

§ 77.1101 Escape and evacuation; plan.

(a) Before September 30, 1971, each operator of a mine shall establish and keep current a specific escape and evacuation plan to be followed in the event of a fire.

(b) All employees shall be instructed on current escape and evacuation plans, fire alarm signals, and applicable procedures to be followed in case of fire.

(c) Plans for escape and evacuation shall include the designation and proper maintenance of adequate means for exit from all areas where persons are required to work or travel including buildings and equipment and in areas where persons normally congregate during the work shift.

(Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C. 3501 et seq.))

[36 FR 9364, May 22, 1971, as amended at 36 FR 13143, July 15, 1971; 60 FR 33723, June 29, 1995]

§ 77.1102 Warning signs; smoking and open flame.

Signs warning against smoking and open flames shall be posted so they can be readily seen in areas or places where fire or explosion hazards exist.

§ 77.1103 Flammable liquids; storage.

(a) Flammable liquids shall be stored in accordance with standards of the National Fire Protection Association. Small quantities of flammable liquids drawn from storage shall be kept in properly identified safety cans.

(b) Unburied flammable-liquid storage tanks shall be mounted securely on firm foundations. Outlet piping shall be provided with flexible connections or other special fittings to prevent adverse effects from tank settling.

(c) Fuel lines shall be equipped with valves to cut off fuel at the source and shall be located and maintained to minimize fire hazards.

(d) Areas surrounding flammable-liquid storage tanks and electric substations and transformers shall be kept free from grass (dry), weeds, underbrush, and other combustible materials such as trash, rubbish, leaves and paper, for at least 25 feet in all directions.

§ 77.1104 Accumulations of combustible materials.

Combustible materials, grease, lubricants, paints, or flammable liquids shall not be allowed to accumulate where they can create a fire hazard.

§ 77.1105 Internal combustion engines; fueling.

Internal combustion engines, except diesels, shall be shut off and stopped before being fueled.

§ 77.1106 Battery-charging stations; ventilation.

Battery-charging stations shall be located in well-ventilated areas. Battery-charging stations shall be equipped with reverse current protection where such stations are connected directly to direct current power systems.

§ 77.1107 Belt conveyors.

Belt conveyors in locations where fire would create a hazard to personnel shall be provided with switches to stop the drive pulley automatically in the event of excessive slippage.

§ 77.1108 Firefighting equipment; requirements; general.

On and after September 30, 1971, each operator of a coal mine shall provide an adequate supply of firefighting equipment which is adapted to the size and suitable for use under the conditions present on the surface at the mine.

[36 FR 9364, May 22, 1971, as amended at 36 FR 13143, July 15, 1971]

§ 77.1108-1 Type and capacity of firefighting equipment.

Firefighting equipment required under this § 77.1108 shall meet the following minimum requirements:

(a) *Waterlines.* Waterlines shall be capable of delivering 50 gallons of water a minute at a nozzle pressure of 50 pounds per square inch. Where storage tanks are used as a source of water supply, the tanks shall be of 1,000-gallon capacity for each 1,000 tons of coal processed (average) per shift.

(b) *Fire extinguishers.* Fire extinguishers shall be:

(1) Of the appropriate type for the particular fire hazard involved;

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(2) Adequate in number and size for the particular fire hazard involved;

(3) Replaced immediately with fully charged extinguishers after any discharge is made from an extinguisher; and

(4) Approved by the Underwriter's Laboratories, Inc., or the Factory Mutual Research Corp., or other competent testing agency acceptable to the Mine Safety and Health Administration.

(c) *Fire hose.* Fire hose and couplings shall meet the requirements of the Underwriter's Laboratories, Inc., or Factory Mutual Research Corp.'s specifications. Cotton or cotton-polyester jacketed hose shall be treated in accordance with the U.S. Department of Agriculture Forest Service Specification 182 for mildew resistance. The water pressure at the hose nozzle shall not be excessively high so as to present a hazard to the nozzle operator.

[36 FR 9364, May 22, 1971, as amended at 47 FR 28096, June 29, 1982]

§77.1109 Quantity and location of fire-fighting equipment.

Preparation plants, dryer plants, tipples, drawoff tunnels, shops, and other surface installations shall be equipped with the following firefighting equipment.

(a) Each structure presenting a fire hazard shall be provided with portable fire extinguishers commensurate with the potential fire hazard at the structure in accordance with the recommendations of the National Fire Protection Association.

(b) Preparation plants shall be equipped with waterlines, with outlet valves on each floor, and with sufficient fire hose to project a water stream to any point in the plant. However, where freezing conditions exist or water is not available, a 125-pound multipurpose dry powder extinguisher may be substituted for the purposes of this paragraph (b) for each 2,500 square feet of floor space in a wooden or other flammable structure, or for each 5,000 square feet of floor space in a metal, concrete-block, or other type of non-flammable construction.

(c)(1) Mobile equipment, including trucks, front-end loaders, bulldozers, portable welding units, and augers,

shall be equipped with at least one portable fire extinguisher.

(2) Power shovels, draglines, and other large equipment shall be equipped with at least one portable fire extinguisher; however, additional fire extinguishers may be required by an authorized representative of the Secretary.

(3) Auxiliary equipment such as portable drills, sweepers, and scrapers, when operated more than 600 feet from equipment required to have portable fire extinguishers, shall be equipped with at least one fire extinguisher.

(d) Fire extinguishers shall be provided at permanent electrical installations commensurate with the potential fire hazard at such installation in accordance with the recommendations of the National Fire Protection Association.

(e) Two portable fire extinguishers, or the equivalent, shall be provided at each of the following combustible liquid storage installations:

(1) Near each above ground or unburied combustible liquid storage station; and,

(2) Near the transfer pump of each buried combustible liquid storage tank.

(f) Vehicles transporting explosives and blasting agents shall be equipped with fire protection as recommended in Code 495, section 20, National Fire Protection Association Handbook, 12th Edition, 1962.

§77.1110 Examination and maintenance of firefighting equipment.

Firefighting equipment shall be continuously maintained in a usable and operative condition. Fire extinguishers shall be examined at least once every 6 months and the date of such examination shall be recorded on a permanent tag attached to the extinguisher.

(Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C. 3501 et seq.))

[36 FR 9364, May 22, 1971, as amended at 60 FR 33723, June 29, 1995]

§77.1111 Welding, cutting, soldering; use of fire extinguisher.

One portable fire extinguisher shall be provided at each location where welding, cutting, or soldering with arc or flame is performed.