

**§57.22308 Methane monitors (III mines).**

(a) Methane monitors shall be installed on continuous mining machines and longwall mining systems.

(b) The monitors shall—

(1) Give warning at 1.0 percent methane;

(2) Automatically deenergize electrical equipment, except power to monitoring equipment determined by MSHA to be intrinsically safe under 30 CFR part 18, and prevent starting such equipment when methane levels reach 1.5 percent; and

(3) Automatically deenergize the equipment when power to a sensor is interrupted.

(c) Sensing units of monitors shall be positioned at a location which provides for the most effective measurement of methane.

**§57.22309 Methane monitors (V-A mines).**

(a) Methane monitors shall be installed on continuous mining machines used in or beyond the last open cross-cut.

(b) The monitors shall—

(1) Give warning at 1.0 percent methane.

(2) Automatically deenergize electrical equipment, except power to monitoring equipment determined by MSHA to be intrinsically safe under 30 CFR part 18, and prevent starting of such equipment when methane levels reach 1.5 percent; and

(3) Automatically deenergize the equipment when power to a sensor is interrupted.

(c) Sensing units of monitors shall be positioned at a location which provides for the most effective measurement of methane.

**§57.22310 Electrical cables (I-C mines).**

Electrical cables used to power submersible sump pumps shall be accepted or approved by MSHA as flame resistant, or be installed in continuous metal conduit or metal pipe. The ends of such conduit or pipe shall be sealed to prevent entry of explosive gas or dust.

[57 FR 61223, Dec. 23, 1992]

**§57.22311 Electrical cables (II-A mines).**

Only jacketed electrical cables accepted or approved by MSHA as flame resistant shall be used to supply power to distribution boxes and electrical equipment operating in face and bench areas.

[57 FR 61223, Dec. 23, 1992]

**§57.22312 Distribution boxes (II-A and V-A mines).**

Distribution boxes containing short circuit protection for trailing cables of approved equipment shall be approved by MSHA under 30 CFR part 18.

**§57.22313 Explosion-protection systems (I-C mines).**

Pressure-relief systems including vents, or explosion suppression systems, shall be provided on explosive dust handling and processing equipment and on facilities housing such equipment. Vents shall be installed so that forces are directed away from persons should an explosion occur. The ratio of vent size to internal size of the equipment or facility shall not be less than one square foot of vent for each 80 cubic feet of volume or space.

**§57.22314 Flow-control devices (V-A and V-B mines).**

Oil recovery drill holes that penetrate oil bearing formations shall have devices to control the release of liquid hydrocarbons and hazardous gases during the drilling process. Such devices may be recovered for reuse after the formation has been depressurized or the well or borehole has been capped or connected to a collection system.

**§57.22315 Self-contained breathing apparatus (V-A mines).**

Self-contained breathing apparatus of a duration to allow for escape from the mine and sufficient in number to equip all persons underground shall be strategically located throughout the mine. Such apparatus shall be approved by MSHA and NIOSH under 42 CFR part 84 and shall be maintained in accordance with manufacturers' specifications. This standard does not apply to double entry mining systems where

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crosscut intervals do not exceed 250 feet.

[52 FR 24941, July 1, 1987, as amended at 60 FR 30401, June 8, 1995]

**UNDERGROUND RETORTS**

**§ 57.22401 Underground retorts (I-A and I-B mines).**

(a) Retorts shall be provided with—

(1) Two independent power sources for main mine ventilation fans and those fans directly ventilating retort bulkheads, and for retort blowers, and provisions for switching promptly from one power source to the other; and

(2) An alarm system for blower malfunctions and an evacuation plan to assure safety of personnel in the event of a failure.

(b) Prior to the ignition of underground retorts, a written ignition and operation plan shall be submitted to the MSHA District Manager for the area in which the mine is located. The mine operator shall comply with all provisions of the retort plan. The retort plan shall include—

(1) Acceptable levels of combustible gases and oxygen in retort off-gases during start-up and during burning; levels at which corrective action will be initiated; levels at which personnel will be removed from the retort areas, from the mine, and from endangered surface areas; and the conditions for reentering the mine;

(2) Specification and locations of off-gas monitoring procedures and equipment;

(3) Specifications for construction of retort bulkheads and seals, and their locations;

(4) Procedures for ignition of a retort and for reignition following a shutdown; and

(5) Details of area monitoring and alarm systems for hazardous gases and actions to be taken to assure safety of personnel.

[52 FR 24941, July 1, 1987, as amended at 52 FR 41397, Oct. 27, 1987; 60 FR 33723, June 29, 1995]

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**ILLUMINATION**

**§ 57.22501 Personal electric lamps (I-A, I-B, I-C, II-A, II-B, III, IV, V-A, and V-B mines).**

Electric lamps used for personal illumination shall be approved by MSHA under the requirements of 30 CFR parts 19 or 20, as applicable.

**EXPLOSIVES**

**§ 57.22601 Blasting from the surface (I-A mines).**

(a) All development, production, and bench rounds shall be initiated from the surface after all persons are out of the mine. Persons shall not enter the mine until ventilating air has passed over the blast area and through at least one atmospheric monitoring sensor.

(b) After blasting, if the monitoring system indicates that methane in the mine is less than 1.0 percent, persons may enter the mine. All places blasted shall be tested for methane by a competent person before work is started.

(c) If the monitoring system indicates the presence of 1.0 percent or more methane, persons other than examiners shall not enter the mine until the mine has been examined by a competent person and the methane content has been reduced to less than 1.0 percent.

(d) Vehicles used for transportation when examining the mine shall be approved by MSHA under the applicable requirements of 30 CFR parts 18 through 36.

[52 FR 24941, July 1, 1987, as amended at 53 FR 9615, Mar. 24, 1988]

EFFECTIVE DATE NOTE: At 53 FR 9615, Mar. 24, 1988, § 57.22601 was stayed until further notice.

**§ 57.22602 Blasting from the surface (I-C mines).**

(a) All blasting shall be initiated from the surface after all persons are out of the mine and any connecting mines.

(b) Persons shall not enter the mine until a competent person has examined the blast sites and methane concentrations are less than 0.5 percent.