

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

Subpart D. ENVIRONMENTAL HEALTH AND SAFETY

ARTICLE IV. OCCUPATIONAL HEALTH AND SAFETY

CHAPTER 208 UNDERGROUND COAL MINE SAFETY

GENERAL PROVISIONS

§ 208.1. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

Act—The Bituminous Coal Mine Safety Act (52 P.S. §§ 690-101 – 690-708).

Approval or approved—The term as defined in section 104 of the act (52 P.S. § 690-104).

MSHA—The term as defined in section 104 of the act.

Miner—The term as defined in section 104 of the act.

NIOSH—The term as defined in section 104 of the act.

Operator—The term as defined in section 104 of the act.

Overpressure—The pressure over the background atmospheric pressure that could result from an explosion, which includes the impact of the pressure wave on an object.

psi—Pounds per square inch.

Representative of the miners—The term as defined in section 104 of the act.

SCSR—Self-contained self-rescue device—A type of closed-circuit, self-contained breathing apparatus approved by MSHA and NIOSH pursuant to 42 CFR Part 84 (relating to approval of respiratory protective device) for escape only from underground mines.

Underground bituminous coal mine or mine—The term as defined in section 104 of the act.

§ 208.2. Scope.

The safety standards and procedures in this chapter apply to all underground bituminous coal mines, operators and miners subject to the act.

§ 208.3. Access to material.

Upon request from the Department, or as required by this chapter, an operator shall submit to the Department a copy of any application, report, plan or other material submitted to MSHA pursuant to a regulation adopted by reference in this chapter. Upon request from the authorized representative of the miners, the Department will provide to the representative of the miners copies of an application, report, plan or other material submitted by an operator to MSHA pursuant to a regulation adopted by reference in this chapter.

SEALS

§ 208.11. Seals.

(a) *Seal installation.* The provisions of 30 CFR 75.335(c) (relating to seal installation approval) are incorporated by reference.

30 CFR § 75.335 (c) Seal installation

(c) Seal installation approval. The installation of the approved seal design shall be subject to approval in the ventilation plan. The mine operator shall--

(1) Retain the seal design approval and installation information for as long as the seal is needed to serve the purpose for which it was built.

(2) Designate a professional engineer to conduct or have oversight of seal installation and certify that the provisions in the approved seal design specified in this section have been addressed and are applicable to conditions at the mine. A copy of the certification shall be submitted to the District Manager with the information provided in paragraph (c)(3) of this section and a copy of the certification shall be retained for as long as the seal is needed to serve the purpose for which it was built.

(3) Provide the following information for approval in the ventilation plan--

(i) The MSHA Technical Support Approval Number;

(ii) A summary of the installation procedures;

(iii) The mine map of the area to be sealed and proposed seal locations that include the deepest points of penetration prior to sealing. The mine map shall be certified by a professional engineer or a professional land surveyor.

(iv) Specific mine site information, including--

(A) Type of seal;

(B) Safety precautions taken prior to seal achieving design strength;

(C) Methods to address site-specific conditions that may affect the strength and applicability of the seal including set-back distances;

(D) Site preparation;

(E) Sequence of seal installations;

(F) Projected date of completion of each set of seals;

(G) Supplemental roof support inby and outby each seal;

(H) Water flow estimation and dimensions of the water drainage system through the seals;

- (I) Methods to ventilate the outby face of seals once completed;
- (J) Methods and materials used to maintain each type of seal;
- (K) Methods to address shafts and boreholes in the sealed area;
- (L) Assessment of potential for overpressures greater than 120 psi in sealed area;
- (M) Additional sampling locations; and
- (N) Additional information required by the District Manager.

(b) *Seal Strength greater than 120 psi.* The provisions of 30 CFR 75.335(a)(3) shall be used for determining when the strength of a seal shall exceed 120 psi.

30 CFR § 75.335 (a)(3) Seal strength

(3) Overpressures greater than 120 psi if the atmosphere in the sealed area is not monitored and is not maintained inert, and

(i) The atmosphere in the sealed area is likely to contain homogeneous mixtures of methane between 4.5 percent and 17.0 percent and oxygen exceeding 17.0 percent throughout the entire area;

(ii) Pressure piling could result in overpressures greater than 120 psi in the area to be sealed; or

(iii) Other conditions are encountered, such as the likelihood of a detonation in the area to be sealed.

(iv) Where the conditions in paragraphs (a)(3)(i), (ii), or (iii) of this section are encountered, the mine operator shall revise the ventilation plan to address the potential hazards. The plan shall include seal strengths sufficient to address such conditions.

(a) Seal strengths. Seals constructed on or after October 20, 2008 shall be designed, constructed, and maintained to withstand--

(c) *Seal installation approval.* The operator shall submit an application to install the MSHA-approved seal design to the Department for its review and approval concerning seal installation. An approved application to install the seal shall be made part of the abandoned area ventilation plan required by section 235 of the act (52 P.S. § 690-235) regarding unused and abandoned parts of mines and follow 30 CFR 75.335(c).

(1) The operator shall provide the representative of the miners, if applicable, the approved seal design installation application at the same time the operator submits the application to the Department.

(2) Any individual installing the seal shall do so in accordance with the approved abandoned area ventilation plan.

§ 208.12. Sampling and monitoring requirements.

The provisions of 30 CFR 75.336 (relating to sampling and monitoring requirements) are incorporated by reference.

30 CFR § 75.336

Sampling and monitoring requirements.

(a) A certified person as defined in § 75.100 shall monitor atmospheres of sealed areas. Sealed areas shall be monitored, whether ingassing or outgassing, for methane and oxygen concentrations and the direction of leakage.

(1) Each sampling pipe and approved sampling location shall be sampled at least every 24 hours.

(i) Atmospheres with seals of 120 psi or greater shall be sampled until the design strength is reached for every seal used to seal the area.

(ii) Atmospheres with seals less than 120 psi constructed before October 20, 2008 shall be monitored for methane and oxygen concentrations and maintained inert. The operator may request that the District Manager approve different sampling locations and frequencies in the ventilation plan, provided at least one sample is taken at each set of seals at least every 7 days.

(iii) Atmospheres with seals less than 120 psi constructed after October 20, 2008 shall be monitored for methane and oxygen concentrations and maintained inert. The operator may request that the District Manager approve different sampling locations and frequencies in the ventilation plan after a minimum of 14 days and after the seal design strength is reached, provided at least one sample is taken at each set of seals at least every 7 days.

(2) The mine operator shall evaluate the atmosphere in the sealed area to determine whether sampling through the sampling pipes in seals and approved locations provides appropriate sampling locations of the sealed area. The mine operator shall make the evaluation immediately after the minimum 14-day required sampling, if the mine ventilation system is reconfigured, if changes occur that adversely affect the sealed area, or if the District Manager requests an evaluation. When the results of the evaluations indicate the need for additional sampling locations, the mine operator shall provide the additional locations and have them approved in the ventilation plan. The District Manager may require additional sampling locations and frequencies in the ventilation plan.

(3) Mine operators with an approved ventilation plan addressing spontaneous combustion pursuant to § 75.334(f) shall sample the sealed atmosphere in accordance with the ventilation plan.

(4) The District Manager may approve in the ventilation plan the use of a continuous monitoring system in lieu of monitoring provisions in this section.

(b)(1) Except as provided in § 75.336(d), the atmosphere in the sealed area is considered inert when the oxygen concentration is less than 10.0 percent or the methane concentration is less than 3.0 percent or greater than 20.0 percent.

(2) Immediate action shall be taken by the mine operator to restore an inert sealed atmosphere behind seals with strengths less than 120 psi. Until the atmosphere in the sealed area is restored to an inert condition, the sealed atmosphere shall be monitored at each sampling pipe and approved location at least once every 24 hours.

(c) Except as provided in § 75.336(d), when a sample is taken from the sealed atmosphere with seals of less than 120 psi and the sample indicates that the oxygen concentration is 10 percent or greater and methane is between 4.5 percent and 17 percent, the mine operator shall immediately take an additional sample and then immediately notify the District Manager.

When the additional sample indicates that the oxygen concentration is 10 percent or greater and methane is between 4.5 percent and 17 percent, persons shall be withdrawn from the affected area which is the entire mine or other affected area identified by the operator and approved by the District Manager in the ventilation plan, except those persons referred to in § 104(c) of the Act. The operator may identify areas in the ventilation plan to be approved by

the District Manager where persons may be exempted from withdrawal. The operator's request shall address the location of seals in relation to: Areas where persons work and travel in the mine; escapeways and potential for damage to the escapeways; and ventilation systems and controls in areas where persons work or travel and where ventilation is used for escapeways. The operator's request shall also address the gas concentration of other sampling locations in the sealed area and other required information. Before miners reenter the mine, the mine operator shall have a ventilation plan revision approved by the District Manager specifying the actions to be taken.

(d) In sealed areas with a demonstrated history of carbon dioxide or sealed areas where inert gases have been injected, the operator may request that the District Manager approve in the ventilation plan an alternative method to determine if the sealed atmosphere is inert and when miners have to be withdrawn. The mine operator shall address in the ventilation plan the specific levels of methane, carbon dioxide, nitrogen and oxygen; the sampling methods and equipment used; and the methods to evaluate these concentrations underground at the seal.

(e) Recordkeeping. (1) The certified person shall promptly record each sampling result including the location of the sampling points, whether ingassing or outgassing, and oxygen and methane concentrations. The results of oxygen and methane samples shall be recorded as the percentage of oxygen and methane measured by the certified person and any hazardous condition found in accordance with § 75.363.

(2) The mine operator shall retain sampling records at the mine for at least one year from the date of the sampling.

§ 208.13. Construction and repair of seals.

(a) *General.* The provisions of 30 CFR § 75.337 (relating to construction and repair of seals) are incorporated by reference.

30 CFR § 75.337 Construction and repair of seals.

(a) The mine operator shall maintain and repair seals to protect miners from hazards of sealed areas.

(b) Prior to sealing, the mine operator shall--

(1) Remove insulated cables, batteries, and other potential electric ignition sources from the area to be sealed when constructing seals, unless it is not safe to do so. If ignition sources cannot safely be removed, seals must be constructed to at least 120 psi;

(2) Remove metallic objects through or across seals; and

(3) Breach or remove all stoppings in the first crosscut inby the seals immediately prior to sealing the area.

(c) A certified person designated by the mine operator shall directly supervise seal construction and repair and--

(1) Examine each seal site immediately prior to construction or repair to ensure that the site is in accordance with the approved ventilation plan;

(2) Examine each seal under construction or repair during each shift to ensure that the seal is being constructed or repaired in accordance with the approved ventilation plan;

(3) Examine each seal upon completion of construction or repair to ensure that construction or repair is in accordance with the approved ventilation plan;

(4) Certify by initials, date, and time that the examinations were made; and

(5) Make a record of the examination at the completion of any shift during which an examination was conducted. The record shall include each deficiency and the corrective

action taken. The record shall be countersigned by the mine foreman or equivalent mine official by the end of the mine foreman's or equivalent mine official's next regularly scheduled working shift. The record shall be kept at the mine for one year.

(d) Upon completion of construction of each seal a senior mine management official, such as a mine manager or superintendent, shall certify that the construction, installation, and materials used were in accordance with the approved ventilation plan. The mine operator shall retain the certification for as long as the seal is needed to serve the purpose for which it was built.

(e) The mine operator shall--

(1) Notify the District Manager between two and fourteen days prior to commencement of seal construction;

(2) Notify the District Manager, in writing, within five days of completion of a set of seals and provide a copy of the certification required in paragraph (d) of this section; and

(3) Submit a copy of quality control results to the District Manager for seal material properties specified by § 75.335 within 30 days of completion of quality control tests.

(f) Welding, cutting, and soldering. Welding, cutting, and soldering with an arc or flame are prohibited within 150 feet of a seal. An operator may request a different location in the ventilation plan to be approved by the District Manager. The operator's request must address methods the mine operator will use to continuously monitor atmospheric conditions in the sealed area during welding or burning; the airflow conditions in and around the work area; the rock dust and water application methods; the availability of fire extinguishers on hand; the procedures to maintain safe conditions, and other relevant factors.

(g) Sampling pipes. (1) For seals constructed after April 18, 2008, one non-metallic sampling pipe shall be installed in each seal that shall extend into the center of the first connecting crosscut inby the seal. If an open crosscut does not exist, the sampling pipe shall extend one-half of the distance of the open entry inby the seal.

(2) Each sampling pipe shall be equipped with a shut-off valve and appropriate fittings for taking gas samples.

(3) The sampling pipes shall be labeled to indicate the location of the sampling point when more than one sampling pipe is installed through a seal.

(4) If a new seal is constructed to replace or reinforce an existing seal with a sampling pipe, the sampling pipe in the existing seal shall extend through the new seal. An additional sampling pipe shall be installed through each new seal to sample the area between seals, as specified in the approved ventilation plan.

(h) Water drainage system. For each set of seals constructed after April 18, 2008, the seal at the lowest elevation shall have a corrosion-resistant, non-metallic water drainage system. Seals shall not impound water or slurry. Water or slurry shall not accumulate within the sealed area to any depth that can adversely affect a seal.

(b) *Welding, cutting, and soldering.* The operator shall submit to the Department and the representative of the miners the same information submitted to MSHA under 30 CFR 75.337(f). Any welding, cutting or soldering within 150 feet of a seal shall be performed in accordance with the MSHA approval.

§ 208.14. Training.

The provisions of 30 CFR 75.338 (relating to training) are incorporated by reference.

30 CFR § 75.338

Training.

(a) Certified persons conducting sampling shall be trained in the use of appropriate sampling equipment, procedures, location of sampling points, frequency of sampling, size and condition of the sealed area, and the use of continuous monitoring systems if applicable before they conduct sampling, and annually thereafter. The mine operator shall certify the date of training provided to certified persons and retain each certification for two years.

(b) Miners constructing or repairing seals, designated certified persons, and senior mine management officials shall be trained prior to constructing or repairing a seal and annually thereafter. The training shall address materials and procedures in the approved seal design and ventilation plan. The mine operator shall certify the date of training provided each miner, certified person, and senior mine management official and retain each certification for two years.

§ 208.15. Seals records.

(a) *General.* The provisions of 30 CFR 75.339 (relating to seals records) are incorporated by reference.

(b) *Access to records.* Upon request from the Department, or from the authorized representative of the miners, mine operators shall provide access to any record required by this section.

30 CFR § 75.339 Seals records.

(a) The table entitled "Seal Recordkeeping Requirements" lists records the operator shall maintain and the retention period for each record.

Table--§ 75.339(a) Seal Recordkeeping Requirements

Record	Section reference	Retention time
(1) Approved seal design.....	75.335(c) (1).....	As long as the seal is needed to serve the purpose for which it is built.
(2) Certification of Provisions of Approved Seal Design is Addressed.	75.335(c) (2).....	As long as the seal is needed to serve the purpose for which it is built.
(3) Gas sampling records.....	75.336(e) (2).....	1 year.
(4) Record of examinations....	75.337(c) (5).....	1 year.
(5) Certification of seal construction, installation, and materials.	75.337(d).....	As long as the seal is needed to serve the purpose for which it is built.
(6) Certification of Training for Persons that Sample.	75.338(a).....	2 years.
(7) Certification of Training for Persons that Perform Seal Construction and Repair.	75.338(b).....	2 years.

(b) Records required by §§ 75.335, 75.336, 75.337 and 75.338 shall be retained at a surface location at the mine in a secure book that is not susceptible to alteration. The records may be retained electronically in a computer system that is secure and not susceptible to alteration, if the mine operator can immediately access the record from the mine site.

(c) Upon request from an authorized representative of the Secretary of Labor, the Secretary of Health and Human Services, or from the authorized representative of miners, mine operators shall promptly provide access to any record listed in the table in this section.

(d) Whenever an operator ceases to do business or transfers control of the mine to another entity, that operator shall transfer all records required to be maintained by this part, or a copy thereof, to any successor operator who shall maintain them for the required period.

ESCAPEWAYS

§ 208.21. Escapeways.

(a) *Bituminous and lignite mines.* The provisions of 30 CFR 75.380 (relating to escapeways; bituminous and lignite mines) are incorporated by reference except that the language in 30 CFR 75.380(c) allowing the two escapeways to end in one multiple compartment shaft or slope separated by walls is not incorporated by reference.

30 CFR § 75.380

Escapeways; bituminous and lignite mines.

(a) Except in situations addressed in §§75.381, §75.385and §75.386, at least two separate and distinct travelable passageways shall be designated as escapeways and shall meet the requirements of this section.

(b) (1) Escapeways shall be provided from each working section, and each area where mechanized mining equipment is being installed or removed, continuous to the surface escape drift opening or continuous to the escape shaft or slope facilities to the surface.

(2) During equipment installation, these escapeways shall begin at the projected location for the section loading point. During equipment removal, they shall begin at the location of the last loading point.

(d) Each escapeway shall be-- (1) Maintained in a safe condition to always assure passage of anyone, including disabled persons;

(2) Clearly marked to show the route and direction of travel to the surface;

(3) Maintained to at least a height of 5 feet from the mine floor to the mine roof, excluding the thickness of any roof support, except that the escapeways shall be maintained to at least the height of the coalbed, excluding the thickness of any roof support, where the coalbed is less than 5 feet. In areas of mines where escapeways pass through doors, the height may be less than 5 feet, provided that sufficient height is maintained to enable miners, including disabled persons, to escape quickly in an emergency. In areas of mines developed before November 16, 1992, where escapeways pass over or under overcasts or undercasts, the height may be less than 5 feet provided that sufficient height is maintained to enable miners, including disabled persons, to escape quickly in an emergency. When there is a need to determine whether sufficient height is provided, MSHA may require a stretcher test where 4 persons carry a miner through the area in question on a stretcher;

(4) Maintained at least 6 feet wide except--

(i) Where necessary supplemental roof support is installed, the escapeway shall not be less than 4 feet wide; or

(ii) Where the route of travel passes through doors or other permanent ventilation controls, the escapeway shall be at least 4 feet wide to enable miners to escape quickly in an emergency, or

(iii) Where the alternate escapeway passes through doors or other permanent ventilation controls or where supplemental roof support is required and sufficient width is maintained to enable miners, including disabled persons, to escape quickly in an emergency. When

there is a need to determine whether sufficient width is provided, MSHA may require a stretcher test where 4 persons carry a miner through the area in question on a stretcher, or

(iv) Where mobile equipment near working sections, and other equipment essential to the ongoing operation of longwall sections, is necessary during normal mining operations, such as material cars containing rock dust or roof control supplies, or is to be used for the evacuation of miners off the section in the event of an emergency. In any instance, escapeways shall be of sufficient width to enable miners, including disabled persons, to escape quickly in an emergency. When there is a need to determine whether sufficient width is provided, MSHA may require a stretcher test where 4 persons carry a miner through the area in question on a stretcher;

(5) Located to follow the most direct, safe and practical route to the nearest mine opening suitable for the safe evacuation of miners; and

(6) Provided with ladders, stairways, ramps, or similar facilities where the escapeways cross over obstructions.

(7) Provided with a continuous, durable directional lifeline or equivalent device that shall be--

(i) Installed and maintained throughout the entire length of each escapeway as defined in paragraph (b)(1) of this section;

(ii) Flame-resistant in accordance with the requirements of part 18 of this chapter upon replacement of existing lifelines; but in no case later than June 15, 2009;

(iii) Marked with a reflective material every 25 feet;

(iv) Located in such a manner for miners to use effectively to escape;

(v) Equipped with one directional indicator cone securely attached to the lifeline, signifying the route of escape, placed at intervals not exceeding 100 feet. Cones shall be installed so that the tapered section points inby;

(vi) Equipped with one sphere securely attached to the lifeline at each intersection where personnel doors are installed in adjacent crosscuts;

(vii) Equipped with two securely attached cones, installed consecutively with the tapered section pointing inby, to signify an attached branch line is immediately ahead. (A) A branch line leading from the lifeline to an SCSR cache will be marked with four cones with the base sections in contact to form two diamond shapes. The cones must be placed within reach of the lifeline. (B) A branch line leading from the lifeline to a refuge alternative will be marked with a rigid spiraled coil at least eight inches in length. The spiraled coil must be placed within reach of the lifeline (see Illustration 1 below).

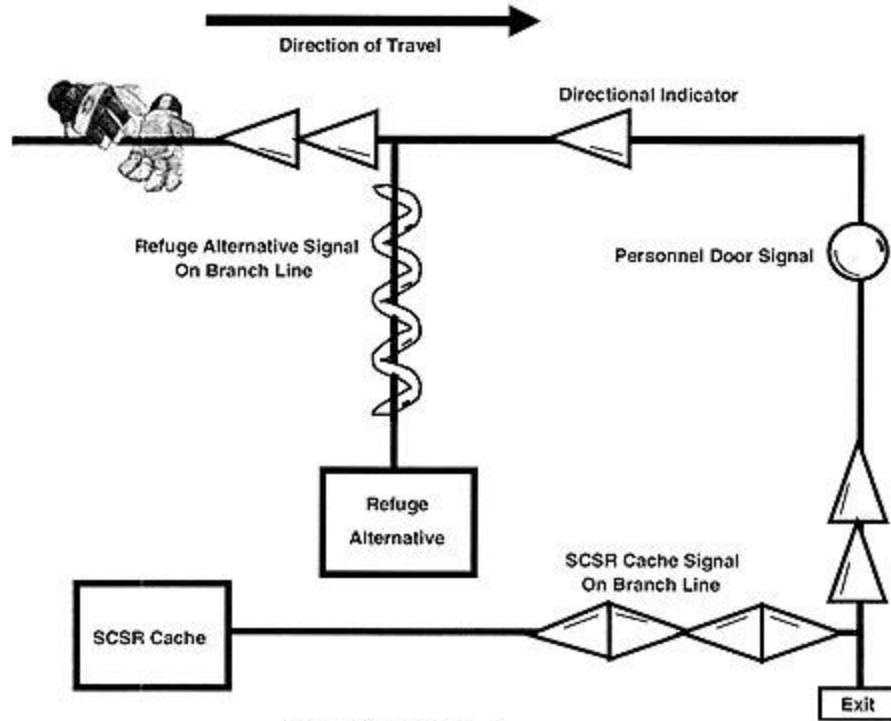


Illustration 1

(e) Surface openings shall be adequately protected to prevent surface fires, fumes, smoke, and flood water from entering the mine.

(f) *Primary escapeway.* (1) One escapeway that is ventilated with intake air shall be designated as the primary escapeway. The primary escapeway shall have a higher ventilation pressure than the belt entry unless the mine operator submits an alternative in the mine ventilation plan to protect the integrity of the primary escapeway, based on mine specific conditions, which is approved by the district manager.

(2) Paragraphs (f)(3) through (f)(7) of this section apply as follows:

- (i) To all areas of a primary escapeway developed on or after November 16, 1992;
- (ii) Effective as of June 10, 1997, to all areas of a primary escapeway developed between March 30, 1970 and November 16, 1992; and
- (iii) Effective as of March 11, 1997, to all areas of the primary escapeway developed prior to March 30, 1970 where separation of the belt and trolley haulage entries from the primary escapeway existed prior to November 16, 1992.

(3) The following equipment is not permitted in the primary escapeway:

- (i) Mobile equipment hauling coal except for hauling coal incidental to cleanup or maintenance of the primary escapeway.
- (ii) Compressors, except--
 - (A) Compressors necessary to maintain the escapeway in safe, travelable condition;
 - (B) Compressors that are components of equipment such as locomotives and rock dusting machines; and
 - (C) Compressors of less than five horsepower.
- (iii) Underground transformer stations, battery charging stations, substations, and rectifiers except--
 - (A) Where necessary to maintain the escapeway in safe, travelable condition; and
 - (B) Battery charging stations and rectifiers and power centers with transformers that are

either dry-type or contain nonflammable liquid, provided they are located on or near a working section and are moved as the section advances or retreats.

(iv) Water pumps, except--

(A) Water pumps necessary to maintain the escapeway in safe, travelable condition;

(B) Submersible pumps;

(C) Permissible pumps and associated permissible switchgear;

(D) Pumps located on or near a working section that are moved as the section advances or retreats;

(E) Pumps installed in anthracite mines; and

(F) Small portable pumps.

(4) Mobile equipment operated in the primary escapeway, except for continuous miners and as provided in paragraphs (f)(5), (f)(6), and (f)(7) of this section, shall be equipped with a fire suppression system installed according to §§75.1107-3 through 75.1107-16 that is--

(i) Manually operated and attended continuously by a person trained in the systems function and use, or

(ii) A multipurpose dry chemical type capable of both automatic and manual activation.

(5) Personnel carriers and small mobile equipment designed and used only for carrying people and small hand tools may be operated in primary escapeways if--

(i) The equipment is provided with a multipurpose dry chemical type fire suppression system capable of both automatic and manual activation, and the suppression system is suitable for the intended application and is listed or approved by a nationally recognized independent testing laboratory, or,

(ii) Battery powered and provided with two 10 pound multipurpose dry chemical portable fire extinguishers.

(6) Notwithstanding the requirements of paragraph (f)(3)(i), mobile equipment not provided with a fire suppression system may operate in the primary escapeway if no one is in by except those persons directly engaged in using or moving the equipment.

(7) Notwithstanding the requirements of paragraph (f)(3)(i), mobile equipment designated and used only as emergency vehicles or ambulances, may be operated in the primary escapeway without fire suppression systems.

(g) Except where separation of belt and trolley haulage entries from designated escapeways did not exist before November 15, 1992, and except as provided in § 75.350(c), the primary escapeway must be separated from belt and trolley haulage entries for its entire length, to and including the first connecting crosscut outby each loading point except when a greater or lesser distance for this separation is specified and approved in the mine ventilation plan and does not pose a hazard to miners.

(h) *Alternate escapeway.* One escapeway shall be designated as the alternate escapeway. The alternate escapeway shall be separated from the primary escapeway for its entire length, except that the alternate and primary escapeways may be ventilated from a common intake air shaft or slope opening.

(i) Mechanical escape facilities shall be provided and maintained for--

(1) Each shaft that is part of a designated escapeway and is greater than 50 feet in depth; and

(2) Each slope from the coal seam to the surface that is part of a designated escapeway and is inclined more than 9 degrees from the horizontal.

(j) Within 30 minutes after mine personnel on the surface have been notified of an emergency requiring evacuation, mechanical escape facilities provided under paragraph (i) of this section shall be operational at the bottom of shaft and slope openings that are part of escapeways.

(k) Except where automatically activated hoisting equipment is used, the bottom of each shaft or slope opening that is part of a designated escapeway shall be equipped with a means of signaling a surface location where a person is always on duty when anyone is underground. When the signal is activated or the evacuation of persons underground is necessary, the person shall assure that mechanical escape facilities are operational as required by paragraph (j) of this section.

(1)(1) Stairways or mechanical escape facilities shall be installed in shafts that are part of the designated escapeways and that are 50 feet or less in depth, except ladders may be used in shafts that are part of the designated escapeways and that are 5 feet or less in depth.

(2) Stairways shall be constructed of concrete or metal, set on an angle not to exceed 45 degrees from the horizontal, and equipped on the open side with handrails. In addition, landing platforms that are at least 2 feet by 4 feet shall be installed at intervals not to exceed 20 vertical feet on the stairways and equipped on the open side with handrails.

(3) Ladders shall be constructed of metal, anchored securely, and set on an angle not to exceed 60 degrees from the horizontal.

(m) A travelway designed to prevent slippage shall be provided in slope and drift openings that are part of designated escapeways, unless mechanical escape facilities are installed.

(b) *Mechanical and escape facilities.* The provisions of 30 CFR 75.382 (relating to mechanical escape facilities) are incorporated by reference.

30 CFR § 75.382

Mechanical escape facilities.

(a) Mechanical escape facilities shall be provided with overspeed, overwind, and automatic stop controls.

(b) Every mechanical escape facility with a platform, cage, or other device shall be equipped with brakes that can stop the fully loaded platform, cage, or other device.

(c) Mechanical escape facilities, including automatic elevators, shall be examined weekly. The weekly examination of this equipment may be conducted at the same time as a daily examination required by §75.1400-3.

(1) The weekly examination shall include an examination of the headgear, connections, links and chains, overspeed and overwind controls, automatic stop controls, and other facilities.

(2) At least once each week, the hoist shall be run through one complete cycle of operation to determine that it is operating properly.

(d) A person trained to operate the mechanical escape facility always shall be available while anyone is underground to provide the mechanical escape facilities, if required, to the bottom of each shaft and slope opening that is part of an escapeway within 30 minutes after personnel on the surface have been notified of an emergency requiring evacuation.

However, no operator is required for automatically operated cages, platforms, or elevators.

(e) Mechanical escape facilities shall have rated capacities consistent with the loads handled.

(f) Manually-operated mechanical escape facilities shall be equipped with indicators that

accurately and reliably show the position of the facility.

(g) Certification. The person making the examination as required by paragraph (c) of this section shall certify by initials, date, and the time that the examination was made. Certifications shall be made at or near the facility examined.

(c) *Longwall and shortwall travelways.* The provisions of 30 CFR 75.384 (relating to longwall and shortwall travelways) are incorporated by reference. If a roof fall or other blockage occurs that prevents travel in the travelway, the mine operator shall notify the department.

CFR § 75.384

Longwall and shortwall travelways.

(a) If longwall or shortwall mining systems are used and the two designated escapeways required by §75.380 are located on the headgate side of the longwall or shortwall, a travelway shall be provided on the tailgate side of that longwall or shortwall. The travelway shall be located to follow the most direct and safe practical route to a designated escapeway.

(b) The route of travel shall be clearly marked.

(c) When a roof fall or other blockage occurs that prevents travel in the travelway--

(1) Work shall cease on the longwall or shortwall face;

(2) Miners shall be withdrawn from face areas to a safe area outby the section loading point; and

(3) MSHA shall be notified.

(d) Work may resume on the longwall or shortwall face after the procedures set out in §§75.215 and 75.222 are implemented.

BELTS

§ 208.31. Approval of conveyor belts.

The provisions of 30 CFR 75.1108(b) and (c) (relating to approved conveyor belts) are incorporated by reference.

30 CFR § 75.1108

Approved conveyor belts

(b) Effective December 31, 2009 conveyor belts placed in service in underground coal mines shall be approved under Part 14. If MSHA determines that Part 14 approved belt is not available, the Agency will consider an extension of the effective date.

(c) Effective December 31, 2018 all conveyor belts used in underground coal mines shall be approved under Part 14.

§ 208.32. Maintenance of belt conveyors and belt conveyor entries.

(a) *Maintenance standards.* The provisions of 30 CFR 75.1731 (relating to maintenance of belt conveyors and belt conveyor entries) are incorporated by reference.

CFR § 75.1731

Maintenance of belt conveyors and belt conveyor entries.

(a) Damaged rollers, or other damaged belt conveyor components, which pose a fire hazard must be immediately repaired or replaced. All other damaged rollers, or other damaged belt conveyor components, must be repaired or replaced.

(b) Conveyor belts must be properly aligned to prevent the moving belt from rubbing against the structure or components.

(c) Materials shall not be allowed in the belt conveyor entry where the material may contribute to a frictional heating hazard.

(d) Splicing of any approved conveyor belt must maintain flame- resistant properties of the belt.

(b) *Inspections.* Individuals conducting inspections of belt conveyors required under sections 218 and 218.1 of the act (52 P.S. §§ 690-218 and 690-218.1) regarding preshift examination at fixed intervals and supplemental inspection shall address compliance with this section's maintenance requirements.

EMERGENCIES

§ 208.41. Emergency evacuation.

(a) *Emergency evacuation.* The provisions of 30 CFR 75.1501 (relating to emergency evacuations) are incorporated by reference.

30 CFR § 75.1501

Emergency evacuations.

(a) For each shift that miners work underground, there shall be in attendance a responsible person designated by the mine operator to take charge during mine emergencies involving a fire, explosion, or gas or water inundation.

(1) The responsible person shall have current knowledge of the assigned location and expected movements of miners underground, the operation of the mine ventilation system, the locations of the mine escapeways and refuge alternatives, the mine communications system, any mine monitoring system if used, locations of firefighting equipment, the mine's Emergency Response Plan, the Mine Rescue Notification Plan, and the Mine Emergency Evacuation and Firefighting Program of Instruction.

(2) The responsible person shall be trained annually in a course of instruction in mine emergency response, as prescribed by MSHA's Office of Educational Policy and Development. The course will include topics such as the following:

- (i) Organizing a command center;
- (ii) Coordinating firefighting personnel;
- (iii) Deploying firefighting equipment;
- (iv) Coordinating mine rescue personnel;
- (v) Establishing fresh air base;
- (vi) Deploying mine rescue teams;
- (vii) Providing for mine gas sampling and analysis;
- (viii) Establishing security;
- (ix) Initiating an emergency mine evacuation;
- (x) Contacting emergency personnel; and
- (xi) Communicating appropriate information related to the emergency.

(3) The operator shall certify by signature and date after each responsible person has completed the training and keep the certification at the mine for 1 year.

(b) The responsible person shall initiate and conduct an immediate mine evacuation when there is a mine emergency which presents an imminent danger to miners due to fire or explosion or gas or water inundation. Only properly trained and equipped persons essential to respond to the mine emergency may remain underground.

(c) The mine operator shall instruct all miners of the identity of the responsible person designated by the operator for their workshift. The mine operator shall instruct miners of any change in the identity of the responsible person before the start of their workshift.

(d) Nothing in this section shall be construed to restrict the ability of other persons in the mine to warn of an imminent danger which warrants evacuation.

(b) *Individual located on the surface.* An individual designated by the mine operator who is adequately trained and is capable of initiating the emergency response plan shall be located on the surface in the event the designated responsible person is not available.

§ 208.42. Emergency evacuation and firefighting program of instruction.

The provisions of 30 CFR 75.1502 (relating to mine emergency evacuation and firefighting program of instruction) are incorporated by reference.

30 CFR § 75.1502

Mine emergency evacuation and firefighting program of instruction.

Each operator of an underground coal mine shall adopt and follow a mine emergency evacuation and firefighting program that instructs all miners in the proper procedures they must follow if a mine emergency occurs.

(a) Program approval. The operator shall submit this program of instruction, and any revisions, for approval to the District Manager of the Coal Mine Safety and Health district in which the mine is located. Within 30 days of approval, the operator shall conduct training in accordance with the revised program.

(b) New or revised provisions. Before implementing any new or revised approved provision in the program of instruction, the operator shall instruct miners in the change.

(c) Instruction plan. The approved program shall include a specific plan designed to instruct miners on all shifts on the following:

(1) Procedures for--

(i) Evacuating the mine for mine emergencies that present an imminent danger to miners due to fire, explosion, or gas or water inundation;

(ii) Evacuating all miners not required for a mine emergency response; and

(iii) The rapid assembly and transportation of necessary miners, fire suppression equipment, and rescue apparatus to the scene of the mine emergency.

(2) The use, care, and maintenance of self-rescue devices, including hands-on training in the complete donning and transferring of all types of self-rescue devices used at the mine.

(3) The deployment, use, and maintenance of refuge alternatives.

(4) Scenarios requiring a discussion of options and a decision as to the best option for evacuation under each of the various mine emergencies (fires, explosions, or gas or water inundations). These options shall include:

(i) Encountering conditions in the mine or circumstances that require immediate donning of self-rescue devices.

(ii) Using continuous directional lifelines or equivalent devices, tethers, and doors;

(iii) Traversing undercasts or overcasts;

(iv) Switching escapeways, as applicable;

(v) Negotiating any other unique escapeway conditions; and

(vi) Using refuge alternatives.

(5) Location and use of the fire suppression and firefighting equipment and materials available in the mine.

(6) Location of the escapeways, exits, routes of travel to the surface, including the location of continuous directional lifelines or equivalent devices.

(7) Location, quantity, types, and use of stored SCSRs, as applicable.

(8) A review of the mine map; the escapeway system; the escape, firefighting, and emergency evacuation plan in effect at the mine; and the locations of refuge alternatives and abandoned areas.

(9) A description of how miners will receive annual expectations training that includes practical experience in donning and transferring SCSRs in smoke, simulated smoke, or an equivalent environment and breathing through a realistic SCSR training unit or device that provides the sensation of SCSR airflow resistance and heat.

(10) A summary of the procedures related to deploying refuge alternatives.

(11) A summary of the construction methods for 15 psi stoppings constructed prior to an event.

(12) A summary of the procedures related to refuge alternative use.

(d) *Instructors.* (1) The mine operator shall designate a person who has the ability, training, knowledge, or experience to conduct the mine emergency evacuation instruction and drills in his or her area of expertise.

(2) Persons conducting SCSR donning and transferring training shall be able to effectively train and evaluate whether miners can successfully don the SCSR and transfer to additional SCSR devices.

§ 208.43. Use of fire suppression equipment.

The provisions of 30 CFR 75.1503 (relating to use of fire suppression equipment) are incorporated by reference.

30 CFR § 75.1503

Use of fire suppression equipment.

In addition to the approved program of instruction required by 30 CFR 75.1502, each operator of an underground coal mine shall ensure the following.

(a) Working section. At least two miners in each working section on each production shift shall be proficient in the use of all fire suppression equipment available on such working section, and know the location of such fire suppression equipment.

(b) Attended equipment. Each operator of attended equipment specified in 30 CFR

75.1107-1(c)(1), and each miner assigned to perform job duties at the job site in the direct line of sight of attended equipment as described in 30 CFR 75.1107-1(c)(2), shall be proficient in the use of fire suppression devices installed on such attended equipment.

(c) Maintenance shift. The shift foreman and at least one miner for every five miners working underground on a maintenance shift shall be proficient in the use of fire suppression equipment available in the mine, and know the location of such fire suppression equipment.

§ 208.44. Mine emergency evacuation training and drills.

The provisions of 30 CFR 75.1504 (relating to mine emergency evacuation training and drills) are incorporated by reference.

30 CFR § 75.1504

Mine emergency evacuation training and drills.

Each operator of an underground coal mine shall conduct mine emergency evacuation training and drills and require all miners to participate.

(a) *Schedule of training and drills.* Each miner shall participate in a mine emergency evacuation training and drill once each quarter. Quarters shall be based on a calendar year (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec). In addition--

(1) A newly hired miner, who has not participated in a mine emergency evacuation training and drill at the mine within the previous 3 months, shall participate in the next applicable mine emergency evacuation training and drill.

(2) Prior to assuming duties on a section or outby work location, a foreman shall travel both escapeways in their entirety.

(b) *Content of quarterly training and drill.* Each quarterly evacuation training and drill shall include the following:

(1) Hands-on training on all types of self-rescue devices used at the mine, which includes--

(i) Instruction and demonstration in the use, care, and maintenance of self-rescue devices;

(ii) The complete donning of the SCSR by assuming a donning position, opening the device, activating the device, inserting the mouthpiece, and putting on the nose clip; and

(iii) Transferring between all applicable self-rescue devices.

(2) Training that emphasizes the importance of--

(i) Recognizing when the SCSR is not functioning properly and demonstrating how to initiate and reinstate the starting sequence;

(ii) Not removing the mouthpiece, even to communicate, until the miner reaches fresh air; and

(iii) Proper use of the SCSR by controlling breathing and physical exertion.

(3) A realistic escapeway drill that is initiated and conducted with a different approved scenario each quarter and during which each miner--

(i) Travels the primary or alternate escapeway in its entirety, alternating escapeways each quarter;

(ii) Physically locates and practices using the continuous directional lifelines or equivalent devices and tethers, and physically locates the stored SCSRs and refuge alternatives;

(iii) Traverses undercasts or overcasts and doors;

- (iv) Switches escapeways, as applicable; and
 - (v) Negotiates any other unique escapeway conditions.
 - (4) A review of the mine and escapeway maps, the firefighting plan, and the mine emergency evacuation plan in effect at the mine, which shall include:
 - (i) Informing miners of the locations of fire doors, check curtains, changes in the routes of travel, and plans for diverting smoke from escapeways.
 - (ii) Locating escapeways, exits, routes of travel to the surface, abandoned areas, and refuge alternatives.
 - (5) Operation of the fire suppression equipment available in the mine and the location and use of firefighting equipment and materials.
 - (6) Reviewing the procedures for deploying refuge alternatives and components.
 - (7) For miners who will be constructing the 15 psi stoppings prior to an event, reviewing the procedures for constructing them.
 - (8) Reviewing the procedures for use of the refuge alternatives and components.
 - (9) Task training in proper transportation of the refuge alternatives and components.
- (c) *Annual expectations training.* Over the course of each year, each miner shall participate in expectations training that includes the following:
- (1) Donning and transferring SCSRs in smoke, simulated smoke, or an equivalent environment.
 - (2) Breathing through a realistic SCSR training unit that provides the sensation of SCSR airflow resistance and heat.
 - (3) Deployment and use of refuge alternatives similar to those in use at the mine, including--
 - (i) Deployment and operation of component systems; and
 - (ii) Instruction on when to use refuge alternatives during a mine emergency, emphasizing that it is the last resort when escape is impossible.
 - (4) A miner shall participate in expectations training within one quarter of being employed at the mine.
- (d) *Certification of training and drills.* At the completion of each training or drill required in this section, the operator shall certify by signature and date that the training or drill was held in accordance with the requirements of this section.
- (1) This certification shall include the names of the miners participating in the training or drill. For each miner, this certification shall list the content of the training or drill component completed, including the escapeway traveled and scenario used, as required in paragraphs (b) and (c) of this section.
 - (2) Certifications shall be kept at the mine for one year.
 - (3) Upon request, the certifications shall be made available to an authorized representative of the Secretary and the representative of the miners.
 - (4) Upon request, a copy of the certification that shows his or her own training shall be provided to the participating miner.

§ 208.45. Escapeway maps.

The provisions of 30 CFR 75.1505 (relating to escapeway maps) are incorporated by reference.

30 CFR § 75.1505

Escapeway maps.

(a) Content and accessibility. An escapeway map shall show the designated escapeways from the working sections or the miners' work stations to the surface or the exits at the bottom of the shaft or slope, refuge alternatives, and SCSR storage locations. The escapeway map shall be posted or readily accessible for all miners--

- (1) In each working section;
- (2) In each area where mechanized mining equipment is being installed or removed;
- (3) At the refuge alternative; and
- (4) At a surface location of the mine where miners congregate, such as at the mine bulletin board, bathhouse, or waiting room.

(b) Keeping maps current. All maps shall be kept up-to-date and any change in route of travel, location of doors, location of refuge alternatives, or direction of airflow shall be shown on the maps by the end of the shift on which the change is made.

(c) Informing affected miners. Miners underground on a shift when any such change is made shall be notified immediately of the change and other affected miners shall be informed of the change before entering the underground areas of the mine.

§ 208.46. Refuge alternatives.

The provisions of 30 CFR 75.1506 (relating to refuge alternatives) are incorporated by reference.

30 CFR § 75.1506

Refuge alternatives.

(a) Each operator shall provide refuge alternatives and components as follows:

(1) Prefabricated self-contained units, including the structural, breathable air, air monitoring, and harmful gas removal components of the unit, shall be approved under 30 CFR part 7; and

(2) The structural components of units consisting of 15 psi stoppings constructed prior to an event shall be approved by the District Manager, and the breathable air, air monitoring, and harmful gas removal components of these units shall be approved under 30 CFR part 7.

(3) Prefabricated refuge alternative structures that states have approved and those that MSHA has accepted in approved Emergency Response Plans (ERPs) that are in service prior to March 2, 2009 are permitted until December 31, 2018, or until replaced, whichever comes first. Breathable air, air-monitoring, and harmful gas removal components of either a prefabricated self-contained unit or a unit consisting of 15 psi stoppings constructed prior to an event in a secure space and an isolated atmosphere that states have approved and those that MSHA has accepted in approved ERPs that are in use prior to March 2, 2009 are permitted until December 31, 2013, or until replaced, whichever comes first. Refuge alternatives consisting of materials pre-positioned for miners to deploy in a secure space with an isolated atmosphere that MSHA has accepted in approved ERPs that are in use prior to March 2, 2009 are permitted until December 31, 2010, or until replaced, whichever comes first.

(b) Except as permitted under paragraph (a)(3) of this section, each operator shall provide refuge alternatives with sufficient capacity to accommodate all persons working

underground.

(1) Refuge alternatives shall provide at least 15 square feet of floor space per person and 30 to 60 cubic feet of volume per person according to the following chart. The airlock can be included in the space and volume if waste is disposed outside the refuge alternative.

Mining height (inches)	Unrestricted volume (cubic feet) per person*
36 or less.....	30
>36-<=42.....	37.5
>42-<=48.....	45
>48-<=54.....	52.5
>54.....	60

* Includes an adjustment of 12 inches for clearances.

(2) Refuge alternatives for working sections shall accommodate the maximum number of persons that can be expected on or near the section at any time.

(3) Each refuge alternative for outby areas shall accommodate persons reasonably expected to use it.

(c) Refuge alternatives shall be provided at the following locations:

(1) Within 1,000 feet from the nearest working face and from locations where mechanized mining equipment is being installed or removed except that for underground anthracite coal mines that have no electrical face equipment, refuge alternatives shall be provided if the nearest working face is greater than 2,000 feet from the surface.

(2) Spaced within one-hour travel distances in outby areas where persons work such that persons in outby areas are never more than a 30- minute travel distance from a refuge alternative or safe exit. However, the operator may request and the District Manager may approve a different location in the ERP. The operator's request shall be based on an assessment of the risk to persons in outby areas, considering the following factors: proximity to seals; proximity to potential fire or ignition sources; conditions in the outby areas; location of stored SCSRs; and proximity to the most direct, safe, and practical route to an intake escapeway.

(d) Roof and rib support for refuge alternative locations shall be specified in the mine's roof control plan.

(e) The operator shall protect the refuge alternative and contents from damage during transportation, installation, and storage.

(f) A refuge alternative shall be removed from service if examination reveals damage that interferes with the functioning of the refuge alternative or any component.

(1) If a refuge alternative is removed from service, the operator shall withdraw all persons from the area serviced by the refuge alternative, except those persons referred to in Sec. 104(c) of the Mine Act.

(2) Refuge alternative components removed from service shall be replaced or be repaired for return to service in accordance with the manufacturer's specifications.

(g) At all times, the site and area around the refuge alternative shall be kept clear of machinery, materials, and obstructions that could interfere with the deployment or use of the refuge alternative.

(h) Each refuge alternative shall be conspicuously identified with a sign or marker as follows:

(1) A sign or marker made of a reflective material with the word "REFUGE" shall be posted conspicuously at each refuge alternative.

(2) Directional signs made of a reflective material shall be posted leading to each refuge alternative location.

(i) During use of the refuge alternative, the atmosphere within the refuge alternative shall be monitored. Changes or adjustments shall be made to reduce the concentration of methane to less than 1 percent; to reduce the concentration of carbon dioxide to 1 percent or less and excursions not exceeding 2.5 percent; and to reduce the concentration of carbon monoxide to 25 ppm or less. Oxygen shall be maintained at 18.5 to 23 percent.

(j) Refuge alternatives shall contain a fire extinguisher that--

(1) Meets the requirements for portable fire extinguishers used in underground coal mines under this part;

(2) Is appropriate for extinguishing fires involving the chemicals used for harmful gas removal; and

(3) Uses a low-toxicity extinguishing agent that does not produce a hazardous by-product when activated.

§ 208.47. Emergency response plan; refuge alternatives.

The provisions of 30 CFR 75.1507 (relating to emergency response plan; refuge alternatives) are incorporated by reference.

30 CFR § 75.1507

Emergency Response Plan; refuge alternatives.

(a) The Emergency Response Plan (ERP) shall include the following for each refuge alternative and component:

(1) The types of refuge alternatives used in the mine, i.e., a prefabricated self-contained unit or a unit consisting of 15 psi stoppings constructed prior to an event in a secure space and an isolated atmosphere.

(2) Procedures or methods for maintaining approved refuge alternatives and components.

(3) The rated capacity of each refuge alternative, the number of persons expected to use each refuge alternative, and the duration of breathable air provided per person by the approved breathable air component of each refuge alternative.

(4) The methods for providing breathable air with sufficient detail of the component's capability to provide breathable air over the duration stated in the approval.

(5) The methods for providing ready backup oxygen controls and regulators.

(6) The methods for providing an airlock and for providing breathable air in the airlock, except where adequate positive pressure is maintained.

(7) The methods for providing sanitation facilities.

(8) The methods for harmful gas removal, if necessary.

(9) The methods for monitoring gas concentrations, including charging and calibration of equipment.

(10) The method for providing lighting sufficient for persons to perform tasks.

(11) Suitable locations for the refuge alternatives and an affirmative statement that the locations are--

(i) Not within direct line of sight of the working face; and
(ii) Where feasible, not placed in areas directly across from, nor closer than 500 feet radially from, belt drives, take-ups, transfer points, air compressors, explosive magazines, seals, entrances to abandoned areas, and fuel, oil, or other flammable or combustible material storage. However, the operator may request and the District Manager may approve an alternative location in the ERP if mining involves two-entry systems or yield pillars in a longwall that would prohibit locating the refuge alternative out of direct line of sight of the working face.

(12) The maximum mine air temperature at each of the locations where refuge alternatives are to be placed.

(b) For a refuge alternative consisting of 15 psi stoppings constructed prior to an event in a secure space and an isolated atmosphere, the ERP shall specify that--

- (1) The breathable air components shall be approved by MSHA; and
- (2) The refuge alternative can withstand exposure to a flash fire of 300 degrees Fahrenheit ([deg]F) for 3 seconds and a pressure wave of 15 pounds per square inch (psi) overpressure for 0.2 seconds.

(c) If the refuge alternative sustains persons for only 48 hours, the ERP shall detail advanced arrangements that have been made to assure that persons who cannot be rescued within 48 hours will receive additional supplies to sustain them until rescue. Advance arrangements shall include the following:

- (1) Pre-surveyed areas for refuge alternatives with closure errors of less than 20,000:1.
- (2) An analysis to demonstrate that the surface terrain, the strata, the capabilities of the drill rig, and all other factors that could affect drilling are such that a hole sufficient to provide required supplies and materials reliably can be promptly drilled within 48 hours of an accident at a mine.
- (3) Permissions to cross properties, build roads, and construct drill sites.
- (4) Arrangement with a drilling contractor or other supplier of drilling services to provide a suitable drilling rig, personnel and support so that a hole can be completed to the refuge alternative within 48 hours.
- (5) Capability to promptly transport a drill rig to a pre-surveyed location such that a drilled hole would be completed and located near a refuge alternative structure within 48 hours of an accident at a mine.
- (6) The specifications of pipes, air lines, and approved fans or approved compressors that will be used.
- (7) A method for assuring that within 48 hours, breathable air shall be provided.
- (8) A method for assuring the immediate availability of a backup source for supplying breathable air and a backup power source for surface installations.

(d) The ERP shall specify that the refuge alternative is stocked with the following:

- (1) A minimum of 2,000 calories of food and 2.25 quarts of potable water per person per day in approved containers sufficient to sustain the maximum number of persons reasonably expected to use the refuge alternative for at least 96 hours, or for 48 hours if advance arrangements are made under paragraph (c) of this section;
- (2) A manual that contains sufficient detail for each refuge alternative or component addressing in-mine transportation, operation, and maintenance of the unit;
- (3) Sufficient quantities of materials and tools to repair components; and
- (4) First aid supplies.

§ 208.48. Training and records for examination, maintenance and repair of refuge alternatives and components.

The provisions of 30 CFR 75.1508 (relating to training and records for examination, maintenance and repair of refuge alternatives and components) are incorporated by reference.

30 CFR § 75.1508

Training and records for examination, maintenance and repair of refuge alternatives and components.

(a) Persons examining, maintaining, or repairing refuge alternatives and components shall be instructed in how to perform this work.

(1) The operator shall assure that all persons assigned to examine, maintain, and repair refuge alternatives and components are trained.

(2) The mine operator shall certify, by signature and date, the training of persons who examine, maintain, and repair refuge alternatives and components.

(b) At the completion of each repair, the person conducting the maintenance or repair shall make a record of all corrective action taken.

(c) Training certifications and repair records shall be kept at the mine for one year.

COMMUNICATIONS

§ 208.51. Communications facilities for refuge alternatives.

The provisions of 30 CFR 75.1600-3 (relating to communications facilities; refuge alternatives) are incorporated by reference.

30 CFR § 75.1600-3

Communications facilities; refuge alternatives.

(a) Refuge alternatives shall be provided with a communications system that consists of--

(1) A two-way communication facility that is a part of the mine communication system, which can be used from inside the refuge alternative; and

(2) An additional communication system and other requirements as defined in the communications portion of the operator's approved Emergency Response Plan.

SELF-CONTAINED SELF-RESCUE DEVICES

§ 208.61. Availability of approved self-contained self-rescue devices; instruction in use and location.

The provisions of 30 CFR 75.1714 (relating to availability of approved self-rescue devices; instruction in use and location) are incorporated by reference.

30 CFR § 75.1714

Availability of approved self-rescue devices; instruction in use and location.

(a) Each operator shall make available to each miner who goes underground, and to visitors authorized to enter the mine by the operator, an approved self-rescue device or devices

which is adequate to protect such person for 1 hour or longer.

(b) Before any person authorized by the operator goes underground, the operator shall instruct and train such person in accordance with provisions set forth in 30 CFR part 48.

§ 208.62. Approved self-contained self-rescue devices.

The provisions of 30 CFR 75.1714-1 (relating to approved self-rescue devices) are incorporated by reference.

30 CFR § 75.1714-1

Approved self-rescue devices.

The requirements of §75.1714 shall be met by making available to each person referred to in that section a self-rescue device or devices, which have been approved by MSHA and NIOSH under 42 CFR part 84, as follows:

(a) A 1-hour SCSR;

(b) A SCSR of not less than 10 minutes and a 1-hour canister; or

(c) Any other self-contained breathing apparatus which provides protection for a period of 1 hour or longer and which is approved for use by MSHA as a self-rescue device when used and maintained as prescribed by MSHA.

[43 FR 54246, Nov. 21, 1978, as amended at 45 FR 80502, Dec. 5, 1980; 60 FR 30398, June 8, 1995]

§ 208.63. Self-contained self-rescue devices; use and location requirements.

The provisions of 30 CFR 75.1714-2 (relating to self-rescue devices; use and location requirements) are incorporated by reference.

30 CFR § 75.1714-2

Self-rescue devices; use and location requirements.

(a) Self-rescue devices shall be used and located as prescribed in paragraphs (b) through (f) of this section.

(b) Except as provided in paragraph (c), (d), (e), or (f) of this section, self-rescue devices shall be worn or carried at all times by each person when underground.

(c) Where the wearing or carrying of the self-rescue device is hazardous to the person, it shall be placed in a readily accessible location no greater than 25 feet from such person.

(d) Where a person works on or around equipment, the self-rescue device may be placed in a readily accessible location on such equipment.

(e) A mine operator may apply to the District Manager under § 75.1502 for permission to place the SCSR more than 25 feet away.

(1) The District Manager shall consider the following factors in deciding whether to permit an operator to place a SCSR more than 25 feet from a miner:

(e)(1)(i) Distance from affected sections to surface,

(e)(1)(ii) Pitch of seam in affected sections,

(e)(1)(iii) Height of coal seam in affected sections,

(e)(1)(iv) Location of escapeways,

- (e)(1)(v) Proposed location of SCSRs,
 - (e)(1)(vi) Type of work performed by affected miners,
 - (e)(1)(vii) Degree of risk to which affected miners are exposed,
 - (e)(1)(viii) Potential for breaking into oxygen deficient atmospheres,
 - (e)(1)(ix) Type of risk to which affected miners are exposed,
 - (e)(1)(x) Accident history of mine, and
 - (e)(1)(xi) Other matters bearing upon the safety of miners.
- (2) Such application shall not be approved by the District Manager unless it provides that, while underground, all miners whose SCSR is more than 25 feet away shall have a FSR approved by MSHA and NIOSH under 42 CFR part 84 sufficient to enable each miner to get to a SCSR.
- (3) An operator may not obtain permission under paragraph (e) of this section to place SCSRs more than 25 feet away from miners on trips into and out of the mine.

(f) If an SCSR is not carried out of the mine at the end of a miner's shift, the place of storage shall be approved by the District Manager. A sign made of reflective material with the word "SCSRs" or "SELF-RESCUERS" shall be conspicuously posted at each SCSR storage location. Direction signs made of a reflective material shall be posted leading to each storage location.

(g) Where devices of not less than 10 minutes and 1 hour are made available in accordance with §75.1714-1(b), such devices shall be used and located as follows:

- (1) Except as provided in paragraphs (c) and (d) of this section, the device of not less than 10 minutes shall be worn or carried at all times by each person when underground, and
- (2) The one-hour canister shall be available at all times to all persons when underground in accordance with a plan submitted by the mine operator and approved by the District Manager. When the one-hour canister is placed in a storage location, a sign made of a reflective material with the word "SCSRs" or "SELF-RESCUERS" shall be conspicuously posted at each storage location. Direction signs made of a reflective material shall be posted leading to each storage location.

§ 208.64. Self-contained self-rescue devices; inspection, testing, maintenance, repair, and recordkeeping.

The provisions of 30 CFR 75.1714-3 (relating to self-contained self-rescue devices; inspection, testing, maintenance, repair, and recordkeeping) are incorporated by reference.

30 CFR § 75.1714-3

Self-rescue devices; inspection, testing, maintenance, repair, and recordkeeping.

(a) Each operator shall provide for proper inspection, testing, maintenance, and repair of self-rescue devices by a person trained to perform such functions.

(b) After each time a self-rescue device is worn or carried by a person, the device shall be inspected for damage and for the integrity of its seal by a person trained to perform this function. Self-rescue devices with broken seals or which are damaged so that the device will not function properly shall be removed from service.

(c) All FSRs approved by MSHA and NIOSH under 42 CFR part 84, except devices using vacuum containers as the only method of sealing, shall be tested at intervals not exceeding

90 days by weighing each device on a scale or balance accurate to within +1 gram. A device that weighs more than 10 grams over its original weight shall be removed from service.

(d) All SCSRs approved by MSHA and NIOSH under 42 CFR part 84 shall be tested in accordance with instructions approved by MSHA and NIOSH. Any device which does not meet the specified test requirements shall be removed from service.

(e) At the completion of each test required by paragraphs (c) and (d) of this section the person making the tests shall certify by signature and date that the tests were done. This person shall make a record of all corrective action taken. Certifications and records shall be kept at the mine and made available on request to an authorized representative of the Secretary.

(f) Self-rescue devices removed from service shall be repaired for return to service only by a person trained to perform such work and only in accordance with the manufacturer's instructions.

[43 FR 54246, Nov. 21, 1978, as amended at 47 FR 14706, Apr. 6, 1982; 56 FR 1478, Jan. 14, 1991; 60 FR 30398, June 8, 1995; 60 FR 33719, June 29, 1995]

§ 208.65. Additional self-contained self-rescue devices.

The provisions of 30 CFR 75.1714-4 (relating to additional self-contained self-rescuers (SCSRs)) are incorporated by reference.

30 CFR § 75.1714-4

Additional Self-Contained Self-Rescuers (SCSRs).

(a) Additional SCSRs in work places. In addition to the requirements in § 75.1714, 75.1714-1, 75.1714-2, and 75.1714-3 of this part, the mine operator shall provide the following:

(1) At least one additional SCSR, which provides protection for a period of one hour or longer, for each person at a fixed underground work location.

(2) Additional SCSRs along the normal travel routes for pumpers, examiners, and other persons who do not have a fixed work location to be stored at a distance an average miner could walk in 30 minutes. The SCSR storage locations shall be determined by using one of the methods found under paragraph (c)(2) of this section.

(b) Additional SCSRs on mantrips. If a mantrip or mobile equipment is used to enter or exit the mine, at least one additional SCSR, which provides protection for a period of one hour or longer, shall be available for each person who uses such transportation from portal to portal.

(c) Additional SCSRs in escapeways. When each person underground cannot safely evacuate the mine within 30 minutes, the mine operator shall provide additional SCSRs stored in each required escapeway.

(1) Each storage location shall contain at least one SCSR, which provides protection for a period of one hour or longer, for every person who will be in by that location.

(2) Storage locations shall be spaced along each escapeway at 30- minute travel distances no greater than the distances determined by--

(i) Calculating the distance an average miner walks in 30 minutes by using the time necessary for each miner in a sample of typical miners to walk a typical length of each escapeway; or

(ii) Using the SCSR storage location spacing specified in the following table, except for escapeways with grades over 5 percent.

Average entry height	Maximum distance between SCSR storage locations (in ft.)
< 40 in. (Crawl).....	2,200
>40-<50 in. (Duck Walk).....	3,300
>50-<65 in. (Walk Head Bent).....	4,400
>65 in. (Walk Erect).....	5,700

(d) **Additional SCSRs in hardened rooms.** As an alternative to providing SCSR storage locations in each escapeway, the mine operator may store SCSRs in a hardened room located between adjacent escapeways.

(1) The hardened room shall be designed and constructed to the same explosion force criteria as seals.

(2) The hardened room shall include a means to provide independent, positive pressure ventilation from the surface during an emergency.

(3) The District Manager shall approve the design and construction of hardened rooms in the ventilation plan.

(4) These SCSR storage locations shall be spaced in accordance with paragraph (c) of this section.

(e) **Storage location accessibility.** All SCSRs required under this section shall be stored according to the manufacturers' instructions, in conspicuous locations readily accessible by each person in the mine.

(f) **Storage location signs.** A sign made of reflective material with the words "SCSRs" or "SELF-RESCUERS" shall be conspicuously posted at each storage location. Direction signs made of a reflective material shall be posted leading to each storage location.

§ 208.66. Map locations.

The provisions of 30 CFR 75.1714-5 (relating to map locations of self-contained self-rescuers (SCSR)) are incorporated by reference.

**30 CFR § 75.1714-5
Map locations of Self-Contained Self-Rescuers.**

The mine operator shall indicate the locations of all stored SCSRs on the mine maps required by §§ 75.1200 and 75.1505 of this part.

§ 208.67. Emergency tethers.

The provisions of 30 CFR 75.1714-6 (relating to emergency tethers) are incorporated by reference.

30 CFR § 75.1714-6

Emergency tethers.

At least one tether, which is a durable rope or equivalent material designed to permit members of a mine crew to link together while evacuating the mine during an emergency, shall be provided and stored with the additional SCSRs on the fixed work location and on the mobile equipment required in § 75.1714-4(a)(1) and (b) of this part.

§ 208.68. Multi-gas detectors.

The provisions of 30 CFR 75.1714-7 (relating to multi-gas detectors) are incorporated by reference.

30 CFR § 75.1714-7

Multi-gas detectors.

(a) Availability. A mine operator shall provide an MSHA-approved, handheld, multi-gas detector that can measure methane, oxygen, and carbon monoxide to each group of underground miners and to each person who works alone, such as pumpers, examiners, and outby miners.

(b) Qualified person. At least one person in each group of underground miners shall be a qualified person under § 75.150 of this part and each person who works alone shall be trained to use the multi-gas detector.

(c) Maintenance and calibration. Multi-gas detectors shall be maintained and calibrated as specified in § 75.320 of this part.

§ 208.69. Reporting SCSR inventory, malfunctions and retention.

The provisions of 30 CFR 75.1714-8 (relating to reporting self-contained self-rescuer inventory, malfunctions, and retention of SCSRs) are incorporated by reference.

30 CFR § 75.1714-8

Reporting SCSR inventory and malfunctions; retention of SCSRs.

(a) SCSR inventory. A mine operator shall submit to MSHA a complete inventory of all SCSRs at each mine. New mines shall submit the inventory within 3 months of beginning operation.

(1) The inventory shall include--

(i) Mine name, MSHA mine ID number, and mine location; and

(ii) For each SCSR unit, the manufacturer, the model type, the date of manufacture, and the serial number.

(2) In the event that a change in the inventory occurs, a mine operator shall report the change to MSHA within the quarter that the change occurs (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec).

(b) Reporting SCSR problems. A mine operator shall report to MSHA any defect, performance problem, or malfunction with the use of an SCSR. The report shall include a detailed description of the problem and, for each SCSR involved, the information required by paragraph (a)(1) of this section.

(c) Retention of problem SCSRs. The mine operator shall preserve and retain each SCSR reported under paragraph (b) of this section for 60 days after reporting the problem to MSHA.