

### § 33.21

this part in such manner to obtain substantially the same information and degree of protection as provided by the tests described in Subpart C of this part.

(b) Adequacy of design and construction of a unit or system will be determined in accordance with its ability (1) to prevent the dissemination of objectionable or harmful concentrations of dust into a mine atmosphere, and (2) to protect against explosion and/or fire hazards of electrical equipment, except as provided in § 33.38(b).

#### § 33.21 Modification of test equipment.

For test purposes the unit or system may be modified, such as by attaching instruments or measuring devices, at MSHA's discretion; but such modification shall not alter its performance.

#### § 33.22 Mode of use.

(a) A unit or system may be designed for use in connection with percussion and/or rotary drilling in any combination of the following drilling positions: (1) Vertically upward, (2) upward at angles to the vertical, (3) horizontally, and (4) downward.

(b) Dust-collector units may be designed for use with specific drilling equipment or at specific drilling speeds.

#### § 33.23 Mechanical positioning of parts.

All parts of a unit that are essential to the dust-collection feature shall be provided with suitable mechanical means for positioning and maintaining such parts properly in relation to the stratum being drilled.

### Subpart C—Test Requirements

#### § 33.30 Test site.

Tests shall be conducted at an appropriate location determined by MSHA.

[39 FR 24005, June 28, 1974]

#### § 33.31 Test space.

(a) Drilling tests shall be conducted in a test space formed by two curtains suspended across a mine opening in such a manner that the volume of the test space shall be approximately 2,000 cubic feet.

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(b) No mechanical ventilation shall be provided in the test space during a drilling test, except such air movement as may be induced by operation of drilling- or dust-collecting equipment.

(c) All parts of a unit or system shall be within the test space during a drilling test.

#### § 33.32 Determination of dust concentration.

(a) Concentrations of airborne dust in the test space shall be determined by sampling with a midjet impinger apparatus, and a light-field microscopic technique shall be employed in determining concentrations of dust in terms of millions of particles (5 microns or less in diameter) per cubic foot of air sampled.

(b) Before a drilling test is started the surfaces of the test space shall be wetted; the test space shall be cleared of air-borne dust insofar as practicable by mechanical ventilation or other means; and an atmospheric sample, designated as a control sample, shall be collected during a 5-minute period to determine residual airborne dust in the test space.

(c) A sample of airborne dust, designated as a test sample, shall be collected in the breathing zone of the drill operators during the drilling of each test hole. Time consumed in changing drill steel shall not be considered as drilling time and sampling shall be discontinued during such periods.

[Sched. 25B, 25 FR 6473, July 9, 1960, as amended at 26 FR 2599, Mar. 28, 1961]

#### § 33.33 Allowable limits of dust concentration.

(a) The concentration of dust determined by the control sample shall be subtracted from the average concentration of dust determined by the test samples collected at each drill operator's position, and the difference shall be designated as the net concentration of airborne dust. Calculations of the average concentration of dust determined from the test samples shall be based upon the results of not less than 80 percent of each set of test samples.

(b) Under each prescribed test condition, the net concentration of airborne dust at each drill operator's position shall not exceed 10 million particles (5