

TITLE 460: OKLAHOMA DEPARTMENT OF MINES  
CHAPTER 15: UNDERGROUND COAL AND ASPHALT

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## CHAPTER 15. UNDERGROUND COAL AND ASPHALT

Subchapter	Section
1. General Standards .....	460:15-1-1

[Authority: 45 O.S., §§ 1.5 et seq; 75 O.S., §§ 250 et seq.]  
 [Source: Codified 12-31-91]

### SUBCHAPTER 1. GENERAL STANDARDS

**460:15-1-1. Purpose**

The rules in this chapter have been adopted to the health, safety and welfare of the underground coal and asphalt miners in the State of Oklahoma.

**460:15-1-2. Definitions**

The following words and terms when used, in this Chapter, shall have the following meaning unless the context clearly indicates otherwise:

"**Apprentice miner**" means a person who is actively employed and who works underground and under the guidance and supervision of a certified miner.

"**Accident**" means any mine explosion, mine ignition, mine fire, or mine inundation, or injury to, or death of any person.

"**Coal**" means lignite, subbituminous, cannel, bituminous, semi-bituminous, semianthracite, anthracite and asphaltic minerals or other hydrocarbons recovered by mining.

"**Drift**" means a horizontal or approximately horizontal opening through the strata.

"**Department**" means the Oklahoma Department of Mines, or such department, bureau or commission as may lawfully succeed to the powers and duties of such department.

"**Face equipment**" means mining machinery operated in/by the last open crosscut.

"**Mine**" includes the shafts, slopes, drifts or inclines connected with, or intended in the future to be connected with, excavations penetrating coal seams or strata, which excavations are ventilated by one general air current or division thereof, and connected by one general system of mine haulage over which coal may be delivered to one or more points outside the mine, and the surface structures or equipment connected or associated there with which contribute directly or indirectly to the mining, preparation or handling of coal, or construction thereof.

"**Operator**" means any person, partnership, firm or corporation engaged in and controlling a mining operation.

"**Permissible**" means any equipment, device or explosion that has been approved as permissible by the United States Bureau of Mines.

"**Shaft**" means a vertical opening through the strata.

"**Slope**" means a plane or incline.

"**Working face**" means any place in a coal mine in which work of extracting coal from its natural deposit in the earth is performed.

**460:15-1-3. Permitting and reclamation plans**

(a) It shall be unlawful for any person to engage in any mining operation without first obtaining from the Oklahoma Department of Mines a permit for such separate mining operation.

(b) Each application for a permit shall be accompanied by a plan of reclamation that meets the requirements of the Mining Lands Reclamation Act or have the plan submitted and awaiting approval from the Oklahoma Department of Mines. If the plan has been submitted prior to the application, a letter stating the date the reclamation plan was submitted must be attached to the permit application.

(c) Each application shall contain preliminary plans for ventilation, roof control, certification and apprentices, escapeway, first aid, mine rescue, electrical, hoisting and man-trips, fire protection, mining near abandoned workings, combustible materials and rock dusting, communication, blasting and explosives, books and records, accident prevention, and use and storage of toxic and noxious materials, and other requirements in accordance with Title 45 O.S. and 30 C.F.R.

(d) Each application shall contain a description of the documents upon which the applicant bases his or her legal right to enter and begin underground mining activities in the permit area. The description shall identify those documents by type and date of execution, identify the specific lands to which the document pertains, and explain the legal rights claimed by the applicant. A copy of said documentation shall be submitted upon request by the Department.

[Source: Amended at 31 Ok Reg 2092, eff 9-12-14]

**460:15-1-4. Mine map**

(a) The owner, agent, lessee, or operator of every coal mine in the State of Oklahoma shall make or cause to be made by an Oklahoma registered engineer or a registered surveyor, an accurate map of each mine. The mine shall be drawn to a scale of one (1) inch to two hundred (200) feet, and shall show in prominent lettering the name of the state, county, township, range, and section and by proper emblem the true north. The map shall carry the seal of the engineer or surveyor and be signed.

(b) The map shall show accurately by azimuths or bearings and distances, the location of the mine openings with respect to an established legal subdivision corner. A tie to the state coordinate system shall be provided. All mine traverses shall be advanced by closed loop methods of traversing, or other equally accurate methods of traversing.

- (1) The map shall accurately show the property lines and surface boundary of the coal. The tracks and side-tracks of any and all railroads.
  - (2) The location and depth of holes drilled for coal, oil, gas, or water that penetrates the workable coal seam, and the location and elevation of any body of water.
  - (3) Such map shall also show all shafts, slopes, tunnels, or other openings to the surface as to the workings of any adjacent or contiguous mine, all excavations, entries, airways, manways, rooms, crosscuts or other workings. The location of the ventilating fan or fans and the direction of the air currents and the location of overcasts or undercasts.
  - (4) The map must show the location and description of at least two (2) permanent base line points coordinated with the underground and surface mine traverses. Distance and bearing between base line points shall be shown.
  - (5) Such map shall show the outcrops of the seam or seams, dip of the coal bed, known faults, and wants or wash outs.
  - (6) Elevations shall be referred to from two (2) permanent surface bench marks, which is referenced to mean sea level as a datum.
  - (7) Contour lines on ten (10) feet intervals but not to exceed two hundred (200) feet shall be shown on the floor of one (1) entry in each working section, main, or cross-main.
- (c) An extension of the last preceding survey of every mine shall be made once in every six (6) months. The result of the survey shall be accurately entered upon the original map.
- (1) The operator or superintendent of every coal mine shall furnish the mine inspector and the Department of Mines a true map or print of a true map every six (6) months. A true copy shall also be maintained at the mine site.
  - (2) Copies of all maps, or prints thereof, shall be maintained by the Department of Mines as official records.
  - (3) The Department of Mines or assistant mine inspector may order a survey at any time.
- (d) When a mine is worked out, abandoned, or indefinitely closed, the owner, agent, lessee, or operator shall notify the Department of Mines and have a final survey made of the mine.
- (1) The final survey shall show the entire mine and the exact location of the face of every slope, plane, entry, air course, man-way, or room. Such survey shall be submitted to the Department of Mines before the mine is sealed.
  - (2) If a mine is abandoned or idle for sixty (60) days or more, it must be inspected by the assistant mine inspector and approved by the Oklahoma Department of Mines before the extraction of any coal.
  - (3) The shaft, slope, or drift opening into a mine must be sealed with incombustible materials after it has been abandoned according to an approved plan.
  - (4) No seal shall be broken, or an abandoned mine entered without written notification to the Department of Mines stating the date and approximate time. The assistant mine inspector shall be present when either the seal is to be broken or an abandoned mine entered.

#### **460:15-1-5. Mine superintendent**

- (a) **Employment.** In order to secure efficient management and to promote health and safety of the persons employed therein, the operator of each and every coal mine shall employ a duly qualified and certified superintendent who shall have charge of the entire operation and shall see that the provisions of the Oklahoma Mining Laws are properly executed. A certified superintendent shall be on each shift the mine is in operation. During the absence of the superintendent, not to exceed thirty (30) calendar days, a relief person possessing at least a Mine Foreman certification may be appointed to act as superintendent.
- (b) **Superintendent duties.** The duties of a mine superintendent are as follows:
- (1) Keep a sufficient quantity of quality materials and supplies readily accessible for the preservation of the mine and safety of the employees.
  - (2) Read, examine and countersign all reports.
  - (3) Cooperate with the mine foreman and others, in the fulfillment of their duties.
  - (4) Post all mine rules and regulations and maintain an adequate supply of record books.
  - (5) Notify the Department at least ten (10) days prior to any change that was originally submitted and approved in the mine application.
- (c) **Superintendent responsibilities.** The responsibilities of a mine superintendent are as follows:
- (1) Plans and coordinates activities of personnel engaged in mining.
  - (2) Plans and coordinates development of the mine.
  - (3) Obtains necessary data to determine methods of mining, location of support facilities, surface and underground, roof and rib control, ventilation and preliminary plans.
  - (4) Tour mine regularly to detect and resolve safety, personnel and production problems.
  - (5) Makes or causes to be made on a day-to-day basis temporary notations, supplements, and revisions to the mine map showing the working face of each working place, pillars mined, ventilation controls, change in ventilation and exculpates and other pertinent data.

[Source: Amended at 31 Ok Reg 2092, eff 9-12-14]

#### **460:15-1-6. Mine foreman**

- (a) In order to secure the efficient management and the proper ventilation of the mines of this state and promote the health and safety of the persons employed therein, the operator shall employ a duly qualified overseer for each and every coal mine, to be called mine foremen, who shall have charge of the underground operations of the mine and shall see that the provisions of this Chapter relating thereto are complied with. The mine foreman shall be under the direction of the mine superintendent. No person shall act in the capacity of mine foreman unless possessing a certificate of competency as such from the Oklahoma Mining Commission.

(b) When the mine workings become so extensive that the mine foreman is unable to personally carry out the requirements of this title pertaining to his duties, the operator of the mine shall employ a sufficient number of duly qualified and certified persons to act as assistant mine foremen, who shall be under the direction of the mine foreman in carrying out the provisions of this Chapter. The assistant mine foreman shall be under the direction of the mine superintendent. No person shall act in the capacity of assistant mine foreman unless possessing a certificate of competency from the State Mining Commission as a mine foreman or fire-boss.

(c) In the case of temporary absence of the mine foreman, he may deputize his work for the time being to his assistant, or assistants, who shall perform all the duties of the mine foreman. The assistant mine foreman shall have a certificate of competency from the State Mining Commission as mine foreman. The assistant mine foreman may be temporarily relieved by a fire-boss.

(d) The mine foreman shall devote the whole of his time to his duties while the mine is in operation and either he or his assistants, or fire-boss shall visit each working place and traveling way at least once daily. Mine foreman, or his assistants, are not required by this section to visit working places unoccupied or temporarily idle.

(e) The mine foreman shall give prompt attention to the removal of all dangers observed by or reported to him by his assistants, the fire-boss, or any other person; and in case it is impractical to remove the danger at once, he shall notify every person whose safety is menaced thereby, the area shall be dangered off to all employees other than those engaged in making the condition safe.

#### **460:15-1-7. Fire-boss**

(a) The operator shall, at each entrance to the mine, or to the main intake airways near to the mine entrance, provide a permanent station for the fire-boss to record his inspection. He will post a danger signal if it is unsafe and it shall be unlawful for any person of persons except the mine officials in cases of necessity, and such other persons as may be designated by them to pass beyond said danger station, until the mine has been examined by the fire -boss as aforesaid and the same, or certain parts thereof, reported by him to be safe; and in all mines where operations are temporarily or indefinitely suspended, the superintendent and mine foreman shall see that a danger signal is places at the mine entrance, or entrances, which shall be a sufficient warning to person not to enter the mine and if ordinary circulation of air through the mine be stopped, each entrance to said mine shall be securely fenced off and a danger signal shall be displayed upon said fence, and any workman or other person (except those persons hereinbefore provided for) passing beyond any danger signal into the mine before it has been examined and reported to be safe as aforesaid, also any person or persons passing beyond any danger signal placed at the entrance to a working place, or any other place, in the mine, without permission of the mine foreman, his assistant or his fire-boss, shall be deemed guilty of a misdemeanor, and it shall be the duty of the fire-boss, mine foreman or superintendent to forthwith prosecute such persons of person before the proper

legal authority, or to notify the district inspector, who shall enter proceedings against such person or persons.

(b) A miner may be allowed to check for gas in his working place with an approved methane detection device, other than a flame safety lamp, provided he has received the initial training and annual retraining on gases, gas detecting devices, and legal gas checks. Records showing the above training shall be retained at the mine office.

(c) Any fire-boss who neglects to comply with the provisions of this Chapter relating to his duties, or who shall make a false report of the condition of any place in the portion of the mine allotted to him for examination, shall be deemed guilty of a misdemeanor, and shall be suspended by the mine foreman, and his name shall be given to the inspector for prosecution and if he is found guilty he shall return his certificate to the State Mining Commission to be canceled.

#### **460:15-1-8. Record books of fire-boss**

The record book of the fire-boss shall at all times be accessible to the inspector and to the employees during working hours. A suitable record book approved by the Department of Mines shall be kept at each mine, and immediately after each of the examinations of each mine made by the fire-boss or fire-bosses, a record of same shall be entered in said book, signed and dated by the fire-boss or fire-bosses making such examinations, which shall clearly state the nature and location of any danger which he or they may have discovered. The superintendent and mine foreman shall each day carefully countersign all reports made by the fire-boss or fire-bosses. A fire-boss may send his report over the mine telephone system to a certified person on the surface who shall fill out the record book and sign that he received the report of the aforementioned examinations, and this shall satisfy the requirements of this section.

#### **460:15-1-9. Oklahoma Miner Training Institute**

(a) The Department of Mines shall maintain a school for the purpose of educating, training and re-training of miners or people who wish to become miners. The school shall be called the Oklahoma Miner Training Institute (OMTI) and shall be stationed near Krebs, Oklahoma, or a location that will benefit the needs of miners and operators.

(b) Instructors shall be MSHA approved and shall be practical miners and well versed in their field of instruction. They shall have attended an instructors training course or be approved to teach based upon past practical experience and classroom monitoring.

(c) Each mine shall submit as part of their application, a training plan. The plan shall be comprehensive as to where miners shall receive their training and re-training, who will conduct the training, the course subject and number of hours. A precise record of all training shall be maintained in the mine office.

(d) No person shall be allowed to work in any coal mine without having received a minimum of forty (40) hours of classroom instruction which addresses all the aspects of underground coal mining. At least eight (8) hours of the forty (40)

hours shall be administered at the mine site. Students receiving mine training shall accompany a certified mine official or a state mine inspector who is certified and qualified to inspect underground mines.

(e) Experienced miners who have not worked underground in the past twelve (12) months shall have a minimum of eight (8) hours retraining as set out in the requirements of ONTI.

(f) Each miner shall have an eight (8) hours refresher course every twelve (12) months. The refresher course shall address:

- (1) Health and safety standards
- (2) Transportation and Communication
- (3) Barricading
- (4) Roof and rib control
- (5) Ventilation and maps
- (6) First aid
- (7) Electrical hazards
- (8) Prevention of accidents
- (9) Self rescuers and devices
- (10) Explosives
- (11) Mine gases
- (12) Toxic or noxious materials or any other subjects that could be related to health and safety.

(g) Regularly employed miners shall receive their salary as though they had worked. If their required training is held at a place other than their regular place of work, they shall be compensated for mileage, and if out overnight, employees shall be compensated for meals and lodging.

(h) If training is administered by an instructor other than those at OMTI, the instructor shall notify OMTI of each employee that has received such training and other information as required by the Director of OMTI. It shall be unlawful for any instructor or student to falsify training records.

(i) The operator shall maintain certificates and training records of all miners at the mine site.

#### **460:15-1-10. Certificates of Competency**

(a) No person shall act as a mine superintendent, mine foreman, fire-boss, shot-firer, hoisting engineer or miner without first having obtained a certificate of competency from the Oklahoma Mining Commission. No person shall employ such mine superintendent, mine foreman, fire-boss, hoisting engineer or miner who does not hold such certificate. Any person who violates the provisions of this subsection, upon conviction, shall be fined not more than one thousand five hundred (\$1,500.00) or be imprisoned in the county jail for a term not more than six (6) months, or both.

(b) The examination for a certificate of competency as mine superintendent, mine foreman, fire-boss, shot-firer, or hoisting engineer shall be administered by only employees or advisors of the Department of Mines who also hold equal or higher certificates of competency. The examination shall be sufficient to determine that such applicant fully understands the requirements of the coal mining laws of this state.

(c) Each applicant for mine superintendent, mine foreman, fire -boss, hoisting engineer or shot-firer shall hold a first-aid certificate issued within one (1) year prior to the date of the examination of the Department by an organization recognized by the Oklahoma Mining Commission.

(d) The Department shall hold monthly examinations for certification of competency as underground miners. Applicants for such certificate may be granted a temporary permit by the Commission until an examination is held by the Department in the region in which the applicant resides. Applicants must successfully answer a written or oral examination pertaining to such requirements and qualifications of underground miners as are determined necessary by the Commission.

(e) Certificates of competency shall be granted by the Oklahoma Mining Commission to persons who have given the Department satisfactory evidence of their ability to perform the duties and skills as are required by the Council. Previous experience and record of service of the applicant shall have equal weight with the examination.

(f) The minimum experience necessary for certificates of competency are as follows:

- (1) Shot-firer - 1 year's practical underground experience, including working in blasting operations for at least twelve (12) months under immediate supervision of an experienced blaster.
- (2) Hoisting engineer 1 year's practical hoisting experience.
- (3) Fire-boss 2 year's practical underground experience.
- (4) Mine foreman - 3 year's practical underground experience.
- (5) Superintendent - 5 year's practical underground experience.
- (6) Practical miner - 1 year's practical experience as a miner or the equivalent experience as defined by the Commission.

(g) A student who has completed an accredited two-year or four-year mining program shall be credited one (1) year of experience toward a fire-boss, mine foreman or superintendent certification.

(h) Certification required by 45 O.S., Section 2 shall be issued under the signature and seal of the Oklahoma Mining Commission. Such certification shall bear the date of issuance, full name and age of the recipient and shall designate the position for which the recipient is certified by the Commission. Applications for certificates of competency shall be accompanied with the following fees:

- (1) Superintendent - \$20.00
- (2) Mine Foreman - 15.00
- (3) Fire-boss - 10.00
- (4) Shot-firer - 10.00
- (5) Hoisting engineer - 10.00
- (6) Practical miner - 5.00

(i) The Secretary of the Oklahoma Mining Commission shall make a record of the names and addresses of all persons to whom certificates are issued. Certificates of competency when issued as provided for in this Chapter, shall entitle the holders thereof to accept and discharge the duties for which said certificate declare them qualified. The Director shall advise the Oklahoma Mining Commission as far in advance as possible the date and place of an examination to be held by the Department and shall, as soon as examination is completed, furnish the Commission with a list of the names of all persons

who took the examination and persons successfully completing said examinations shall be duly notified.

(j) The Secretary of the Commission may, upon the recommendation of at least two other members of the Commission, issue a temporary permit to an applicant for a certificate for mine foreman, fire-boss, shot-firer or hoisting engineer. Said temporary permit shall be valid only until next meeting of the Commission or not to exceed thirty-one (31) days.

(k) Apprentices may be regularly employed in an underground coal mine up to fourteen (14) months to become qualified to obtain a certificate of competency as a miner. Non-certified miners or apprentices, shall never be out of sight or sound of a certified miner and shall not be used in the face area on a production shift for thirty (30) working days. A one-on-one ratio of a certified to non-certified shall not be exceeded in the working face area on a production shift. A ratio of one certified miner to five non-certified miners shall not be exceeded near the working face, or on a non-production shift.

(l) For the purpose of certification, two hundred (200) working days shall be considered one (1) year's experience.

(m) A petitioner may take a mine foreman's examination after having worked for one (1) year as a fire-boss and a superintendent's examination after having worked as a mine foreman for one (1) year.

(n) Shot-firer certification shall be obtained by all persons utilizing explosives in underground mining. A current OSBI criminal background check must be submitted as a portion of the certification application. A shot-firer certification shall be valid for a period of two (2) years. Renewal of certification shall require a current OSBI background check be submitted prior to re-certification. A certification or recertification shall not be granted to any person with a felony conviction.

[Source: Amended at 28 Ok Reg 2369, eff 9-11-11]

#### **460:15-1-11. Testing material and scores**

(a) Certification test is comprised of data collected from Oklahoma Statutes Title 45, Oklahoma Mining Statutes and Rules and Regulations, Code of Federal regulations, CFR 30, Coal Mining Reference Book, published by the Kentucky Mining Institute 1973, Oklahoma State Department of Vocational Technical Education - 1975.

(b) Seventy-five (75) percent shall be the minimum score needed to satisfy the Certification Advisory Council as having satisfactorily passed a given test.

#### **460:15-1-12. First aid**

(a) Every mine operator shall have a well stocked first aid station on the surface near the mine portals or shaft, and at each working section and at the bottom of each regularly traveled slope or shaft if more than 1,000 feet from the portals or shaft.

(b) First aid equipment shall include the following:

- (1) One stretcher
- (2) One broken back board or a splint stretcher
- (3) Twenty-four triangular bandages
- (4) Eight 4-inch bandage compresses
- (5) Eight 2-inch bandage compresses
- (6) Twelve 1-inch adhesive compresses

- (7) One foille
- (8) Two cloth blankets
- (9) One rubber or comparable blanket
- (10) Two tourniquets
- (11) One 1-ounce bottle of aromatic spirits or ammonia or one (1) dozen ammonia ampules
- (12) Two inflatable plastic arm and leg splints.

(c) All first aid materials shall be stored in a sanitary and moisture proof container.

#### **460:15-1-13. Medical service**

(a) Every operator shall have an agreement with a physician and medical services (either a hospital or a clinic) to attend the injured and with an ambulance or other transportation mode for the transfer of the injured.

(b) Emergency communications, either a telephone or radio communication system shall be installed and maintained in a working condition at each mine.

#### **460:15-1-14. Mine rescue teams**

(a) **Teams.** Every mine shall have or have access to two (2) mine rescue teams.

(1) Each team shall consist of five (5) members and one alternate.

(2) Each rescue team shall be fully qualified, trained and equipped.

(3) Each member of the team must be an underground miner with a minimum of one year experience in the past five (5) years. Miners who are employed on the surface, but work regularly underground shall be considered qualified.

(4) Each member of a rescue team shall have a physical examination by a licensed medical doctor within sixty (60) days prior to training. Each member must be physically fit to perform strenuous work under abnormal conditions. Additional physical examinations must be taken annually. The examination physician must fill out form MSHA 5000-3.

(b) **Physical requirements.**

(1) Corrective eyeglasses may be worn provided a secure seal may be obtained with a face piece.

(2) If any physical or health problem exists which could cause harm to the rescue team member or the team while doing rescue work, the physician shall notify the team member and the mine operator in writing of his findings.

(c) **Alternative teams.**

(1) The operator of an underground mine may contract with another operator to do their rescue work providing the mine is small - the total underground employment of the operator's mine and surrounding mines within two (2) hours ground travel time is less than thirty-six (36).

(2) The operator shall submit the following information to the Oklahoma Department of Mines and for the alternate rescue team:

- (A) The number of miners employed underground on each shift.

- (B) The distance from the two nearest miner rescue stations.
  - (C) The total underground employment of all mines within two hours ground travel time.
  - (D) The operators mine fire, ground and roof control history.
  - (E) The operator's established escape and evacuation plan.
  - (F) The name and availability of the nearest airport.
  - (G) A map or plan showing nearest town, all high-ways, and the routes to the mine.
  - (H) Transportation from the airport to the mine.
- (d) **Equipment and maintenance.** Each mine rescue station shall be equipped with the following:
- (1) Twelve (12) self-contained breathing apparatuses with a minimum of two (2) hour capacity.
  - (2) Adequate supply of oxygen or compressed liquid air that will sustain each team for a minimum of six (6) hours while doing rescue work.
  - (3) Twelve (12) cap lamps and a charging rack.
  - (4) Two (2) gas detectors appropriate to the kinds of gases at the mine.
  - (5) A portable approved communication system at least 1000 feet in length.
  - (6) Two (2) flame safety lamps or oxygen detectors.
  - (7) Adequate spare parts for repairs and a method of checking each unit.
- (e) **Equipment check.** All rescue equipment must be checked, at least monthly but not to exceed thirty (30) days by a qualified person.

#### 460:15-1-15. Self rescue device

Every operator shall supply every miner and every visitor a self rescue device and a self contained breathing apparatus which are approved by MSHA. Every miner or visitor must be instructed in the use of such.

- (1) The self rescue device must be carried by the miner at all times - the self contained breathing apparatus may be placed in an area or on his equipment provided it is readily accessible, protected from damage and not more than twenty-five (25) feet from such person.
- (2) The mine operator may apply to the Department of Mines for a variance to place the self contained self rescue device more than twenty-five (25) feet from the miner. The requirements for said variance shall comply with CFR 30 sec 75-1714-2.

#### 460:15-1-16. Accidents and injuries

- (a) All personal loss time accidents and accidents which could result in loss time (three (3) days loss from regularly assigned duties) shall be reported to the Department of Mines.
- (b) All serious accidents, accidents resulting in fatalities, mine fires and explosions, mine inundation, and major roof falls, shall be reported immediately to the Department of Mines.
- (c) Accidents resulting in a fatality shall have the area preserved by posting "keep out" placards at all entrances until the

accident has been investigated by the Oklahoma Department of Mines.

- (d) Non-loss time accidents shall be reported within ten (10) days from the date the accident occurred.
- (e) Failure to report accidents may warrant revoking a mining permit by the Oklahoma Mining Commission.

#### 460:15-1-17. Alcohol or hallucination drugs

It shall be unlawful for anyone working in or around any mine to use or be under the influence of alcohol or any chemical compound that is considered hallucinogenic.

#### 460:15-1-18. Identification process

Every operator shall have a check-in and check-out system that will positively identify each and every person when underground.

#### 460:15-1-19. Safety devices

- (a) Only approved miners cap lamps, flame safety lamps and methane detectors shall be used. The operator shall provide an adequate number of cap lamps, flame safety lamps and methane detectors for miners and certified personnel. Only certified personnel may use a flame safety lamp.
- (b) It shall be unlawful for any person to carry an open light, match, flame making devices, or any smoking material into any coal mine.
- (c) Each person that works in or around a mine shall wear the following protective clothing and devices:
  - (1) Suitable protective clothing and face shield or goggles when welding, cutting or working with molten metals or when any hazard to the eyes exist from flying objects.
  - (2) Suitable clothing when handling toxic or corrosive materials.
  - (3) A suitable hard hat and protective footwear.
  - (4) Snug fitting clothing shall be worn when around moving equipment or machinery.

#### 460:15-1-20. Inspection

- (a) The mine inspector may enter any mine at any time to inspect a portion or the entire mine for the purpose of making it safe and to comply with the mining laws of the state.
- (b) Underground mines shall be examined at least monthly and more often if the inspector deems it necessary.
- (c) The mine inspector may require additional information, or enforce more stringent requirements if it is deemed necessary to protect the health and safety of the employees.

#### 460:15-1-21. Enforcement

- (a) The mine inspector shall notify the mine operator, superintendent or foreman of any violation, orally or in writing and fix an abatement time for corrections thereof.
- (b) Provided, further, that if during an inspection, the mine inspector finds a dangerous condition existing that could cause

loss of life or serious personal injury, he shall have all the employees, except those needed to correct the condition, removed from the mine or portion of the mine.

(c) Every person who willfully obstructs the mine inspector in the execution of his duties, shall be guilty of a misdemeanor and upon conviction shall be punished as provided by law.

#### **460:15-1-22. Sinking of shafts or slopes**

(a) No entry, slope, crosscut or panel shall be driven more than twenty (20) feet wide when roof bolts are the primary roof supports unless a greater distance is approved by the Advisory Council.

(1) The Advisory Council shall approve all mining plans and shall advise the Mining Commission of their decision.

(2) Diesel powered equipment shall be maintained according to manufacturers recommendations but shall be serviced at a minimum of each shift or eight hours, whichever is shorter.

(3) No diesel powered equipment shall be taken into any mine, slope or shaft that does not have a working and properly serviced scrubber and has been Bureau of Mines approved for use in gassy mines.

(4) Any time the scrubber does not remove the fumes or odors from the fuel, the diesel powered equipment must be removed from service.

(b) Booster fans shall not be used underground. When sinking shafts or slopes for the purpose of reaching or mining coal or asphalt, the laws, rules and regulations governing underground coal mining shall apply unless waived by the Advisory Council.

(c) Bathing and toilet facilities shall be provided and maintained in a sanitary condition at all mines unless a waiver is granted by the Oklahoma Mining Commission.

(d) Coal dust, float coal dust, loose coal and other combustible materials shall not be permitted to accumulate in any mine.

(1) All crosscuts must be kept rock-dusted. All areas where coal has been extracted shall be rock-dusted to within forty (40) feet of the face.

(2) Rock-dust shall be applied to the floor, ribs and roof and shall be no less than sixty-five (65) percent of incombustible materials. Where methane is present the incombustible content shall be increased one (1) percent for each 0.1 percent of methane gas.

(3) The percentage of incombustible material in the returns shall be no less than eighty (80) percent. Where methane is present the incombustible content shall be increased 0.4 percent for each 0.1 percent of methane gas.

(4) Incombustible material requirements may not be applied if natural moisture can be squeezed from the accumulated dust.

(e) Water shall not be allowed to accumulate in any travelways or escapeway.

#### **460:15-1-23. Travelways requirements**

(a) **Exits.** There shall be a minimum of two exits to the surface from every mine. Each escapeway shall be properly marked and kept free of debris.

(b) **Belts.** Belts may be used for man-trips provided that there is a minimum of eighteen (18) inches above the edge of the belt to the roof or roof supports and twenty-four (24) inches to the nearest obstruction along the side of the belt. Each belt must be equipped with a safety pull cord that will stop the belt. The loading and unloading points must be properly marked and illuminated and enough room to allow the employees adequate overhead and side clearance. Employees riding any belt shall maintain a minimum separation of five (5) feet. The loading and unloading shall be supervised by a qualified person designated by the superintendent. Belt man-trips shall not exceed three hundred fifty (350) feet per minute if the overhead clearance is greater than twenty four (24) inches.

(c) **Shafts.** Shafts used for ingress and egress of mine personnel must be maintained in a safe and available condition.

(1) Shafts less than seventy five (75) feet in vertical depth shall be equipped with safe and convenient stairs of which the angle of inclination shall not exceed forty-five (45) degrees. Landings shall not exceed twenty (20) feet in vertical rise and shall be constructed so that employees may pass comfortably from ladder to ladder and fully protected on all four sides to prevent employees from falling from ladders or landings.

(2) Shafts with a vertical depth greater than seventy-five (75) feet must be equipped with a mechanical hoist and cage for the purpose of lowering and raising employees. All hoists shall be equipped with brakes sufficient to stop and hold the fully loaded cage. The hoists must have sufficient power to raise an unbalanced loaded cage.

(d) **Hoists.**

(1) All hoists shall be equipped with an accurate and reliable indicator showing the position of the cage at all times. The indicator must be in clear view of the hoisting engineer.

(A) The hoisting drum shall have flanges extending at least four (4) inches above the rope when all the rope is on the drum.

(B) Man-trip cages shall have bonnets extending over the space on which the employees stand and shall have steel or sheet iron on the sides extending not less than four (4) feet above the floor of the cage.

(C) Each cage shall have overhead bars or chains so arranged that any person may have an easy and secure hand hold.

(D) Cages shall be provided with approved safety devices capable of bringing the cage to a stop within a reasonable distance.

(E) Safety devices on cages, such as ropes, fasteners, platforms, elevators, head sheaves and flanges, shall be inspected daily and recorded by a qualified person appointed by the superintendent.

(F) The shaft top and bottom shall be properly illuminated.



- (G) There shall be two (2) approved methods of signaling from the shaft top and bottom and a continuous method of communication in the shaft.
- (2) The superintendent shall designate the number of persons that shall be lowered or hoisted on a cage at any one time and the number so designated shall be posted in a conspicuous place at the top and bottom of the shaft.
- (A) The hoisting rope shall be firmly clamped to the drum and shall have at least three (3) turns left on the drum when the cage is resting on the shaft bottom.
- (B) Hoisting ropes and attachments of ropes to cages shall have a safety factor of five (5) to one (1) as calculated by the American Standards Association formula.
- (C) Ropes shall be replaced as soon as there is evidence of undue weakness.
- (D) Hoists shall be operated only by qualified and certified personnel.
- (E) It shall be unlawful for any person to carry on a conversation with a hoisting engineer with a hoist in operation.
- (F) A second hoisting engineer shall be available near the controls when a man-trip is being operated unless the hoist is equipped with overspeed, overwind, and automatic stop controls.
- (3) Any person operating a hoist must be certified by the Oklahoma Mining Commission as being qualified. The hoistman shall:
- (A) Keep a careful watch over his engine and all machinery.
- (B) Be familiar with the signal code.
- (C) Shall not operate the man-trip at a speed greater than the superintendent authorizes but not greater than six hundred (600) feet per minute.
- (4) The hoist shall be operated one (1) full cycle, if not operated within eight (8) hours, before any person shall be lowered or hoisted from the mine.
- (5) The hoistman shall be on duty continuously when any person is in the mine.
- (6) Man-trip shall not be operated while coupled with cars containing coal, supplies, or any materials. Man-trip cars shall be sufficient in number to avoid overcrowding and shall have adequate safety devices as approved by the mine inspector.

#### **460:15-1-24. Openings to surface**

(a) **Explosives.** It shall be unlawful for the Operator, Superintendent, Mine Foreman or any other person to allow any person to work in any mine in this state unless there are at least two openings to the surface connected with at least two travelable passageways, to be designated as escapeway, from each working section to the surface connected with at least two travelable passageways, to be designated as escapeway, from each working section to the surface whether the mine openings are shafts, slopes, or drifts. They shall be kept in safe condition for travel and reasonably free of standing water and other obstructions. One of the designated escapeway may be the haulage road. Provided, that the second escapeway shall not be

longer than approximately the length of the distance traveled by the coal or rock from the working face to the surface. Provided further than in the opening or development of new shaft, slope, or drift, the necessary time to complete a connection between the aforesaid two openings, the number of men that shall be permitted to work while such connection is being made, and rules and regulations pertaining to the method of ventilation and safety measures shall be mutually agreed upon before the Mine Operator and Assistant Mine Inspector, subject to confirmation by the Department of Mines.

(b) In all shaft mines, the openings to the surface provided for in (a) of this section shall be separated from each other at all points by a distance not less than one hundred fifty (150) feet, and at all mines worked by slope or drift openings, the distance separating the openings shall be adequate to prevent recirculation, but not less than forty (40) feet.

#### **460:15-1-25. Ventilation**

- (a) Main fans shall be:
- (1) Installed on the surface;
- (2) Installed in fireproof housings and connected to the mine opening with fireproof air ducts; and
- (3) Equipped with a pressure-recording gauge and an automatic signal device designed to give alarm should the fan slow or stop. The signal from this device should be placed so that it will be seen or heard by a responsible person who is always on duty and can hear or will observe such alarm when men are underground and who shall take appropriate action immediately.
- (b) To protect main fans from forces coming out of the mine should an explosion occur:
- (1) Main fans should be offset not less than fifteen (15) feet from the nearest side of the mine opening, and explosion doors or a weak wall having a cross sectional area equal to or greater than the connection entry should be provided in direct line with possible explosion forces; or
- (2) Main fans may be installed in line with diversion entry, slope, or shaft (fan entry) driven from the mine air courses to the surface.
- (3) The surface opening of the fan entry should be no less than fifteen (15) feet nor more than one hundred (100) feet from the surface opening of the connected mine air course (pressure relief entry). The pressure relief entry opening should be provided with a weak wall or explosion doors in direct line with forces of an explosion originating underground and such weak wall or explosion doors should have a cross-sectional area of the pressure relief entry not be less than that of the fan entry. The underground intersection of the fan entry and pressure relief entry should be no less than fifteen (15) feet nor more than one hundred (100) feet from the surface opening of the pressure relief entry. The pillar of coal between the pressure relief entry and the fan entry should, regardless of coal bed height, contain not less than two thousand five hundred (2,500) square feet.
- (c) Main fans may be driven either by electric motors or internal combustion engines.

- (1) When electric motors are used, they should be provided with a separate power circuit independent of any other mine circuit.
- (2) When an internal combustion engine is used, the engine should be installed in a fireproof housing, located so as to be protected from possible fuel supply fire or explosions. The engine and exhaust should be located out of direct line with the airstream produced by the fan and be vented to the atmosphere in such a manner that the exhaust gases cannot contaminate the mine intake airstream or any enclosure.
- (d) In mines ventilated by multiple force or multiple exhaust main fans, each main fan installation should be equipped with fireproof doors, so positioned that in the event of the failure of a main fan, the doors at the fan will automatically close and prevent air reversal through the fan.
- (e) In mines ventilated by a combination of force and exhaust fans, fireproof automatic closing doors will automatically close to prevent air reversal that would affect the safety of the miners.
- (f) The area surrounding all main fans should be kept free of flammable material for at least one hundred (100) feet in all directions.
- (g) The minimum quantity of air reaching the last open crosscut in any pair or set of rooms shall be nine thousand (9,000) cubic feet per minute, and the minimum quantity of air reaching the intake end of a pillar line shall be nine thousand (9,000) cubic feet per minute. The minimum quantity of air in any coal mine reaching any face where coal is being mined shall be three thousand (3,000) cubic feet per minute. The Department of Mines or the mine inspector may require in any coal mine a greater quantity and velocity of air when he or she determines it necessary to protect the health and safety of the miners. The quantity of air shall be measured in the last open crosscut in each pair or set of developing entries. The ventilation shall be conducted through all accessible entries, rooms and all working places, in such manner and with such velocity as to dilute and render harmless inflammable, noxious and poisonous gases.
- (h) In the event of interruption of the ventilation current, employees shall be immediately withdrawn to the assembly points as designated by the operator, and the power to the faces disconnected. If the ventilation current cannot be restored in fifteen (15) minutes, all employees shall not return to work until the ventilation current has been restored and the area examined and reported safe.
- (i) All ventilating fans shall be operated continuously unless:
- (1) Repair or maintenance is needed.
  - (2) Mine is to be permanently closed and is in the process of being sealed.
  - (3) If the ventilating fan has been temporarily stopped for more than fifteen (15) minutes and the employees are withdrawn from the mine. No person shall be allowed underground except for the purpose of inspection until the mine has been reported free of accumulations of explosive gases and other dangers.
- (j) The fan shall be inspected at least daily and recorded in an approved book.
- (k) All main stoppings, overcasts, or undercasts between main intakes and returns shall be substantially built of non-combustible material. Stoppings between intake and return air courses shall be maintained not more than three (3) crosscuts from the face. A suitable man door shall be provided as per the ventilation plan, but not more than six hundred (600) feet apart. Man doors shall have a minimum opening of nine hundred (900) square inches. All mines liberating any dangerous, explosive or noxious gases shall be kept free of standing gas in all working places and roadways. No accumulation of explosive gas shall be allowed to exist in any open, worked out, or abandoned parts of the mine. It shall be removed as soon as possible after its discovery, and no miners or other persons who are not employed in the removal of the dangerous accumulation shall be allowed to remain in any mine or part of mine during the time that a dangerous accumulation of explosive gas is being removed from any part of this mine. All worked out places or abandoned areas shall be either properly ventilated or examined, sealed, or maintained as a bleeder system.
- (l) In all mines it shall be the duty of the operator to employ one or more persons holding certificates of competency from the Oklahoma Mining Commission as mine foreman or fire-boss to examine the mine and who shall examine every working place, all places adjacent to live working, every roadway and traveling way, all seals, every road to abandoned workings, and over all falls in the mine, for inflammable, noxious and poisonous gases and other dangerous or unsafe conditions such as falls of roof, dangerous tracks, timbering, or water. Such examination shall begin within three (3) hours prior to the appointed time for each shift to enter the mine and shall be made with an approved methane detection device and flame-safety lamp. The fire-boss shall examine for all dangers in all portions of the mine under his charge and after each examination he shall leave at each place examined the date, time and initials of his examinations. He shall place a danger signal at every place, where inflammable, noxious and poisonous gas has been discovered, or where immediate danger is found to exist from any other cause. The fire-boss shall report to the mine foreman all places where dangerous accumulations of gas have been found, and the nature and location of any other existing danger, and shall record the results of his inspection in a book kept for that purpose. No person shall enter any portion of a mine falling within the above classification until the fire-bosses have completed their examination and have reported that the mine is in a safe condition for the employees to enter.
- (m) Combustible material shall not be stockpiled or stored within 300 feet of any surface mine opening.

[Source: Amended at 31 Ok Reg 2092, eff 9-12-14]

#### **460:15-1-26. Permanent roof support**

- (a) Roof bolts, timbers, cribs, steel arches, trusses, linings and concrete abutments may be used for permanent roof support.

- (1) Roof bolts shall be installed according to an approved plan and may be either:
- (A) Expansion type anchor;
  - (B) Resin bolts; or
  - (C) Other methods approved by the Department of Mines.
- (2) Bolts shall be a minimum of forty-eight (48) inches in length and installed on not more than five (5) foot centers unless a shorter bolt and greater spacing is approved by the Oklahoma Mining Commission.
- (A) All bolts shall be used with a metal bearing plate a minimum of thirty-six (36) square inches.
  - (B) Wooden header boards or timbers used in long life openings of a mine must be pressure treated to avoid rot and decay for the action life of the mine. (Long life shall mean three (3) years or longer).
- (3) Resin bolts, also called "glue bolts," shall be installed according to manufacturers recommendations. The glue which consists of resin and a catalyst must be completely surround the bolt and fill the drilled hole.
- (4) All roof bolts shall be installed as soon as possible after the roof is exposed but before the top is allowed to sag.
- (5) Timber used to support the roof must be solid, free from defects, and square on both ends. The diameter of the post must be one (1) inch for each fifteen (15) inches of length with a minimum of four (4) inches. When timbers are used to support the roof a cap block not less than two (2) inches in thickness is placed between the roof and the timber. The cap block must be not less than four (4) inches wide and twelve (12) inches long. No more than two (2) wedges shall be used between the timber and the cap board to ensure a tight fit. Footers may be used to prevent the timber from sinking into soft floors. If footers are used they shall be limited to no more than two (2) per timber.
- (6) Crossbars used to support the roof must have a cross-sectional area not less than twenty-four (24) square inches and a minimum thickness of three (3) inches. Crossbars must be solid, free from defects, and straight.
- (7) Cribs used to support the roof must be of wood having flat parallel sides. In no case should the crib be less than thirty (30) inches square.
- (8) Other approved roof control materials and methods may be used on approval by the Department.
- (b) Temporary supports will be used before and during the installation of permanent supports according to an approved plan and to hang line curtains to the face. Temporary supports shall be used with a cap board and installed on not more than five (5) foot centers. Longwall mining will use chock or shield supports or other approved methods.
- (c) Adequate roof support materials shall be stored inside the mine readily accessible to employees and will conform to manufacturers recommendations. Resins not used before the expiration date shall be removed from the mine.
- (d) Each operator shall adopt a roof control plan suitable to the roof conditions and the mining plan and will address haulageways, travelways, escapeway and working places. Roof bolts shall be anchored a minimum of twelve (12) inches

in the stronger overlying strata. Test holes will be drilled to determine the length of the bolt needed to achieve minimum anchorage.

#### **460:15-1-27. Electricity requirements**

- (a) A certified mine electrician shall be employed at every mine where electrical equipment is used.
- (1) A mine electrician is a person that has been certified by MSHA as being qualified to perform work on low and medium voltage circuits.
  - (2) Persons qualified to perform work on energized high-voltage lines and apparatuses shall meet the requirements of 30 C.F.R. Part 75. Section 75.705.

#### **460:15-1-28. Electrical boxes, equipment and machinery**

- (a) All junction or distribution boxes, handheld or moveable equipment and all face machinery used in by the last open crosscut shall be permissible and shall have affixed to it the permissible plate issued by the Bureau of Mines. The operator shall maintain the equipment in a permissible condition.
- (1) The operator shall have on record at the mine site a weekly inspection record of low and medium voltage equipment. All high voltage equipment and switch gear shall be inspected and recorded in an approved record book monthly.
  - (2) All power circuits and electrical equipment shall be de-energized before working on circuits or equipment except when necessary for trouble shooting or testing.
- (b) All electric conductors shall be of adequate size to carry its intended load without damaging the installation as set forth by the National Electrical Code.
- (c) Electrical connections or splices in insulated wire shall be efficient, suitable and have at least the same degree of protection as the remainder of the wire.
- (d) Cables shall enter metal frames of motors, boxes and electrical compartments only through proper fittings. Wires passing through metal frames shall have substantial insulated bushings.
- (e) All power cables, except trailing cables on mobile equipment, shall be supported on insulated hangers and shall not contact combustible materials, roof, or ribs.
- (f) Communication wires and cables shall be insulated and supported on insulated hangers and separated so that they cannot be energized inadvertently.
- (g) Automatic circuit breakers or fuses or the correct type and capacity shall be installed to protect electrical equipment from short circuits and overloads.
- (h) Main power circuits disconnecting switches shall be installed underground within five hundred (500) feet of the bottom of the shafts and boreholes through which main power circuits enter the underground area of the mine, and within five hundred (500) feet where the main power enters the underground mine.
- (i) All underground power cables and communication wires shall be equipped with lightning arresters.

- (j) Circuit breakers and disconnecting devices shall be properly marked for identification.
- (k) All underground branch circuits shall be equipped with an approved ground monitor.
- (l) The following shall apply to trailing cables:
  - (1) Trailing cables shall be flame resistant.
  - (2) Distribution centers supplying current to more than one (1) trailing cable shall be protected against connecting the wrong cable by chaining and marking.
  - (3) Only one (1) temporary splice may be made in any trailing cable—such trailing cable may only be used for the next twenty-four (24) hour period. No temporary splice shall be made in a trailing cable within twenty-five (25) feet of the face machine, except cable reel equipment. All splices shall be mechanically strong and well insulated.
  - (4) Permanent splices shall be mechanically strong, insulated and sealed to exclude moisture, vulcanized or treated to provide flame resistant qualities and good bonding to the outer jacket.
  - (5) Trailing cables shall be clamped to machines in a manner to protect strain on the electrical connections.
  - (6) Trailing cables shall be adequately protected to prevent damage by mobile equipment.
  - (7) Trailing cables shall be adequately grounded.

#### **460:15-1-29. Fire protection requirements**

- (a) **Required firefighting equipment.** Each coal mine shall be provided with suitable fire fighting equipment and shall consist of the following:
  - (1) Waterlines with a nozzle pressure of fifty (50) psi and enough hose to reach any working face of a section.
  - (2) Portable fire extinguisher containing not less than ten (10) pounds of multipurpose dry chemicals strategically placed and marked. A five (5) pound fire extinguisher shall be provided on each mobile unit.
- (b) **Welding, cutting, soldering.**
  - (1) All welding, cutting or soldering shall be done by a qualified person and under the supervision of a certified person who shall test for gas before, during and after the operations and shall look for fire for five (5) minutes after the job is completed.
  - (2) No welding, cutting, or soldering will be done in an area that has one (1) percent or more methane. Suitable fire fighting materials consisting of one hundred (100) pounds of rock dust or a ten (10) pound fire extinguisher shall be provided each location before starting any welding, cutting or soldering.
- (c) **Use of compressed gases.**
  - (1) Gas cylinders shall be located no less than ten (10) feet from the worksite and shall be secured in an upright position unless the roof height precludes. Gas cylinders shall at all times be secured to prevent falling.
  - (2) Cylinders, hose lines, gauges and other accessories shall be maintained in a safe operating condition. A fire extinguisher shall be located near the gas cylinders.
  - (3) All fire suppression devices and equipment shall be maintained in excellent condition and shall be inspected at least weekly by a qualified person.

#### **460:15-1-30. Noxious or toxic chemicals**

- (a) Noxious or toxic chemicals shall not be stored underground.
- (b) An approved respirator and protective clothing shall be used when handling any of the following chemicals:
  - (1) Carbon Tetrachloride
  - (2) Phenol
  - (3) 4-Nitrobiphenyl
  - (4) Alpha-naphthylamine
  - (5) 4,4-Methylene Bis (2 chloroaniline)
  - (6) Methyl-chloromethylether
  - (7) 3,3-Dichlorobenzidine
  - (8) Bis (chloromethyl) ether
  - (9) Beta-naphthylamine
  - (10) Benzidine
  - (11) 4-Aminodiphenyl
  - (12) Ethyleneimine
  - (13) Beta-propiolactone
  - (14) 2-Acetylaminoflourene
  - (15) 4-Dimethylaminobenzene, and
  - (16) N-Nitrosodimethylamine

#### **460:15-1-31. Permissible explosives**

- (a) Black powder or dynamite is prohibited from being used or stored at any underground coal mine.
  - (1) Magazines shall be fire and bullet proof, lined with a non-parking material, secured with two (2) locks that can only be opened with a key and kept free of any inflammable material for a minimum distance of twenty-five (25) feet.
  - (2) Magazines shall not be closer than two hundred (200) feet from any mine opening.
  - (3) Signs shall be placed at each magazine prohibiting smoking and open lights and designating the area as explosives. Signs shall be so placed that a bullet fired at any of the signs will not hit the magazines.
  - (4) Explosives and detonators shall be stored in separate magazines.
  - (5) Explosives and detonators transported into the mine shall be in substantially constructed container and lined with a nonconductive material. Explosives and detonators shall be in separate containers or separated by a minimum of four (4) inches of hardwood or the equivalent.
  - (6) Underground storage boxes shall be of substantial construction-lined with a nonconductive material and places in a crosscut or idle room neck at least twenty-five (25) feet from roadways, power wires, and in a well rock-dusted area.
  - (7) Not more than a forty-eight (48) hour supply of explosives shall be stored underground.
  - (8) Only enough explosives and detonators will be taken to the face to shoot one area.
  - (9) Only permissible explosives shall be used in an underground coal mine.
  - (10) No more than one and one-half (1 1/2) pounds of permissible explosives can be charged in a continuous train.

(11) No portion of the shot hole shall be drilled on the solid, and all portions of shot holes shall have a burden in all directions of at least eighteen (18) inches.

(12) Stemming shall be of incombustible material and tamped with a nonconductive tamping bar.

(b) **Blasting.**

(1) It shall be the duty of the mine operator to employ adequate personnel who are certified as mine superintendent, mine foreman, fire-boss, or shot-firer to charge, tamp and fire all shots.

(2) When blasting for the sinking of shafts, slopes or for construction of overcast, undercast, roof brushing, or boom holes, a plan shall be submitted to the Department of Mines for approval.

(3) When the coal is to be undercut and shot, the roof, floor and ribs shall be rock-dusted to the face.

(4) Before firing the shot the shot-firer shall make a check of gas, clear the area of all personnel, and announce

three times, with a pause between each announcement, "fire-in the-hole". The charge may be fired if the area is clear.

(5) The shot-firer will inspect the shot area as soon as possible after the detonation for roof conditions, gas, fire, mis-fires, undetonated explosives, and other unsafe conditions which shall be reported immediately.

(6) Only electric detonators shall be used.

(7) A permissible blasting unit and at least one hundred (100) feet of well insulated blasting cable shall be used. The shot-firer shall take cover in a cross cut at least forty (40) feet outby the face and out of the line of air.

(8) The cable shall be short circuited at the power end until ready to attach to the blasting unit.

(9) The mine inspector shall approve all blasting plans and will make an inspection at least monthly with the shot-firer.