

in the Mine Safety and Health Administration course contained in Bureau of Mines Instruction Guide 2, "MSA W-65 Self-Rescuer" (March 1972) or Bureau of Mines Instruction Guide 3, "Permissible Drager 810 Respirator for Self-Rescue" (March 1972). The instruction shall be given by MSHA personnel or by persons who are certified by the District Manager of the area in which the mine is located: *Provided, however*, That if a Mine Safety and Health Administration instructor or a certified instructor is not immediately available such instruction of new employees in self-rescuers may be conducted by qualified company personnel who are not certified, but who have obtained provisional approval from the District Manager. Any person who has not had self-rescuer instruction within 12 months immediately preceding going underground shall be instructed in the use of self-rescuers before going underground.

(c) All instructional material, handouts, visual aids, and other such teaching accessories used by the operator in the courses prescribed in paragraphs (a) and (b) of this section shall be available for inspection by the Secretary or his authorized representative.

(d) Records of all instruction shall be kept at the mine site or nearest mine office at least 2 years from the date of instruction. Upon completion of such instruction, copies of the record shall be submitted to the District Manager.

(e) The Bureau of Mines instruction guides to which reference is made in items (a) and (b) of this standard are hereby incorporated by reference and made a part hereof. The incorporated instruction guides are available and shall be provided upon request made to any Metal and Nonmetal Mine Safety and Health district office.

[50 FR 4082, Jan. 29, 1985, as amended at 71 FR 16667, Apr. 3, 2006]

Subpart R—Personnel Hoisting

§ 57.19000 Application.

(a) The hoisting standards in this subpart apply to those hoists and appurtenances used for hoisting persons. However, where persons may be endangered by hoists and appurtenances used solely for handling ore, rock, and mate-

rials, the appropriate standards should be applied.

(b) Standards 57.19021 through 57.19028 shall apply to wire ropes in service used to hoist—

(1) Persons in shafts and slopes underground;

(2) Persons with an incline hoist on the surface; or

(3) Loads in shaft or slope development when persons work below suspended loads.

(4) These standards do not apply to wire ropes used for elevators.

(c) Emergency hoisting facilities should conform to the extent possible to safety requirements for other hoists, and should be adequate to remove the persons from the mine with a minimum of delay.

HOISTS

§ 57.19001 Rated capacities.

Hoists shall have rated capacities consistent with the loads handled and the recommended safety factors of the ropes used.

§ 57.19002 Anchoring.

Hoists shall be anchored securely.

§ 57.19003 Driving mechanism connections.

Belt, rope, or chains shall not be used to connect driving mechanisms to man hoists.

§ 57.19004 Brakes.

Any hoist used to hoist persons shall be equipped with a brake or brakes which shall be capable of holding its fully loaded cage, skip, or bucket at any point in the shaft.

§ 57.19005 Locking mechanism for clutch.

The operating mechanism of the clutch of every man-hoist drum shall be provided with a locking mechanism, or interlocked electrically or mechanically with the brake to prevent accidental withdrawal of the clutch.

§ 57.19006 Automatic hoist braking devices.

Automatic hoists shall be provided with devices that automatically apply

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the brakes in the event of power failure.

§ 57.19007 Overtravel and overspeed devices.

All man hoists shall be provided with devices to prevent overtravel. When utilized in shafts exceeding 100 feet in depth, such hoists shall also be provided with overspeed devices.

§ 57.19008 Friction hoist synchronizing mechanisms.

Where creep or slip may alter the effective position of safety devices, friction hoists shall be equipped with synchronizing mechanisms that recalibrate the overtravel devices and position indicators.

§ 57.19009 Position indicator.

An accurate and reliable indicator of the position of the cage, skip, bucket, or cars in the shaft shall be provided.

§ 57.19010 Location of hoist controls.

Hoist controls shall be placed or housed so that the noise from machinery or other sources will not prevent hoistmen from hearing signals.

§ 57.19011 Drum flanges.

Flanges on drums shall extend radially a minimum of 4 inches or three rope diameters beyond the last wrap, whichever is the lesser.

§ 57.19012 Grooved drums.

Where grooved drums are used, the grooves shall be of suitable size and pitch for the ropes used.

§ 57.19013 Diesel- and other fuel-injection-powered hoists.

Where any diesel or similar fuel-injection engine is used to power a hoist, the engine shall be equipped with a damper or other cutoff in its air intake system. The control handle shall be clearly labeled to indicate that its intended function is for emergency stopping only.

§ 57.19014 Friction hoist overtravel protection.

In a friction hoist installation, tapered guides or other approved devices shall be installed above and below the limits of regular travel of the convey-

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ance and arranged to prevent overtravel in the event of failure of other devices.

§ 57.19017 Emergency braking for electric hoists.

Each electric hoist shall be equipped with a manually-operable switch that will initiate emergency braking action to bring the conveyance and the counterbalance safely to rest. This switch shall be located within reach of the hoistman in case the manual controls of the hoist fail.

§ 57.19018 Overtravel by-pass switches.

When an overtravel by-pass switch is installed, the switch shall function so as to allow the conveyance to be moved through the overtravel position when the switch is held in the closed position by the hoistman. The overtravel by-pass switch shall return automatically to the open position when released by the hoistman.

WIRE ROPES

AUTHORITY: Sec. 101, Federal Mine Safety and Health Act of 1977, Pub. L. 91-173 as amended by Pub. L. 95-164, 91 Stat. 1291 (30 U.S.C. 811).

§ 57.19019 Guide ropes.

If guide ropes are used in shafts for personnel hoisting applications other than shaft development, the nominal strength (manufacturer's published catalog strength) of the guide rope at installation shall meet the minimum value calculated as follows: Minimum value=Static Load \times 5.0.

§ 57.19021 Minimum rope strength.

At installation, the nominal strength (manufacturer's published catalog strength) of wire ropes used for hoisting shall meet the minimum rope strength values obtained by the following formulas in which "L" equals the maximum suspended rope length in feet:

(a) *Winding drum ropes* (all constructions, including rotation resistant).

For rope lengths less than 3,000 feet: Minimum Value=Static Load \times (7.0-0.001L)

For rope lengths 3,000 feet or greater: Minimum Value=Static Load \times 4.0.

(b) *Friction drum ropes.*