Anti-Rotational Device (ARD) Explanation and Common Objections

Adam Harrison, Solutions Manager, Energy, AFL

The use of an Anti-Rotational Device (ARD) (Figure 1), also referred to in the field as a "gator" or "monkey tail", is common for many Optical Ground Wire (OPGW) installations which differs from installation of traditional conductor or shield wire. The recommendation to use an ARD, is to allow the cable to be installed without introducing torsion stress. The ARD creates a moment of inertia that prevents the cable from rotating as it travels over the pulling blocks. It is commonly installed in front of the OPGW being pulled in.

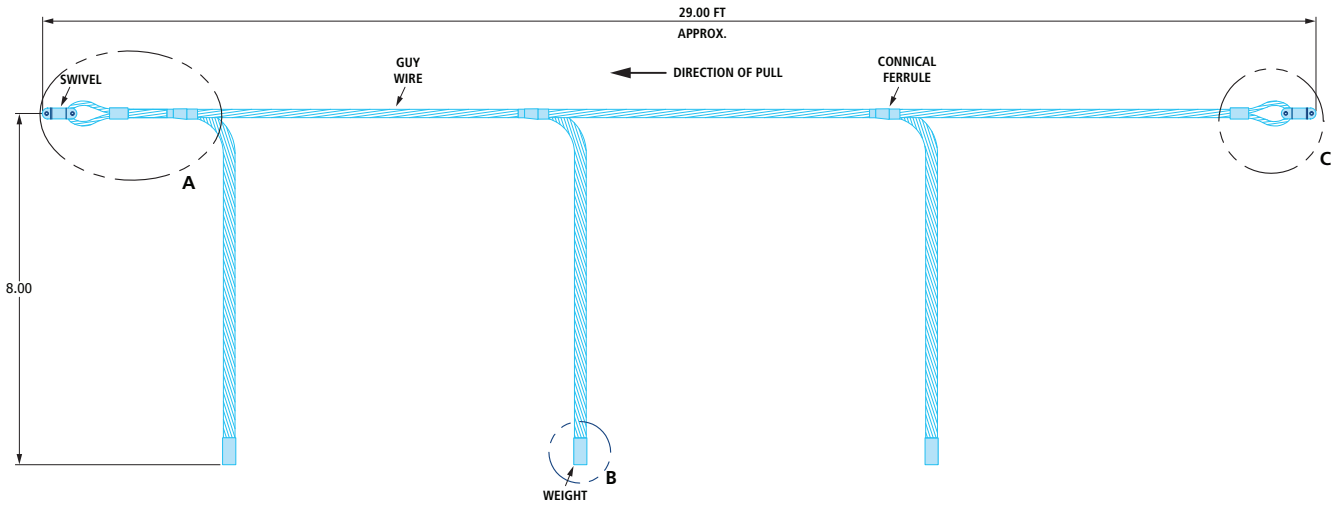
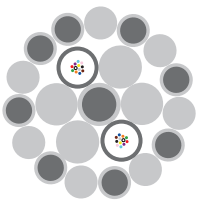
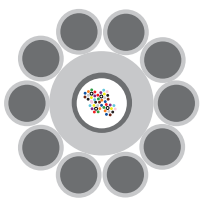


Figure 1: Typical ARD Configuration

The tendency for the rotation to occur is often more prevalent in designs with only a single layer of wires as opposed to dual layer designs that have opposite lay direction (Table 1). Other contribution factors to rotation are the overall cable diameter and the type and size of wires that makeup the cable. Larger diameter cables and ones that include larger aluminum clad steel wires are more susceptible.

Table 1: Susceptibility for rotation with 1 being the lowest and 5 being the highest

ALUMACORE	HEXACORE	CENTRACORE
		
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ARD Objections vs. Facts

Objection 1: Using an ARD takes too long and requires additional labor.

- While using an ARD does require an additional step of installing the ARD prior to pulling the cable and slightly reduced pulling speeds the additional time is minimal. In the larger scheme of a project, it is not preventing additional segments from being pulled in on a daily basis.

Objection 2: ARD tails are too long and clash with conductor phases, insulators, or other components of the grid.

- In many cases, AFL can recommend shorter ARD tails, or possibly not requiring one, depending on the details of the OPGW and installation in questions. Please contact an AFL Application Engineer for this review.

Objection 3: On a previous installation, when using an ARD, it has started to spin (helicoptering) during the pull.

- AFL has found this is typically attributed to installing at too high a tension, pulling through heavy angles where the block is not properly supported, or the ARD is not properly weighted to prevent the torsion.

Objection 4: ARDs are expensive.

- Typically ARDs can be made with supplies from the local hardware store which is more cost effective than purchasing a pre-made one. Also, in some areas rental options may be available.

ARDs for Safe Installations and Cable Protection

While there are a number of objections related to utilizing ARDs, as you can see there are often ways to mitigate or eliminate those issues. AFL also knows that failing to use an ARD when it should be can present safety issues in the form of the outer wires springing open when the cable is cut at the end of the installation. Beyond that, it can physically damage the cable and even worse, permanently damage the fibers inside the cable. AFL strongly believes an ARD will protect the cable from damage and help ensure successful and **safe** installations.