

INSTALLATION GUIDE FOR ALCAN CABLE



ACSR TWISTED PAIR CONDUCTORS

Introduction

Alcan Cable's ACSR Twisted Pair (TP) conductors are two bare concentrically stranded conductors twisted about one another with a twist length of nine feet. Alcan Cable's ACSR TP conductors are manufactured in accordance with ASTM B 911. Sub-conductors can be any type, ACSR, AAC, AAAC, ACSR/TW, but most commonly are ACSR.

Alcan Cable's ACSR TP conductors may be installed using methods and equipment typically used to install single round conductors, with a few special procedures used to maintain equal pressure on the sub-conductors. The installation guide, along with those suggested in IEEE Std 524™ 2003, IEEE Guide to the Installation of Overhead Transmission Line Conductors, should provide the information necessary to install ACSR TP conductors.

Reels

Alcan Cable's ACSR TP conductors are shipped on reels designed to hold the length required. The reels should be stored upright on their flanges and not laid flat on their sides. Reels should not be rewound in the field.

Stringing Considerations

Most installation methods currently used in the field to install single round wire bare conductors are acceptable for the installation of ACSR TP conductors. But tension methods are the preferred method. Multi-groove bullwheel tensioners should be used. The use of V-Groove tensioners can cause damage to ACSR TP conductors.

Figure 1 illustrates two types of multi-groove tensioners that can be used to install ACSR TP conductors.



Figure 1

Description of Tensioners

The bullwheel diameter, to the bottom of the groove, should be a minimum of 35x the maximum conductor diameter. The maximum conductor diameter is two times the diameter of one of the sub-conductors. The bullwheel must be wide enough for the sub-conductors to pass through laying side-by-side. The minimum groove radius is 0.55x the maximum diameter of the ACSR TP conductor.

The tensioner should be aligned with the first structure and located back from the first structure approximately three to four times the height of the first sheave. If the sheave is 25 feet, then the tensioner would be back approximately 100 feet. The payoff reel should be positioned in line with the tensioner and back approximately 50 feet.

The sheave diameter to the bottom of the groove shall be at least 14x the maximum diameter of the ACSR TP conductor assembly. The minimum groove width shall be 0.55x the maximum diameter of the ACSR TP conductor.



Twisted Pair conductors stringing sheave

Each end of the ACSR TP conductor has two metal bands attached. One near the end of the conductors, and the other back approximately 10 feet. These bands should be left on the conductor during installation to help prevent movement of one sub-conductor against the other. A properly sized kellum grip is slid over the end of the twisted pair and secured with two metal bands on the open end. The bands should be covered with tape to prevent damage to the sheaves.

Tensioning

Alcan Cable's ACSR TP conductors are brought to tension by attaching a separate grip to each sub-conductor. The grips are attached to an equalizer and snatch block connected to a chain hoist to adjust the sagging tension. Pulling tension is applied to the snatch block. This arrangement insures that equal tension is applied to the sub-conductors.

Some movement of the sub-conductors may happen during stringing as the conductors are rolled over the stringing blocks. If the condition is severe



enough, the conductors may appear to "bag" resulting in one conductor dropping below the other. This can be corrected under tension. A rope may be thrown over the areas that bag and a sharp downward pull should remove the bag. Excessive bagging must be removed by splicing.

Dead Ending

There are a wide variety of various types of dead ending hardware available. Consult your accessory manufacturer for recommendations and installation methods.

Splicing

Alcan Cable's ACSR TP conductors are joined by separately splicing each individual sub-conductor. There should be approximately five feet between the splices. Equal tension should be maintained after splicing. Sometimes an additional twist may be needed before the second splice to remove any looseness between the sub-conductors.

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