

CABLE SIZE AND ATTENUATION

The type of drop cable that should be used for aerial drop installation is determined from several factors. The first has to do with the upper frequency of the system and the attenuation or loss of the cable. The higher the frequency the higher the loss. The larger the cable the lower the loss. The loss of the cable is taken into account during the design stage of the plant and a particular size cable will be required based on the signal levels and the typical distance from the tap to the TV.

MESSENGERED DROP CABLE

If the pole to the house distance is long, typically a larger cable is used to keep the losses down. Even though the span length increases, the clearance requirements still apply and usually a messenger wire is needed to support the long drop span. Typically, spans over 75 feet utilize messengered drop cable. A separate technical note (2015) covers the maximum span lengths for messengered and non-messengered drop cables in various NESC loading districts. The installer should be also familiar with any other clearance requirements that apply.

1. Messengered cable is supported by the messenger alone. Several different techniques are used to tie off the messenger wire. One technique is to separate the messenger from the cable, wrap the jacketed messenger wire around the hook three times, next wrap the messenger wire around itself three times, finally wrap it around the cable and messenger three to five times to prevent further cable-messenger separation.

Messenger Termination



2. A technique which reduces the possibility of the messenger wire from breaking due to the tight bend around the hook is to feed the jacketed messenger through a bail or wire thimble, then proceed as before to wrap the messenger wire around itself three times and around the cable and messenger three to five times.

Messenger Termination With Bail



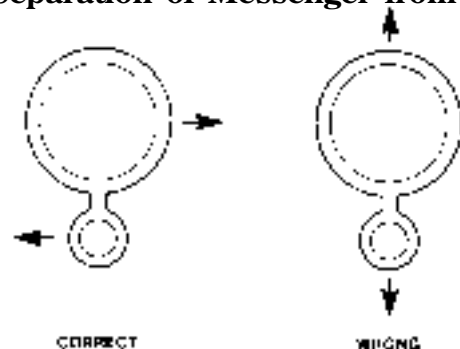
3. The last technique is to use a dead end grip. In this case the jacket must be carefully removed from the messenger wire and a cable tie installed around the cable and messenger to avoid further separation of the cable and messenger.

Messenger Termination With Dead End



Separation of the cable and jacketed messenger is done by splitting the plastic web at the end with either a knife or diagonal cutter. The web cable and messenger should be separated with a slow steady shearing action rather than quick stretching of the web. At warm temperatures either way works but at extreme cold temperatures, the first technique must be used to avoid zippering the jacket over the coaxial cable.

Separation of Messenger from Cable



SHIELDING

Another factor is the type of shielding that the cable needs. Generally a single tape and braid will work for most applications but in some cases trishield and Quadshield must be used to improve shielding.

Cable shielding is only part of the solution to shielding problems. The cable-connector interface is another key factor. Since aluminum is a very active metal that forms a resistive oxide, it is difficult to achieve and maintain a low contact resistance between the cable and connector. It was for this reason that lifeTime™ was developed. lifeTime™ minimizes corrosion and RF leakage degradation at the interface which extends the life of the cable and the connection. lifeTime™ is a flooding compound but it does not leak or drip so it can be used aerially or indoors. (Flooded underground drop cable must never be used indoors because the flooding compound leaks and drips.) All new drop installations should require lifeTime™ or its equivalent to reduce the problems associated with RF leakage.

JACKETS

All aerial drop cables use flexible PVC jackets on which it is easy to install "F" connectors. Most outdoor drop cables are black but colored jackets such as beige can also be installed outdoors. All TFC products have UV resistant PVC black and colored jackets which do not crack or split due to sunlight exposure.

Care should be used when fastening the drop cable to the side of the house. The proper cable clips should be used that do not crush the cable or damage the exterior of the house. PVC jackets also have relatively good cold temperature performance which makes bending and connector installation easy but striking the cable at extremely cold temperatures must be avoided. Although the cable can be bent to relatively tight radii (i.e., 1 inch for 6 size cable), the larger the bend radius the better.