

## Mine Safety and Health Admin., Labor

## § 57.19021

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-

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.*