

INSTALLATION TECHNIQUES

Several different techniques can be used to install drop cable underground: manually with a shovel, with a trencher, with a vibratory plow, or pulled through conduit. Whichever technique is used, care must be used not to over stress the cable, not to bend the cable too tight, and not to rupture the jacket. If these basic guidelines are followed the underground drop cable will provide a long, reliable life.

This technical note does not address the depth the drop cable should be buried or the hazards involved in digging. Aside from the possibility of damaging sprinkler systems, personal injury to the employee and the public can result if care is not taken to locate power cables, gas lines, etc...

FLOODING COMPOUND

The most important part of an underground drop cable is the flooding compound used to protect the outer conductor from corrosion. If the jacket incurs a minor rupture, the flooding compound, because it has good cold flow properties, flows to seal the rupture. The flooding compound reduces the possibility of corrosion due to a direct chemical reaction in soil with high alkaline content. If there are other dissimilar metals in the ground and the soil is moist, a galvanic cell can be setup between the exposed aluminum outer conductor and the dissimilar metal. Because the flooding compound has good dielectric properties, the possibility of developing a galvanic cell is reduced significantly.

The same flowing property that makes flooded cable necessary for underground makes it unacceptable for aerial or indoor applications. If installed aerially, the flooding compound can drip out onto car roofs, pedestrians, etc... In the house, the flooding compound can leak out onto carpets, drapes, etc...

Drop cable without flooding compound should not be used underground.

CONNECTOR INSTALLATION

Connector installation on flooded drop cable is done the same way as with non-flooded drop cable. The flooding compound should not be removed from the braids. In fact, the flooding compound enhances the electrical integrity of the cable-connector junction. The flooding compound protects the cable-connector junction in the same way it protects the aluminum outer conductor.

JACKETS

Two types of jackets are available for underground applications: PVC (polyvinyl chloride) and PE (polyethylene). PVC is flexible which makes connector installation easy. PE is more abrasion and moisture resistant but not particularly flexible which makes connector installation more difficult. Although PE allows less moisture to permeate through the jacket than PVC, the key to protecting the outer conductor is the flooding compound.

During installation, care must be taken not to rupture the jacket. Because the PE has better abrasion resistance, it can withstand more careless installation procedures than can PVC. However, the same care should be exercised on both.

UNDERGROUND SPLICES

In general, underground splices should be avoided and used only as a temporary repair. To avoid future trouble calls, the best approach is to replace the entire underground drop if for some reason it is cut.