* Igloo, Army-type tunnel, and dugout storage facilities shall be constructed of reinforced concrete, masonry, metal, or a combination of these materials. They shall have an earth mound covering of not less than twenty-four (24) inches on the top, sides and rear. Interior walls and floors shall be covered with a nonsparking material. Storage facilities of this type shall also be constructed in conformity with the requirements of paragraph (a)(4) and paragraphs (a)(8) through (11) of this section.

(O. No. 17057, 6-6-94)

711.134 Construction of Type 2 Storage Facilities.-- A type 2 storage facility shall be a box, a trailer, a semitrailer or other mobile facility. It shall be bullet-resistant, fire-resistant, weather-resistant, theft-resistant, and well ventilated. Except as provided in paragraph (c) of this section, hinges and hasps shall be attached to the covers or doors in the manner prescribed in Section 711.132(a)(8) and the locking system shall be that prescribed in Section 711.132(a)(9).

(a) *Outdoor storage facilities.* Outdoor storage facilities shall be at least one (1) cubic yard in size and supported in such a manner so as to prevent direct contact with the ground. The sides, bottoms, tops, and covers or doors shall be constructed of one-fourth-inch steel and shall be lined with two (2) inches of hardwood. Edges of metal covers shall overlap sides at least one inch. The ground around such storage facilities shall slope away for drainage. When unattended, vehicular



storage facilities shall have wheels removed or shall be otherwise effectively immobilized by kingpin locking devices or other methods approved by the Director.

(b) *Indoor storage facilities.* No indoor facility for the storage of high explosives shall be located in a residence or dwelling. When located in a warehouse, wholesale, or retail establishment, such storage facilities shall be provided with substantial wheels or casters to facilitate removal therefrom. No more than two (2) indoor storage facilities shall be kept in any one (1) building. Two (2) storage facilities may be kept in the same building only when one (1) is used for the storage of blasting caps, squibs, or similar items and the other facility is used for the storage of other high explosives. Each storage facility shall be located on the floor nearest the ground level and within ten (10) feet of an outside exit. Indoor storage facilities within one building shall be separated by a distance of not less than ten (10) feet. No indoor storage facility shall contain a quantity of high explosives in excess of fifty (50) pounds or more than five thousand (5,000) blasting caps. Indoor facilities shall be of wood or metal construction as prescribed in paragraphs (b)(1) or (2) of this section.

(1) *Wood construction.* Wood indoor storage facilities shall have sides, bottoms, and covers or doors constructed of two-inch hardwood and shall be well braced at corners. They shall be covered with sheet metal of not less than number 20 gauge. Nails exposed to the interior of such facilities shall be countersunk.

(2) *Metal construction.* Metal indoor storage facilities shall have sides, bottoms, and covers or doors constructed of number 12 gauge metal and shall be lined inside with a nonsparking material. Edges of metal covers shall overlap sides at least one inch.

(c) *Cap boxes.* Storage facilities for blasting caps in quantities of one hundred (100) or less shall have sides, bottoms, and covers constructed of number 12 gauge metal and lined with a nonsparking material. Hinges and hasps shall be attached thereto by welding. A single five-tumbler proof lock shall be sufficient for locking purposes.

(O. No. 10039, 1-9-81)

711.136 Construction of Type 3 Storage Facilities.-- A type 3 storage facility shall be a "day-box" or other portable facility. It shall be constructed in the same manner prescribed for type 2 outdoor storage facilities in Section 711.134(a), except that it may be less than one cubic yard in size, and shall be bullet-resistant, fire-resistant, weather-resistant, theft-resistant, and well ventilated. Hinges, hasps, locks, and lock protection shall be in conformity with the requirements of Section 711.132(a)(8) and (9). The ground around such storage facilities shall slope away for drainage. No explosive materials shall be left in such facilities if unattended. The explosive materials contained therein must be removed to types 1 or 2 storage facilities for unattended storage.

(O. No. 10039, 1-9-81)

711.138 Construction of Type 4 Storage Facilities.-- A type 4 storage facility may be a building, an igloo or Army-type structure, a tunnel, a dugout, a box, a trailer, or a semi-trailer or other mobile facility and shall be fire-resistant, weather-resistant, and theft-resistant. It shall be constructed of masonry, metal-covered wood, fabricated metal, or a combination of these materials. The walls and floors of such storage facilities shall be lined with a nonsparking material. The doors or covers shall be metal or solid wood covered with metal. The foundations, locks, lock protection, hinges, hasps, and interior shall be in conformity with the requirements of Section 711.132(a)(5), (8), (9), and (11).

(a) *Outdoor storage facilities.* The ground around such storage facilities shall slope away for drainage. When unattended, vehicular storage facilities shall have wheels removed or shall be otherwise effectively immobilized by kingpin locking devices or other methods approved by the Director.

(b) *Indoor storage facilities.* No indoor facility for the storage of low explosives shall be located in a residence or dwelling. When located in a warehouse, wholesale, or retail establishment, such storage facilities shall be provided with substantial wheels or casters to facilitate removal therefrom. No more than one indoor storage facility shall be kept in any one building. It shall be located on the floor nearest the ground level and within ten (10) feet of an outside exit. No indoor storage facility shall contain a quantity of low explosives in excess of fifty (50) pounds.

(O. No. 10039, 1-9-81)

711.140 Construction of Type 5 Storage Facilities.-- A type 5 storage facility may be a building, an igloo or Army-type structure, a tunnel, a dugout, a bin, a box, a trailer, or a semitrailer or other mobile facility and shall be theft-resistant. The doors or covers thereof shall be solid wood or metal. The hinges, hasps, locks, and lock protection shall be in conformity with the requirements of Section 711.132 (a)(8) and (9).

(a) *Outdoor storage facilities.* The ground around such storage facilities shall slope away for drainage. When unattended, vehicular storage facilities shall have wheels removed or shall be otherwise effectively immobilized by king-pin locking devices or other methods approved by the Director.

(b) *Indoor storage facilities.* No indoor storage facility for the storage of blasting agents shall be located in a residence or dwelling.

(O. No. 10039, 1-9-81)

711.143 Smoking and Open Flames.-- Smoking, matches, open flames, and spark-producing devices shall not be permitted in, or within fifty (50) feet of, any outdoor storage facility.

(O. No. 10039, 1-9-81)

711.146 Storage of Blasting Caps.-- Blasting caps shall not be stored with other explosive materials in the same storage facility.

(O. No. 10039, 1-9-81)

711.150 Storage Within Types 1, 2, 3, and 4 Facilities.-- (a) Explosive materials within a storage facility shall not be placed directly against interior walls. Any devices constructed or placed within a storage facility shall not interfere with ventilation.

(b) Containers of explosive materials shall be stored by being laid flat with top sides up. Corresponding classes, grades, and brands shall be stored together within a storage facility in such a manner that class, grade, and brand marks are easily visible upon inspection. Stocks of explosive materials shall be stored so as to be easily counted and checked.

(c) Except with respect to fiberboard containers, containers of explosive materials shall not be unpacked or repacked inside a storage facility or within fifty (50) feet thereof, and shall not be unpacked or repacked in close proximity to other explosive materials. Containers of explosive materials shall be securely closed while being stored.



(d) Tools used for opening or closing containers of explosive materials shall be of nonsparking materials, except that metal slitters may be used for opening fiberboard containers. A wood wedge and a fiber, rubber, or wooden mallet shall be used for opening or closing wood containers of explosive materials. Metal tools other than nonsparking transfer conveyors shall not be stored in any storage facility containing high explosives.

(O. No. 10039, 1-9-81)

711.160 Transportation of Explosives in County--Duties of Consignee.-- When explosives or blasting agents are brought into the County by railroad or other conveyance or means of transportation, for delivery to a consignee, the person in charge of such delivery for such railroad or public conveyance shall notify the consignee immediately upon arrival of such explosives at a railroad station or any other place customarily used by public conveyance for receipt and delivery of shipments, and if said consignee does not remove said explosives from said location within twenty-four (24) hours after such notification, then the person in charge of such railroad station or other conveyance shall immediately notify the Director, and shall remove said explosives beyond the limits of the County, or to a magazine authorized by the Director. The time allowance may be extended by special written permission from the Director, when the Director determines that conditions beyond the control of the consignee prevent the consignee from complying with the provisions of this section.

(O. No. 2703)

711.170 Failure to Remove Explosives on Arrival--Unlawful.-- It shall be unlawful for any owner, consignee, agent or employee thereof, having been notified of the arrival of the shipment of explosives as provided in Section 711.160 above, to fail to remove or cause the removal of said explosives within twenty-four (24) hours after receipt of said notice or by the time set by the Director, to some place meeting the requirements of this ordinance.

(O. No. 2703)

711.180 Transportation of Explosives--General Provisions.-- 1. Explosives shall not be transported through any prohibited vehicular tunnel, subway or over any prohibited bridge, roadway or elevated highway.

2. No person shall smoke, carry matches or any other flame-producing device, or carry any firearms or loaded cartridges while in or near a motor vehicle transporting explosives; or drive, load or unload such vehicle in a careless or reckless manner.

3. Explosives shall not be carried or transported in or upon a public conveyance or vehicle carrying passengers for hire.

4. Explosives may be loaded into and transported on any truck and a full trailer attached thereto provided that there shall be no more than one truck and one trailer comprising the combination.

5. Explosives shall not be transferred from one vehicle to another within the County without first informing the Director and the St. Louis County Police Department. In the event of breakdown or collision, the Director and the St. Louis County Police Department shall be promptly notified to help safeguard such emergencies. Explosives shall be transferred from the disabled vehicle to another only when proper and qualified supervision is provided.

6. It shall be unlawful for any person to transport, haul or otherwise convey blasting caps on the streets and highways of the County on the same vehicle with explosives except that not more than fifty (50) pounds of explosives and not more than twenty-five (25) blasting caps may be

transported on the same vehicle if the blasting caps are transported in a container approved by the Director.  
(O. No. 2703)

711.190 Transportation Vehicles--Requirements.-- 1. Vehicles used for transporting explosives shall be strong enough to carry the load without difficulty and be in good mechanical condition. If vehicles do not have a closed body, the body shall be covered with a flame-proof and moistureproof tarpaulin or other effective protection against moisture and sparks. All vehicles used for the transportation of explosives shall have tight floors and any exposed spark-producing metal on the inside of the body shall be covered with wood or other nonsparking materials to prevent contact with packages of explosives. Packages of explosives shall not be loaded above the sides of an open-body vehicle.

2. Every vehicle used for transporting explosives shall be marked or placarded on both sides, front and rear with the word "Explosives" in letters not less than three (3) inches in height in contrasting and clearly readable colors. In addition to such marking or placarding, the vehicle may display, in such a manner that it will be readily visible from all directions, a red flag eighteen (18) inches by thirty (30) inches, with the word "Explosives" painted, stamped or sewed thereon in white letters at least six (6) inches in height.

3. Every motor vehicle used for transporting explosives shall be equipped with one of the following minimum fire extinguishing units:

- (1) One 2A 40BC fire extinguishing unit; or
- (2) Two (2) 2A 20BC fire extinguishing units.

Only extinguishers listed or approved by Underwriters' Laboratories, Inc., Underwriters' Laboratories of Canada, Factory Mutual Laboratories or by some other nationally recognized fire equipment testing laboratory, shall be deemed suitable for use on explosive-carrying vehicles. Extinguishers shall be filled and ready for immediate use and located near the driver's seat. Extinguishers shall be examined periodically by a competent person.

4. All motor vehicles used for transporting explosives shall meet the following requirements for safe transportation of explosives:

- (1) Fire extinguishers shall be filled and in working order.
- (2) All electrical wiring shall be completely protected and securely fastened to prevent short circuiting.
- (3) Chassis, motor, pan and underside of body shall be reasonably clean and free of excess oil and grease.
- (4) Fuel tank and feed line shall be secure and have no leaks.
- (5) Brakes, lights, horn, windshield wipers and steering apparatus shall function properly.
- (6) Tires shall be checked for proper inflation and defects.
- (7) The vehicle shall be in proper condition in every other respect and acceptable for handling explosives.

5. Vehicles transporting explosives shall only be drive by, and be in charge of, a driver who is physically fit, careful, capable, reliable, able to read and write the English language, and not addicted to the use or under the influence of intoxicants or narcotics, and not less than twenty-one (21) years of age. He shall be familiar with the traffic regulations, state laws and the provisions of this chapter.

6. Except under emergency conditions, no vehicle transporting explosives shall be parked before reaching its destination, even though attended, on any public street adjacent to, or in

proximity to, any bridge, tunnel, dwelling, building or place where people work, congregate or assemble.

7. No spark-producing metal, spark-producing metal tools, oils, matches, firearms, electric storage batteries, flammable substances, acids, oxidizing materials or corrosive compounds shall be carried in the body of any motor truck and/or vehicle transporting explosives.

8. Vehicles transporting explosives shall avoid congested areas and heavy traffic. Where routes through congested areas have been designated, such routes shall be followed.

9. Delivery shall only be made to authorize persons and/or into authorized magazines or approved temporary storage or handling areas.

(O. No. 10039, 1-9-81)

711.200 Permit to Explode or Blast Required, Blaster's License.-- 1. It shall be unlawful, without first having received a permit from the Director, to explode or cause to be exploded, any gunpowder, dynamite, giant powder, gun cotton or other explosive for the purpose of blasting out rock, gravel, earth or other like substance within the County.

2. No person shall use or detonate explosives unless he is in possession of a valid license, obtained from the Director, to use explosives for blasting purposes. This license shall be known as a blaster's license. For the purpose of this chapter, the Director is authorized to publish qualifications necessary for an applicant to obtain a blaster's license. Such qualifications shall take into consideration age, training, education, and experience in the knowledge and use of explosives and shall include a written examination. A license shall be issued by the Director to any applicant meeting the requirements set forth by the Director for such a license.

3. The handling of explosives may be performed by other employees provided the work is done under the direct supervision of the person holding the permit to use explosives and providing such employees are at least twenty-one (21) years of age.

4. The person possessing a valid blaster's license shall be in charge of all blasting operations. If there is more than one person possessing such a license on any one operation, one will be designated as being blaster in charge and shall be responsible for the entire operation.

(O. No. 2703)

711.210 Application for Permit to Blast--Requirements.-- Application for a permit to use explosives shall be made to the Director at the Courthouse on forms provided and shall contain the following information:

(1) Name of applicant.

(2) Address of residence.

(3) Place of business.

(4) Occupation.

(5) Age.

(6) The location where the blasting is to be done, the type of blasting material to be used in each charge, the number and location of charges and the manner in which the material is to be detonated.

(7) The time and date of blasting when requested by the Director.

(8) The name, age and address of the blaster or blasters who shall be the person or persons who shall actually detonate or have actual charge of the detonation of any explosive or blasting agent.

(9) Blaster's license number.



(10) When blasting operations are conducted on a continuous basis, such as quarry blasting and construction work, the Director may, in lieu of (6), above, direct that the applicant furnish the location where blasting is to be done, the type of blasting material generally used, the approximate frequency of detonations based on past performance and the manner in which the explosives are to be detonated.

In addition to the above information, there shall be attached to the application for a permit to blast, the following: A certificate of liability insurance in the minimum amount of five hundred thousand dollars (\$500,000.00) for injury to persons and property resulting from the blasting operations. Such insurance shall be carried in a firm or corporation which has been duly licensed or permitted to carry on such business in the State of Missouri and shall be kept and maintained continuously in force and effect for the duration of the blasting permit.

(O. No. 10039, 1-9-81)

711.220 Blasting--Rules and Regulations.-- All blasting operations within the County shall be conducted in strict accordance with the following rules and regulations and it shall be unlawful for any person to fail to observe and follow said rules and regulations when blasting. In the event there is a violation of said rules and regulations, the Director shall have the power and it shall be his duty to revoke the blasting permit issued in connection with the operation, revoke the license of the blaster in charge, all in accordance with the terms of this chapter, and in addition, the violator or violators may be punished as otherwise provided by this chapter for violations thereof.

(1) Blasting operations shall be carried on with the smallest possible number of persons present.

(2) All drill holes shall be of sufficient size so that the cartridges of explosives can be easily inserted to the bottom of the hole without forcing or ramming.

(3) Explosives should not be removed from the original wrapper before being loaded into bore holes except when irregularities of the hole make it impossible to load whole cartridges with safety or in block-holing where small charges are desirable. This rule shall not apply to free running explosives.

(4) Excessive ramming should be avoided in loading or tamping explosives in a bore hole and wooden tools only, with no exposed metal parts, shall be used for this purpose. In tamping, only hardwood rods without metal parts, other than non-ferrous metal ferrules for extending the length thereof, shall be used.

(5) When loading free running or bulk explosives, a bronze, wooden or heavy paper funnel should be used unless the explosives can be poured directly from a container into the hole in such a manner as to prevent scattering of loose explosives around the collar of the hole.

(6) When priming with electric caps, said caps shall be tested with a blasting galvanometer after being loaded but before the hole is stemmed. Primers shall be made up just prior to loading. The cap must be properly embedded in the cartridge and the primer seated in the charge without rough handling.

(7) When firing with a blasting machine, the blasting machine shall be located at a safe distance to be determined by the blaster.

(8) When firing by means of a blasting machine, the leading wires shall be kept short-circuited until the shot is ready for firing and shall not be connected to the blasting machine until immediately before the time of firing and shall be disconnected from the blasting machine and short-circuited immediately after firing.



- (9) Electric detonators and blasting circuits shall be tested only by means of a blasting galvanometer designed for this purpose.
- (10) Before firing any blast, all means of access to the danger zone (the extent of which shall be determined by the blaster, but in no case to be closer to the explosion than the blaster himself), shall be effectively guarded to exclude all unauthorized personnel. When practical, the blaster shall then sound a warning of sufficient intensity and duration to be distinctly audible to all persons within the danger zone and all such persons shall retire beyond the danger zone. The danger zone shall then be examined by the blaster to make certain that all persons have retired therefrom to a place of safety. No blast shall be fired while any person is in the danger zone.
- (11) When the point of explosion is within three hundred (300) feet of a roadway, the blaster shall, just prior to the blast, designate a sufficient number of employees of the operator, each carrying a red warning flag, to stop all vehicular and pedestrian traffic on each possible route of travel within three hundred and fifty (350) feet of the point of explosion until the blast has been fired.
- (12) No person shall return to the danger zone until permitted to do so by the blaster as announced by audible or visual signal.
- (13) Immediately following the blast the area shall be examined by the blaster for evidence of misfired charges.
- (14) All misfires shall be reported at once to the superintendent or manager who shall then determine the safe and proper method of disposal. The unexploded charge shall be detonated if such can be accomplished without risk of injury to personnel or damage to property. If repriming is necessary, any stemming present in the hole may be removed by a jet of water. The jetting tool should be of non-sparking metal, rubber or plastic. If electric blasting caps are used for in-the-hole initiation, an air jet should not be used.
- (15) Drilling in any hole that is known to contain or have contained explosives is prohibited until complete neutralization is effected.
- (16) A complete record shall be kept by the blaster showing all misfires and method of disposal.
- (17) In case a charge fires but does not bring down the burden, it is permissible to reload the bore hole, if in suitable condition, but only after the temperature of the hole has been reduced by water or otherwise to not more than one hundred fifty (150) degrees Fahrenheit.
- (18) Each blast hole shall be stemmed to the collar or to a point high enough to provide efficient confinement of the charge and to minimize the chance of injury to personnel from flying material. Block holes shall contain at least eighty-five (85) percent of stemming material. For toe holes, the collar stemming shall in no case be less than one-third the depth of the hole.
- (19) When electric blasting caps are transported in a motor vehicle, equipped with a radio transmitter, they shall either be in their original package or stored in a closed metal box that is lined with a cushioning material such as wood or sponge rubber. When the electric caps are being placed into or removed from the box, the transmitter shall not be used.
- (20) Unless otherwise expressly authorized in writing by the Director, all blasting operations shall be conducted at no less distance from any fixed or mobile radio transmitter than indicated in the following table:

*Minimum Distance*

*From Blasting  
Operations Using*

*Transmitter Power            Electric Blasting*

*Output in Watts            Caps, in Feet*

5--25 . . .	100
25--50 . . .	150
50--100 . . .	220
100--250 . . .	350
250--500 . . .	450
500--1,000 . . .	650
1,000--2,500 . . .	1,000
2,500--5,000 . . .	1,500
5,000--10,000 . . .	2,200
10,000--25,000 . . .	3,500
25,000--50,000 . . .	5,000
50,000--100,000 . . .	7,000

When it can be demonstrated by means of approved tests that electric blasting may be carried out at lesser distances from the transmitter than required by the table shown, the Director may allow a variation from the requirements of said table.

When blasting operations are located near highways or other public ways, signs shall be erected at least five hundred (500) feet from the blast areas reading: "BLAST AREA-SHUT OFF ALL TWO-WAY RADIOS". The letters of these signs shall be not less than four (4) inches in height on a contrasting background.

(21) In no case shall drilling be conducted closer than twenty-five (25) feet to a loaded hole or a hole that is being loaded.

(22) Holes shall be checked prior to loading to determine depth and condition. Holes may be checked with a dolly or tamping block or by visual inspection with the aid of a mirror. After any explosives have been loaded, all measuring shall be done with a cloth tape or non-ferrous measuring device and lead plumb bob, or a wooden tamping pole or wooden dolly free of exposed metal parts.

(23) Under no circumstances shall the amount of explosives taken within three hundred (300) feet of a potential point of explosion exceed the amount estimated by the blaster as necessary for the blast. Such explosives shall be stacked in piles at least twenty-five (25) feet from the nearest holes being loaded and at such distances apart, as provided in Section 32, that any premature explosion will not be likely to propagate from one (1) pile to another.

(24) The explosives containers, if any, shall be opened at the pile and carried up to the hole, one (1) case or unit at a time for immediate loading or placed at a loading station not less than six (6) feet from the hole except that not more than one hundred (100) pounds of explosives shall be allowed at the loading station at any one time. All empty explosives containers (boxes, bags, crates, etc.) shall be properly disposed of, daily, in a safe manner.

(25) Explosives shall be distributed in such a manner that the distances from storage piles to the allowable maximum quantity of one hundred (100) pounds of explosives at the loading station or between such one hundred pound-loading station piles shall not be less than the quantities shown in the following quantity-distance table:

<i>Pounds of Explosives</i>	<i>Distance Between Piles of Explosives in Feet</i>
up to 50 . . .	21
100 . . .	25

200 . . .	32
300 . . .	37
400 . . .	41
500 . . .	44
750 . . .	50
1,000 . . .	55
1,500 . . .	64
2,000 . . .	70
2,500 . . .	75
5,000 . . .	96
10,000 . . .	123

(26) Drill holes shall not be sprung when they are less than one hundred (100) feet from the nearest hole containing explosives. Holes that have been sprung shall not be charged with explosives until the maximum temperature in any portion of such holes has been reduced to one hundred fifty (150) degrees Fahrenheit. Where possible, water is to be used for cooling purposes.

(27) When loading a blast primed with detonating fuse, the detonator or detonators required for firing the blast shall not be brought within fifty (50) feet of the hole area nor attached to the detonating fuse until all persons, except the blaster and his assistants, have been cleared from the danger zone.

(28) In all blasting where the firing of any one (1) hole is likely to break into or damage another hole in the vicinity or where the firing of any hole may propagate the charge in a loaded hole in the vicinity, all holes which have been loaded shall be included and fired in the blast.

(29) Water standing in blast holes should be bailed out, if possible, or the holes shall be loaded with an explosive of adequate water resistance.

(30) Blasting crews shall consist of the minimum number of experienced men to do the work in an efficient manner and should be organized carefully and each man assigned to definite tasks to avoid confusion.

(31) A blast shall be planned before the loading is started. The planned charge for each hole shall be recorded prior to the blast.

(32) The condition of each hole to be loaded and the amount, height, and position of the explosives charge or charges placed in the hole shall be recorded on a loading chart prior to the blast.

(33) Members of loading crews engaged in loading blast holes should be prohibited from wearing hobnail or steel-plated shoes to avoid striking sparks on rocks.

(34) Large dynamite cartridges may be dropped in blast holes only when the hole is free from obstructions to the depth at which the cartridge is to rest.

(35) Large dynamite cartridges shall not be dropped in blast holes containing excessive water until the charge is above the water level.

(36) Large dynamite cartridges that have been wedged in a blast hole shall not be tamped with a dolly. After pouring water into the hole, attempts to dislodge or pierce them shall be made with a spear-shaped wooden tamping block or a small-diameter wooden pole.

(37) Rough or ragged holes and holes partly closed by an obstruction that cannot be readily removed shall be loaded with cartridge dynamite lowered with a rope, with free running powder or dynamite cut in small pieces.

(38) When loading a long line of holes with more than one (1) loading crew, the crews shall be separated by the greatest practical distance which can be maintained as the loading operations



progress and which is consistent with efficient operation and supervision of the crews. Every effort shall be made to keep the loading crews a minimum of twenty-five (25) feet apart and to prevent the simultaneous loading of adjacent holes.

(39) Excessively large amounts of explosives shall not be delivered to the loading area at one (1) time. If deliveries of explosives are made by truck, the quantity permitted at or near the loading operations shall be limited to one (1) truck load. Other trucks loaded with explosives shall wait or be unloaded in separate safe places away from the loading operations.

(40) Explosives should be delivered first to the holes farthest from the truck to avoid driving or walking among piles of explosives.

(41) Explosives in excess of immediate requirements when removed from the main storage magazine and delivered in the vicinity of a blasting operation, shall be stored in a Class II magazine.

(42) The required stemming or tamping material shall be placed by each hole before the delivery of explosives to the holes is started. Stemming material shall be screened or free from excessively coarse pieces.

(43) Stemming shall be placed in each hole to avoid damage to the detonating fuse or leg wires of electric detonators.

(44) A single hole or any number of holes in a row should not be fired when adjacent to or near one (1) or more other holes which are loaded and which are not intended to be fired.

(45) All detonating fuses shall be covered with adequate stemming where physically possible to reduce noise.

(46) The detonating fuse shall extend from the hole a distance of one (1) or two (2) feet more than sufficient to compensate for any subsidence, should be drawn taut and made secure on the top where it will not interfere with loading operations or come in contact with explosives on the ground.

(47) The detonating fuse shall be checked each time before stemming material is used to see that it has not been broken; if it has, it shall be repaired before proceeding.

(48) When a detonating fuse is used, main or trunk line splices shall be factory splices or tight square knots. No splices or knots shall be used in the drill hole.

(49) All branch line connections and all connections in the main line other than splices shall be tight and at right angles.

(50) The main or trunk line shall be laid out free of kinks or coils and all connections shall be inspected before firing the blast.

(51) When connecting an electric blasting cap to detonating fuse, a connector for the purpose shall be used in accordance with the Director's instructions. The cap may also be securely taped to the detonating fuse.

(52) Caps shall not be brought to the loading area nor attached to the detonating fuse until all is in readiness to fire the blast.

(53) Plain detonating fuse may be used for trunk lines or in shallow drill holes, but reinforced or wire protected types shall be used in deep or ragged holes.

(54) Toe hole blasting is defined as the removing of ledges or high bottoms that remain after a main or primary shot or blast using moderate quantities of explosives loaded in small diameter holes. In toe hole blasting, the charge of explosives shall be pushed to the end of the hole with a wooden pole using care not to block the hole or suitable free-running blasting agents may be blown into the hole with an approved pneumatic loader.



(55) Secondary blasting is defined as the reduction of oversize material by the use of explosives to facilitate shovel operations or to be accompanied by the crusher. It shall include mud-capping and blockholing. In secondary blasting, wherever practicable, oversize fragments shall be reduced to shovel or crusher size by use of the drop-ball method, except as otherwise directed by the Director.

(56) Charges of explosives shall be confined in all cases (drill holes) by suitable, inert stemming material.

(57) No person, except the blaster and any others directly engaged in loading block holes, shall be permitted within the immediate area while loading is being performed. Loading of any block hole shall be completed in one continuous operation including insertion of the primer and the stemming.

(58) Blast matting (which may include earth) shall be required when blast operations and/or geological conditions create fly rock that could damage or injure persons or property, or at the decision of the Director.

(59) In all blasting operations, except as hereinafter otherwise provided, the maximum peak particle velocity of any one (1) of three (3) mutually perpendicular components of the ground motion in the vertical and horizontal directions shall not exceed two (2) inches per second.

(60) Instrumentation shall be in good operating condition and be properly calibrated with a current (within one (1) year of date of use) calibration sticker affixed to each instrument. If an instrument(s) is found to be not operating properly or out of calibration, blasting operations shall be halted until the appropriate repairs or recalibration are performed or a proper instrument(s) is provided. Seismograph operator shall be trained in the use of that instrument(s).

(61) Seismographic instrumentation shall be required on any blast site where the nearest uncontrolled structure or public utility is located within a scaled distance of sixty-five (65) (as defined in Rule 69) or at the request of the Director. An uncontrolled structure is defined as any occupied building not owned or controlled by the explosives user. The seismograph shall be placed at or near the closest uncontrolled structure(s).

(62) Blasting operations without instrumentation will be considered as being within the limits set forth in this subsection if at a specified location on at least five (5) blasts instrumentation has shown that the maximum peak particle velocity at the specified location is fifty (50) percent or less of the limit set forth in this subsection, and with written permission from the Director, provided, that for all future blasts the scaled distance is equal to or greater than the scaled distance for the instrumental blast. However, if a scaled distance less than thirty-five (35) is employed, a seismograph is required regardless of the seismic readings of previous blasts.

"Scaled distance" means the actual distance in feet divided by the square root of the maximum explosive weight in pounds that is detonated per delay period for delay intervals of eight (8) milliseconds or greater. If delay intervals less than eight (8) milliseconds are employed or if instantaneous blasting is employed, scaled distance shall be computed by dividing the actual distance in feet by the square root of the total explosive weight in pounds. When blasting operations are contemplated which would result in ground vibrations that would have a particle velocity of any one (1) of three (3) mutually perpendicular components in excess of two (2) inches per second, blasting operations may proceed after receiving written consent from the property owner or owners affected and the Director.

(63) (A) Airblast shall be controlled so that it does not exceed the maximum limits specified below at any uncontrolled structure (as defined in rule 68(A)).

*Lower frequency limits of*

<i>measuring system, Hz (+ 3dB)</i>	<i>Maximum level in dB</i>
0.1 Hz or lower--flat response . . .	134 peak
2 Hz or lower--flat response . . .	133 peak
6 Hz or lower--flat response . . .	129 peak
C-weighted, slow response.....	105 peak dBc

(B) All measuring systems used shall have a flat frequency response of at least 200 Hz at the upper end.

(C) The permittee may satisfy the provisions of this section by meeting any of the four (4) specifications in the chart in Rule 73 of this section; provided however, the 0.1 Hz or lower-flat response or C-weighted slow response can only be used if approved by the Director.

(64) When blasting in the vicinity of uncontrolled structures (as defined in Rule 59(A)) the explosives user will determine the structures lying within a scaled distance of thirty-five (35). The distance will be determined by the following:

$$D = 35 (W^2)$$

Where D is the distance limit and W is the maximum charge weight per 8 ms delay interval. The explosives user will make a good faith effort to contact the owners of structures within the distance limit and offer to have a pre-blast inspection performed on their structure at no cost to the owner.

(O. No. 17057, 6-6-94)

711.230 Blasting Agents--Transportation, Storage and Use.-- Unless otherwise set forth in this chapter, blasting agents shall be transported, stored and used in the same manner as explosives. (O. No. 2703)

711.240 Buildings Used for Mixing of Blasting Agents--Location.-- Buildings or other facilities used for mixing blasting agents shall be located, with respect to inhabited buildings, passenger railroads and public highways in accordance with the American Table of Distance (Appendix "A").

(1) Any oxidizer stored at a closer distance to the blasting agent storage area than as provided in (2) below shall be added to the quantity of blasting agents to calculate the total quantity involved for application of the aforementioned Table.

(2) Minimum intra-plant separation (distances between mixing units and the oxidizer) storage areas and blasting agent storage areas shall be determined by competent persons and these distances shall be approved by the Director.

(O. No. 2703)

711.250 Buildings Used for Mixing of Blasting Agents--Construction.-- 1. Buildings used for the mixing of blasting agents shall conform to the requirements of this section unless otherwise specifically approved by the Director.

(1) Buildings should preferably be of noncombustible construction or sheet metal on wood studs.

(2) The layout of the mixing building shall be such as to provide physical separation between the finished product storage and the mixing and packaging operation.



- (3) Floors in storage areas and in the processing plant should be of concrete. Isolated fuel storage shall be provided to avoid contact between molten oxidizer and fuel in case of fire.
- (4) The building shall be well ventilated.
- (5) Heat shall be provided exclusively from a unit outside the building.
2. The design of the mixer should minimize the possibility of frictional heating, compaction, and especially, confinement. Open mixers are preferable to enclosed mixers. Bearings and gears should be protected against the accumulation of oxidizer dust. All surfaces should be accessible for cleaning. Mixing and packaging equipment should be constructed of materials compatible with the fuel-oxidizer composition. Mobile equipment, such as ready-mix concrete trucks, shall not be used for blending fuels with oxidizers while in transit on public highways. The provisions of this section shall be considered when determining blasting agent composition. The sensitivity of the blasting agent shall be determined by means of a No. 8 test blasting cap at regular intervals and after every change in ingredients or composition, or as may be requested by the Director.
3. Oxidizers of small particle size, such as crushed prills or fines, may be more sensitive and hazardous than the ordinary prills and should be handled with greater care.
4. No liquid fuel with higher volatility than that of No. 2 diesel fuel (minimum flash point of 145 degrees Fahrenheit, ASTM closed-up procedure) shall be used.
5. Crude oil and crankcase oil should not be used because they may contain light ends that offer increased vapor-explosion hazards or gritty particles that tend to sensitize the resulting blasting agent.
6. If solid fuels are used, they shall be chosen so as to minimize dust-explosion hazard.
7. Metal dusts (aluminum powder, etc.), peroxides chlorates, or perchlorates shall not be used unless such operations are conducted in a manner approved by the Director.
8. Unusual compositions shall not be attempted except under the supervision of competent personnel equipped to determine the overall hazard of the resulting compositions.
9. All electrical switches, controls, motors and lights, if allocated in the mixing room, should conform to the requirements of Article 502, Class II, Division 2 of the Electrical Code of St. Louis County; otherwise they should be located outside the mixing room. The frame of the mixer and all other equipment that may be used shall be electrically bonded and provided with a continuous path to the ground.
10. Washdown facilities should be provided. An automatic water-deluge system with adequate capacity is recommended to protect mixers and the finished-explosives storage area in the plant. Floors shall be constructed so as to eliminate open floor drains and piping into which molten materials could flow and be confined in case of fire. The floors and equipment of the mixing and packaging room shall be washed down frequently to prevent accumulation of oxidizers or fuels and other sensitizers. The entire mixing and packaging plant shall be washed down periodically to prevent excessive accumulation of dust.
11. Smoking or open flames shall not be permitted in or within fifty (50) feet of any building or facility used for the mixing of blasting agents.
12. Empty oxidizer bags shall be disposed of daily in a safe manner.
13. Not more than one day's production of blasting agents or the limit determined by the American Table of Distances (Appendix A), whichever is less, shall be permitted in or near the mixing and packaging plant or area. Larger quantities shall be stored in separate warehouses or magazines.

(O. No. 2703)

711.270 Transportation of Blasting Agents.-- 1. When blasting agents are transported in the same vehicle with explosives, all of the requirements of Section 711.180 of this chapter shall be complied with.

2. Vehicles transporting blasting agents shall only be driven by and be in charge of a driver at least twenty-one (21) years of age who is capable, careful, reliable and in possession of a valid motor vehicle operator's license. Such a person shall also be familiar with the State vehicle and traffic laws.

3. No sparking metal, sparking metal tools, oils, matches, firearms, acids or other corrosive liquids shall be carried in the bed or body of any vehicle containing blasting agents.

4. No person shall be permitted to ride upon, drive, load or unload a vehicle containing blasting agents while smoking or under the influence of intoxicants or narcotics.

5. It is prohibited for any person to transport or carry any blasting agents upon any public vehicle carrying passengers for hire.

6. Vehicles transporting blasting agents shall be in safe operating condition at all times.

7. When offering blasting agents for transportation on County roads and highways, they shall be packaged in a manner to render them safe for transportation and handling and marked or labeled so as to be readily identifiable.

(O. No. 2703)

711.280 Use of Blasting Agents.-- Persons using blasting agents shall comply with all of the applicable provisions of this chapter for the use of explosives.

(O. No. 2703)

711.290 Records.-- 1. A record known as a log shall be kept for every primary blast in an approved manner and for such other blasting as the Director may require.

2. A blasting record, known as a log, shall be kept on the site of any blasting operations. This log shall be made available to the Director or his authorized agents upon demand. This record shall be maintained available for inspection for a period of six (6) months after such blasting operations are completed.

3. Minimum recorded data shall be as follows:

(a) Plan of the involved portion of the blasting site showing location of holes and spacing of holes.

(b) A cross-section of each hole showing overburden; burden at top of face and toe; height of face; depth of hole; kind and quantity of explosives including distribution of explosives load as deck charges, or otherwise as appropriate; length and kind of stemming material.

(c) Drilling record showing unusual joint or seam conditions in the rock.

(d) Amount of explosives used (weight).

(e) Kind of blasting caps, distribution of instantaneous or short-period delay blasting caps, or both; delay interval used; order of firing by switch.

(f) Comments by blaster in charge regarding character of breakage; height of breakage; length of throw; effectiveness of shot; unusual results of effects.

(g) Weather conditions including direction and approximate velocity of wind; atmospheric temperature; relative humidity; cloud conditions.

(h) Date and time of firing of blast.

(i) Name of person in responsible charge of loading and firing; blaster's permit number.



(j) Name and location of blasting site.

(k) Signature and title of person making report.

4. Any falsification, alterations or misrepresentation of any records of blasting operations will be cause for suspension or revocation of blasting permits and blaster's license.

(O. No. 2703)

711.300. Fees. --The fee for an annual blaster's license shall be fifty dollars (\$50.00).

The fees for blasting and storage of explosives permits required by this chapter shall be as prescribed in Sections 1100.210, 1100.220 and 1100.230, SLCRO 1974 as amended.

(O. No. 22015, 9-14-04)

711.310 Hours During Which Blasting Prohibited.-- It shall be unlawful for any person to explode, or cause to be exploded, any gunpowder, dynamite, giant powder, gun cotton or other explosives as herein defined for any purpose during the hours of 6:00 p.m. to 8:00 a.m., except that a special permit to use explosives during the hours of 6:00 p.m. to 8:00 a.m. may be issued by the Director when the Director determines that conditions beyond the control of the person seeking a special permit prevent such person from using explosives during regular hours permitted.

(O. No. 2703)

711.320 Permit--Licenses--Duration.-- 1. Blaster's licenses shall expire at the expiration of twelve (12) months from date of issuance, but may be renewed at the discretion of the Director without written examination.

2. Permits to store explosives or blasting agents shall expire at the expiration of twelve (12) months from date of issuance, or when location of magazine is changed.

3. Permit to blast shall expire on the date specified on the permit issued by the Director, but may be extended by the Director.

4. All permits and licenses issued pursuant to this chapter may be suspended by the Director for good cause shown as hereinafter provided.

(O. No. 2703)

711.330 Right of Inspection.-- 1. The Director or any authorized police officer, may, at any reasonable time, inspect premises, buildings and installations used for storage or sale of explosives or blasting agents, or any premises on which blasting operations are being conducted for the purpose of determining whether the provisions of this chapter are being complied with.

2. The Director or any authorized police officer may, during normal business hours, enter and inspect the premises, including places of storage, of any licensed importer, licensed manufacturer, licensed manufacturer-limited, licensed dealer, or permittee for the purpose of inspecting or examining any documents and records required to be kept by such person by law and any explosive materials kept or stored by such person.

3. Any person who shall hinder or obstruct the Director or any police officer in the performance of his official duties shall be guilty of a violation of the provisions of this chapter and upon conviction thereof, shall be punished as provided in Section 711.390.

(O. No. 10039, 1-9-81)

711.335 Inspection of Fire or Accident Scene.-- The Director or any authorized police officer

may inspect the site of any accident or fire in which there is reason to believe any explosive materials were involved. The Director or any authorized police officer may, at any reasonable time, enter into or upon any property where explosive materials have been used or are suspected of having been used, or have been found in an otherwise unauthorized location.

(O. No. 10039, 1-9-81)

711.340 Violation of Inspection--Notice to Violator.-- 1. If upon inspection by the Director or his agents, a violation of this chapter is found to exist, the Director shall file with the person holding the permit a notice citing the violation and ordering its correction. If such order is not complied with within the time period specified in the notice, which may require immediate compliance, the Director may suspend any permit or license issued to the person involved. Nothing herein relating to revocation of permits shall be construed to abrogate or suspend any proceedings against or prosecution of the violator which may be instituted against the violator under the provisions of this chapter.

2. Immediately after the suspension of the permit to store or to blast, the Director shall give the permittee written notice of the complaint or charge and shall fix the date for a hearing to be held within five (5) days of said notice, at which hearing the permittee shall have the right to counsel and to produce witnesses and other evidence in his behalf. For the purpose of said hearing, the Director is empowered to issue subpoenas and all necessary processes, administer oaths and take testimony at said hearing. All evidence offered at the hearing shall be preserved by the Director and oral testimony shall be recorded verbatim.

3. If the Director shall, after such hearing, decide that the operation for which the permit was issued was in violation of any provision of this chapter, he may revoke any permit or license of the person involved permanently or for such lesser period of time as he shall determine.

(O. No. 10039, 1-9-81)

711.350 Conflict With State or Federal Regulation of Explosives--Suspension.-- During such time as any provision herein shall conflict with any State or Federal statute or regulation, such provision herein conflicting shall be suspended.

(O. No. 2703)

711.360 Reckless and Wanton Handling of Explosives--Prohibited.-- No person shall load, unload or otherwise handle explosives in a reckless and wanton manner, thereby endangering the life, limb or property of any person.

(O. No. 2703)

711.365 Stolen Explosives.-- No person shall, with the intent of depriving the owner of lawful possession thereof, use, possess, receive, conceal, transport, sell or dispose of any stolen explosive materials knowing or having reasonable cause to believe such materials were stolen.

(O. No. 2703)

711.370 Sale to Minors--Prohibited.-- It shall be unlawful for any person to sell, vend, give away or otherwise supply any explosive as defined herein in any quantity to any person under the age of twenty-one (21) years.

(O. No. 2703)



711.375 Theft or Loss of Explosives.-- Any person who has knowledge of the theft or loss of any explosive materials shall immediately report such theft or loss to the Director and the St. Louis County Police Department.

(O. No. 10039, 1-9-81)

711.380 Vendor to Keep Record of Sales--Duties.-- Every person who has a permit to store, stock or store for resale explosives as defined herein shall be required to maintain a bound ledger and shall record or cause to be recorded therein the following information in connection with every sale, vending or other disbursement of explosives:

- (1) Name of vendee.
- (2) Address of vendee.
- (3) Date and time of sale.
- (4) Type of explosive.
- (5) Quantity of explosive.

Such record shall be open to inspection by the Director or his agent during usual business hours. No licensed user of explosives or blasting agents shall be allowed to resell explosives or blasting agents except by the written authorization of the Director.

(O. No. 2703)

711.390 Penalties.-- Any person violating any of the provisions of this chapter shall, upon conviction thereof, be punished by a fine not to exceed five hundred dollars (\$500.00) or imprisoned in the County Jail not to exceed one year or both and each such violation shall constitute a separate offense. In addition to the penalties prescribed herein, the County Executive may take such other action, either legal or equitable, that he deems necessary in order to execute and enforce the provisions of this chapter.

(O. No. 2703)

711.400 Right to Appeal.-- 1. Any applicant, permittee or other person aggrieved by any order of the Director issued pursuant to this chapter, except the revocation of a permit which is covered elsewhere in this chapter, may file an appeal with the Director within ten (10) days of such order, and the Director shall fix a time and place for hearing to be held not less than five (5) days nor more than ten (10) days of the filing of appeal at which hearing the permittee shall have the right to counsel and to produce witnesses and other evidence in his behalf. For the purpose of said hearing, the Director is empowered to issue subpoenas and all necessary processes, administer oaths and take testimony at said hearings. All evidence offered at the hearing shall be preserved by the Director and oral testimony shall be recorded verbatim.

2. The decision and action of the Director at the hearing to revoke the permit shall be reviewable in a court of competent jurisdiction by a writ of certiorari filed by the permittee so affected or by any other person aggrieved by the action of the Director, within ten (10) days after said decision in writing has been made and forwarded to said permittee.

(O. No. 2703)

## APPENDIX A

The American Table of Distances for storage of Explosives as revised and approved by the Institute of Makers of Explosives, September 30, 1955, which is a part hereof and is designated herein as Appendix A reads and provides as follows:

*Quantity-Distance Tables*

*American Table of Distances for Storage of Explosives \**

TABLE INSET:

<i>Explosives</i>		<i>Distances in Feet When Storage in Barricaded **</i>			
<i>Pounds Over</i>	<i>Pounds Not over</i>	<i>Inhabited Buildings</i>	<i>Passenger Railways</i>	<i>Public Highways</i>	<i>Separation of Magazines</i>
2	5	70	30	30	6
5	10	90	35	35	8
10	20	110	45	45	10
20	30	125	50	50	11
30	40	140	55	55	12
40	50	150	60	60	14
50	75	170	70	70	15
75	100	190	75	75	16
100	125	200	80	80	18
125	150	215	85	85	19
150	200	235	95	95	21
200	250	255	105	105	23
250	300	270	110	110	24
300	400	295	120	120	27
400	500	320	130	130	29
500	600	340	135	135	31
600	700	355	145	145	32
700	800	375	150	150	33
800	900	390	155	155	35
900	1,000	400	160	160	36
1,000	1,200	425	170	165	39
1,200	1,400	450	180	170	41



1,400	1,600	470	190	175	43
1,600	1,800	490	195	180	44
1,800	2,000	505	205	185	45
2,000	2,500	595	220	190	49
2,500	3,000	580	235	195	52
3,000	4,000	635	255	210	58
4,000	5,000	685	275	225	61
5,000	6,000	730	295	235	65
6,000	7,000	770	310	245	68
7,000	8,000	800	320	250	72
8,000	9,000	835	335	255	75
9,000	10,000	865	345	260	78
10,000	12,000	875	370	270	82
12,000	14,000	885	390	275	87
14,000	16,000	900	405	280	90
16,000	18,000	940	420	285	94
18,000	20,000	975	435	290	98
20,000	25,000	1,055	470	315	105
25,000	30,000	1,130	500	340	112
30,000	35,000	1,205	525	360	119
35,000	40,000	1,275	550	380	124
40,000	45,000	1,340	570	400	129
45,000	50,000	1,400	590	420	135
50,000	55,000	1,460	610	440	140
55,000	60,000	1,515	630	455	145
60,000	65,000	1,565	645	470	150
65,000	70,000	1,610	660	485	155
70,000	75,000	1,655	675	500	160
75,000	80,000	1,695	690	510	165
80,000	85,000	1,730	705	520	170

85,000	90,000	1,760	720	530	175
90,000	95,000	1,790	730	540	180
95,000	100,000	1,815	745	545	185
100,000	110,000	1,835	770	550	195
110,000	120,000	1,855	790	555	205
120,000	130,000	1,875	810	560	215
130,000	140,000	1,890	835	565	225
140,000	150,000	1,900	850	570	235
150,000	160,000	1,935	870	580	245
160,000	170,000	1,965	890	590	255
170,000	180,000	1,990	905	600	265
180,000	190,000	2,010	920	605	275
190,000	200,000	2,030	935	610	285
200,000	210,000	2,055	955	620	295
210,000	230,000	2,100	980	635	315
230,000	250,000	2,155	1,010	650	335
250,000	275,000	2,215	1,040	670	360
275,000	300,000	2,275	1,075	690	385

\*As revised and approved by the Institute of Markers of Explosives, September 30, 1955.

\*\*\*"Barricaded" means that a building containing explosives is effectually screened from a magazine, building, railway, or highway, either by a natural barricade, or by an artificial barricade of such height that a straight line from the top of any sidewall of the building containing explosives to the eave line of any magazine, or building, or to a point 12 feet above the center of a railway or highway, will pass through such intervening natural or artificial barricade. "Natural barricade" means natural features of the ground, such as hills, or timber of sufficient density that the surrounding exposures which require protection cannot be seen from the magazine when the trees are bare of leaves. "Artificial barricade" means an artificial mound or revetted wall of earth of a minimum thickness of 3 feet.

Note: When a building containing explosives is not barricaded, the distances shown in the Table shall be doubled.

#### **NOTES TO AMERICAN TABLE OF DISTANCES FOR STORAGE OF EXPLOSIVES**

Note 1. "Barricaded" means that a building containing explosives is effectually screened from a magazine, building, railway or highway, either by a natural barricade or by an artificial barricade of such height that a straight line from the top of any sidewall of the building containing explosives to the eave line of any magazine or building or to a point 12 feet above the center of a railway or highway, will pass through such intervening natural or artificial barricade.



Note 2. "Natural barricade" means natural features of the ground, such as hills or timber of sufficient density that the surrounding exposures which require protection cannot be seen from the magazine when the trees are bare of leaves.

Note 3. "Artificial barricade" means an artificial mound or revetted wall of earth of a minimum thickness of 3 feet.

Note 4. When a building containing explosives is not barricaded, the distances shown in the Table shall be doubled.

Note 5. When 2 or more storage magazines are located on the same property, each magazine must comply with the minimum distances specified from inhabited buildings, railways and highways, and in addition, they should be separated from each other by not less than the distances shown for "Separation of Magazines", except that the quantity of explosives contained in cap magazines shall govern in regard to the spacing of said cap magazines from magazines containing other explosives. If any 2 or more magazines are separated from each other by less than the specified "Separation of Magazines" distances, then such 2 or more magazines, as a group, must be considered as one magazine, and the total quantity of explosives stored in such group must be treated as if stored in a single magazine located on the site of any magazine of the group, and must comply with the minimum distances specified from other magazines, inhabited buildings, railways and highways.

Note 6. The permanent storage of more than 300,000 pounds of commercial explosives in one magazine or in a group of magazines which is considered as one magazine is not permitted except by specific approval of the Director.

Note 7. This Table applies only to the manufacture and permanent storage of commercial explosives. It is not applicable to transportation of explosives or any handling or temporary storage necessary or incident thereto. It is not intended to apply to bombs, projectiles, or other heavily encased explosives. For storage in connection with transportation, see Section 711.180.

Note 8. All types of blasting caps in strengths through No. 8 cap shall be rated at 1 1/2 pounds of explosives per 1,000 caps. For strength higher than No. 8 cap, consult the Director.

(O. No. 2703)

