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Erecting routes of Fibre Dropwire (ULW)

About this document ...

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Content approval

This is the Issue 6 of this document.

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Version History

Version No.	Date	Author	Comments
Issue 6	24-Apr-2023	Anthony Stewart	Changes to section 4.1 removed requirement for max of 1 DW per UPB
Issue 5	11-Apr-2023	Anthony Stewart	Changes to section 4.1
Issue 4	10-Jan-2023	Anthony Stewart	Change to Fig. 1
Issue 3	22-Nov-2022	Anthony Stewart	Removed section on the protection of ULW Clamps using PCA.
Issue 2	14-Sep-2022	Anthony Stewart	Title changed to reflect that this document is for all types of OH ULW Cable. Added Figure 4 in section 4.1.
Issue 1	14-Oct-2021	Anthony Stewart	Change from AEC to ISIS doc, change of author.

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1 **Introduction**

This ISIS describes the working practices / engineering standards for Fibre ULW cable on overhead routes, it also details the approved methods for paying off the cable from the reel during erection.

It incorporates a revision to the permitted wire separation distances; in particular, attachment of multiple ULW's to the Pole Ring head.

It is important these practices are deployed by Operational teams, in order to prevent possible early life failure of the Cable.

2 **Scope**

All involved in the Planning and Construction of Overhead Fibre Routes.

3 **Safety**

Refer to the [Health and Safety Handbook Working in the Overhead Network](#). Specific safety issues relating to particular activities are covered in the sections of this document relating to those activities. In particular see Section Overhead wiring and Cabling.

4 **General**

With various programs driving overhead fibre delivery across the UK, we are seeing a significant deployment of Fibre Ultra-Lightweight Cable (Fibre Dropwire).

There are two key points that need to be addressed when installing these cables:

- The attachment / positioning on Poles.
- The paying out of the Cable in preparation for its erection.

4.1 **Positioning of cables on Poles**

The following key points must be followed when attaching the ULW Fibre cable to Poles. In all instances, relevant carriageway clearances and separation distances from power lines must be complied with.

1. Multiple ULW's erected along the same line of route, may be attached either on the sides of the pole using Brackets 22 / UPB (maximum of one dropwire per bracket 22), or onto the Ring head. Where a Ring head is fitted this must be utilised as the first option so as not to consume further pole top space.
2. When attaching on the sides, a 300mm vertical spacing between ULW's and Aerial Cables / D/W's is preferred. However, where existing wires / cables and ground clearance requirements prove so restrictive that a Pole change (larger pole) would be required, the vertical spacing may be reduced to a minimum of 150mm.

Usable space available will vary on each individual pole, but some typical layouts are shown below as a guide to the general requirements.

Notes:

- The fixing of ULW Cables at the same height on either side of the Pole (Tramlining) to maximise available space is permitted.
- Multiple ULW Cables may be installed on the sides of a pole, providing that the relevant Cable spacing and DILOR rules (in EPT/ANS/A011) are complied with.
- These rules apply to all variants of ULW Fibre Cable i.e., 4, 8 12, 24, 36 and 48.
- The spacing requirement applies to through wires running in parallel. It does not apply where (as shown in example 2a in figure 1) a through cable is being attached to the pole and a distribution wire exists which is flying in a different direction.

ULW Cable Layout on Pole Routes

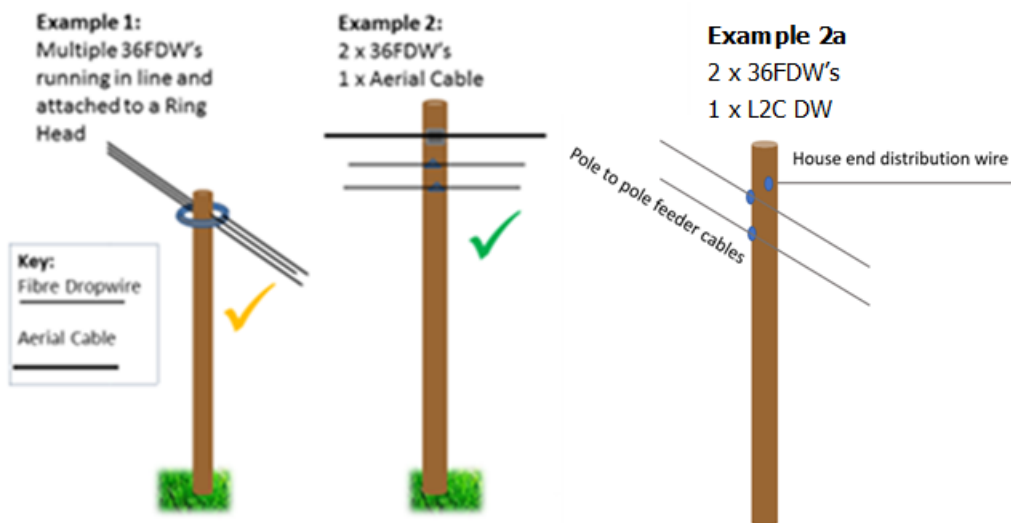


Figure 1 – Pole attachment permutations

ULW Cable Layout on Pole Routes (cont'd)

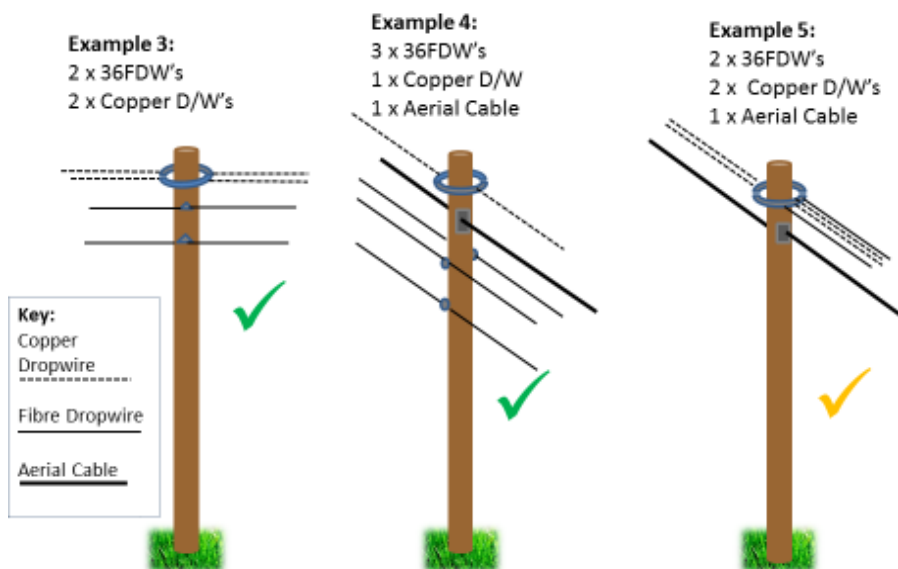


Figure 2 – Other typical Pole attachment permutations

4.2 Paying out of Fibre ULW Cable on long routes

The ULW Fibre Overhead Cable is much more sensitive to bending than copper equivalents. It's also very expensive. As such, in order to avoid possible damage to Fibres and unnecessary length replacement costs, it is very important that when paying out the cable prior to erection, that extreme care is taken to prevent it from self-coiling once off the reel, as this can lead to inadvertent bending or kinking.

Operational teams should either mount the cable reel on a trailer, or insert a tube through the centre of the reel to form a spindle which can be held on each side by two people. Both of these options will allow the cable to be drawn off the reel straight, as work along the route progresses.

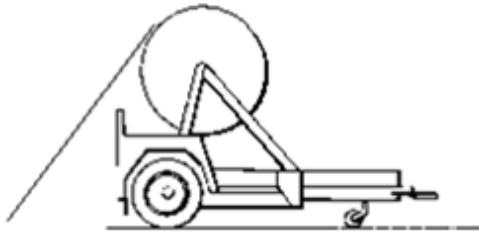


Figure 3 – Cable pay off from trailer

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