

OVERVIEW

Trunk and feeder cable are available in a variety of construction options, from plain aluminum to jacketed, flooded jacketed and armored flooded jacketed. While the plain aluminum version is the most economical, the jacketed versions may be preferred depending on anticipated field conditions. In addition to the increased economy of the plain version, there are also some product advantages which should be considered, before assuming that jacketed cable is preferable.

This technical note summarizes the features of plain versus jacketed cable in order to help customers be aware of all the pertinent factors.

JACKETED CABLE

Advantages

1. Significant improvement in corrosion resistance for areas near salt water, acid rain, industrial and automotive pollution.
2. Improved handling due to the additional support provided by the jacket to the aluminum.
3. Longer cable life due to the jacket's ability to more fully support and protect the aluminum against long term fatigue resulting from expansion, contraction, wind, vibration, etc.
4. The jacket provides reduced surface friction compared to the bare aluminum surface, reducing drag when pulling around blocks, rollers and through conduits.
5. The jacket provides an opportunity for extensive cable identification. This includes extruded and monofilament multicolor striping, which is far more durable than available paints and stains that can be provided over bare aluminum. The option of sequential footage marking is also provided by jacketed cable.
6. The jacket provides improved abrasion resistance, which protects the aluminum against surface degradation. This is helpful during installation and during service, especially if the cable passes through tree branches or other abrasive environments.
7. During emergency conditions, high voltage power lines can fall onto plain cable, resulting in catastrophic transients which can seriously damage system electronics. Jacketed cable can insulate the aluminum against high voltage during these situations, providing short term protection until the problem is repaired.

PLAIN CABLE

Advantages

1. The reflective surface of plain cable absorbs far less heat from the sun than standard, black jacketed cable. Thus, plain cable will tend to be cooler during the summer and in the warmer parts of the country, resulting in lower attenuations and reduced demand on AGC circuits.
2. The reduced weight and diameter of plain cable reduces the load on the strand wire, especially during high wind and heavy icing situations.
3. While jacketed cable provides some improved mechanical protection for the seamless aluminum sheath, if damage does occur, the jacket may make it difficult to detect visually. During installation, when pulling cable around multiple 90° bends or other difficult turns, slight flattening or kinking of the aluminum may be more difficult to detect with jacketed cable. Thus, plain cable has the advantage of avoiding the problem of concealed damage. (It should be pointed out that jackets bonded to the aluminum sheath also avoid concealed damage.)
4. Termination is quicker with plain cable since the jacket removal step is eliminated.
5. Of course, plain cable is more economical than jacket cable, which is always a key factor.
6. The intimate contact between the aluminum on the plain cable and the lashing wire provides improved grounding for the entire length of the run. This uniform grounding effect can be important under lightning, power company transients or other emergency situations.

BONDED CORE CABLE

Advantages

TFC's bonded core, bonded jacket cable offers greatly improved handling and cold weather performance. With bonded plain cable, one can obtain all of the advantages of plain cable, indicated above, but also several advantages usually found only with jacketed cable. The bonding of the dielectric allows the cable to exhibit handling approaching jacketed cable along with the improved life resulting from fatigue resistance. The bonded core also provides improved insurance against moisture ingress, further improving long term reliability.