AccessWrap™ Product Information

Wrapping technology for medium voltage distribution lines

Medium voltage distribution lines represent a unique set of challenges to designers of overhead line-based optical fibre communications networks. The support structures are usually poles rather than the towers used at higher voltages. This means that there is usually little clearance under the conductors for ADSS installation and there may be insufficient safety margin in the pole design to accommodate the extra loading created by an additional cable.

Often found in rural and urban areas, communications medium installed on these line voltages (including splice boxes and other pole-mounted equipment) must be designed to be as secure as possible against deliberate or accidental damage (for example vandalism, fire, road traffic impact, etc.).

Medium voltage power lines are normally constructed without a ground wire and so all the available conductors are at full system voltage. This means that ordinary attached cables such as lash or clip cable systems cannot be used because of electric field effects.

Key features

The AccessWrap cable is completely dielectric, and due to use of specialist polymeric materials, is designed to withstand the aggressive environment encountered on overhead lines: lightning and fault current effects, electric field effects, icing, sunlight, rain and pollution.

When installed AccessWrap applies a minimal load to the conductor even under ice and wind conditions and so can be installed without requiring any modifications to poles which would be too weak for other cable designs such as ADSS.

AccessWrap is a proven solution and can be installed directly on the phase conductor on line voltages of up to 50 kV, allowing for quick and efficient fibre link deployment on networks with ground clearance issues, lack of ground wire or high cost underground connections.

36
kg / km

6.2mm
OD

48
fibres

6-8 people
to install

2.5
km / day

No modifications
needed

1.4km
between joints

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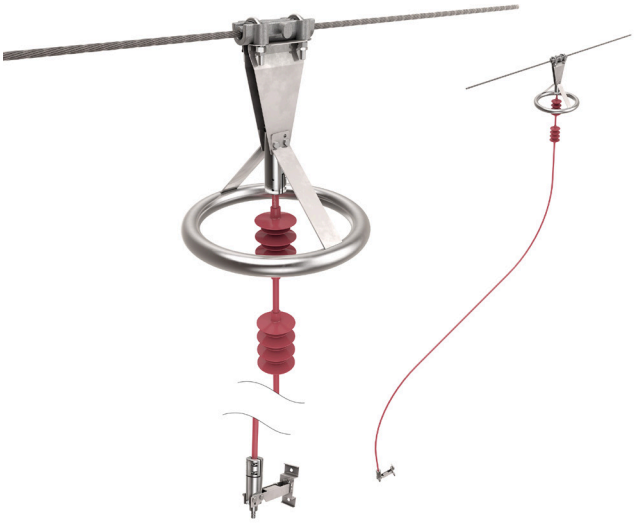


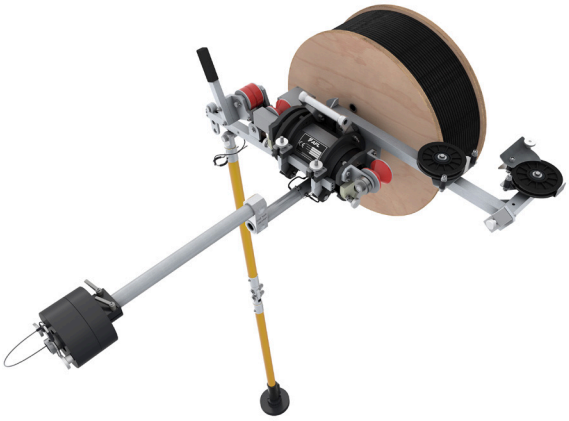
Phase-to-Ground insulators

Specially designed insulators are used to protect the cable in the regions of very high electric field where the cable transfers from phase potential on the conductor to ground potential on the pylon or pole. These insulators are known as Phase-to-Ground transitions and are a key element in the design of AccessWrap.

Conductor mounted splice boxes

AFL provides metal splice boxes that attach directly to the conductor, keeping the splice off the pole and in the region protected from attack by the live overhead conductors.

The splice box contains enough spare cable to allow initial splicing and any subsequent access or re-configuring to be carried out at ground level, before winding the extra cable into the box and fixing the complete unit to the conductor.



Installation equipment

Medium voltage lines are usually erected on wooden, concrete or steel poles and are characterised by reduced conductor-conductor spacing and little reserve strength. AccessWrap installation equipment is designed for lines of weaker strength, shorter spans and smaller conductors. The functionality of the wrapping kit allows for small operating radius and ease of handling and transportation.