

cable, purchased after the effective date of this Act, shall be grounded effectively.

118. **Circuit Breakers and Switches.** (a) Fuses or equivalent protective devices of the correct type and capacity shall be installed on electric equipment to protect against excessive overload. Wires or other conducting materials shall not be used as a substitute for properly designed fuses, and where circuit breakers are used, they shall be maintained in proper operating condition and adjusted so that equipment cannot be overloaded. Switches and circuit breakers shall be installed so that they are readily accessible and can be operated without danger of contact with moving or live parts.

(b) Disconnecting switches shall be installed in all main power circuits at the bottoms of shafts, boreholes, and at other places where main power circuits enter the mine.

Underground electric equipment and circuits shall be provided with switches or other controls of safe design and construction, they shall be installed in a safe manner.

(c) Power circuits shall be protected against short circuit or excessive overload. Wires or other conducting materials shall not be used as a substitute for properly designed fuses; where circuit breakers are used they shall be maintained in proper operating condition,

Dry wooden platforms, rubber mats, or other electrically non-conductive material shall be kept in place at each switchboard, power-control switch, and at stationary machinery where shock hazards exist.

119. **Telephone Systems.** Telephone service or equivalent communication facilities shall be provided at the bottom of each main shaft or slope and in all mines from the surface to the working sections of the mine where the mine workings are 1500 feet or more from the surface.

Telephone lines, other than cables, shall be carried on insulators, installed on the opposite side from power or trolley wires, and where they cross power or trolley wires, they shall be insulated adequately. Telephone circuits on the surface shall be protected by lightning arresters.

119A. **Signal Systems.** Signal wires shall be supported on insulators and insulated properly where they cross power lines.

Bare signal wires that are readily accessible to personal contact shall not carry more than 30 volts. (This does not apply to block-signal system).