



MSHA's Accident Prevention Program Safety Idea

Safety and
Health are
Values!

Trailing Cable Shock Hazards

Category : **Electrical, Longwalls, Mobile Equipment, Section Face Equipment**
Mine Type: **All Underground Mines**



Undamaged trailing cables will isolate miners handling the cable from the hazardous voltages transmitted by the cable. To maintain this protection, the cable must be protected from damage and if it is damaged the damage must be readily detected and repaired. Small nicks and cuts in the cable can easily go undetected with most low- and medium- voltage power systems used today. These small nicks and cuts can expose miners to hazardous voltages.

Two ways to improve the system are:

- Install sensitive ground fault relays on low- and medium-voltage power systems. Typical low- and medium-voltage systems use a 15 ampere grounding resistor with a ground fault relay that trips at 6 amperes. Since the mid-1980's high-voltage longwall systems have used systems with a ½ ampere grounding resistor and a ground fault relay which trips at no more than 0.125 amperes. This same system can be used on low- and medium-voltage systems and can increase personnel protection.
- Install shielded trailing cables on low-voltage equipment. The regulations require shielded cables only for equipment with a nameplate rating greater than 660 volts (1000 volts for equipment using cable reels). Shielded trailing cables have all the phase conductors enclosed in a grounded shield. This will increase personnel protection.

If you have a tip you would like to pass on, you can e-mail it to
MinersTips@msha.gov.
If your Miner's tip is selected, you will receive credit in this space.

Remember "SAFETY and HEALTH are VALUES".

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