openreach

ISIS Directive
For Openreach & Partners

NWK/LNK/C592

Issue 3, 16-Mar-2023
Use until 16-Mar-2025

Published by Openreach Chief Engineer

Privacy- None

FTTP L2C - Common Issues & Solutions - Policy

Newtrork Policy

UNCONTROLLED IF PRINTED

About this document ...

Author

The author of this document may be contacted at:

Ada Hilton
Network Policy Consultant
Openreach (BOI)
Post Point HWC210PO Box 67501
BT Centre
London
EC1P 1PG

Telephone: 01778395310
Fax:
Email: ada.hilton@openreach.co.uk

Content approval

This is the Issue 3 of this document.
The information contained in this document was approved on 16-Mar-2023 by Stan Edwards, Senior Manager, Network Policy, Standards and Accreditation

Version History

Version No.	Date	Author	Comments
Issue 3	16-Mar-2023	Ada Hilton	Republication after auto archive, changes to title and sub-title.
Issue 2	09-Mar-2021	Ada Hilton	Section 6 – Data Extensions added.
Issue 1	22-Feb-2021	Ada Hilton	New document

Table of Content

1 *Introduction*

This document highlights common Issues encountered during in the FTTP Lead to cash (L2C) activity and provides guidance on potential solutions.

The issues and solutions detailed are not exhaustive and this document will be regularly updated with new information.

For more information on any of the issues or solutions please contact the contributor named or the author of this document.

2 *Contents and contributors*

This document will host contributions from all areas of openreach and encourages team members to submit their **solution ideas** for publication.

We want your solutions for issues you have encountered as you provide your L2C installation tasks. This includes internal and external solutions.

Submissions are welcomed and should be made to the author of this document.

3 *Underground*

We know civil engineering is expensive and whenever we decide to proceed with a civil engineering solution this inevitably causes delays in delivering service and disruption to the public.

Try and avoid civils where possible by utilising all of the potential solutions available.

Caution: If we have to dig then do it in the most cost effective manner, then we can reinvest the money saved in serving our customers.

3.1 Blockages

For underground duct blockages/congestion the normal process is to raise an A55, this is time-consuming and delays service for the customer – before raising an A55 make sure you have considered the solutions shown in the following sections.

3.1.1 Slippery Fish Cable (COF250)

Slippery Fish is a rigid 12 fibre cable suitable for rodding installation when a duct is found to be congested.

- Slippery Fish, known as COF250, item code 087333 (300m)
- 12 fibre cable with nominal dimensions of 8mm x 4mm
- 2 glass re-enforced plastic (GRP) stiffening rods enable it to be pushed through ducts, in some cases it successfully passes blockages

Additional Information:-

ISIS AEI/AEC/B280 – COF250 Self Rodding Fibre Cable

ISIS EPT/COF/D950 - Installation of COF250 into a range joint closures / nodes.

3.1.2 Flexible Duct Drill - (aka Micro drill)

The flexible duct drill is designed to remove debris from a Bend Duct 56 at the customer Premises and Poles where soil, mud, sealants or small stones have caused a blockage.

- Flexible Duct Drill 1A (item code 088049)
- The Flexible drill is a metre long and has a countersunk 12mm drill bit at the end.
- Drill head can loosen or create a pathway through debris, without damaging cable or duct.
- Tests have shown the drill to have a 50% success rate
- Additional rod lengths can be attached and it can be attached to a small Cobra hand rod and pushed through to the nearest jointing chamber
- A basic drilling kit could cost around £90 for a 1m drill.

Diagrams – The Flexible duct drill and drill bit

Caution: Before using this tool you must consult the user guide that can be found in EPT/UGP/E043 - Cabling in Duct Manual – Appendix F

3.1.3 Duct Cameras

Duct cameras can be used to accurately locate and examine blockages and collect data on duct damage.

- The camera can accurately locate & examine blockages to minimise/avoid civils
- They have also been purchased and used to collect data on some incidents of duct damage.
- Can be used to reach a distance of 30m from the cable chamber
- During real-time rodding operations the camera can sometimes be used help provide service through heavily congested or partially blocked ducts

  Further guidance can be found in

  CAM/001 (this can be found in the bookstore)

  Civils Techniques - 'to dig or not to dig'

3.1.4 Specialist Rodding Tools/Attachments

There are a choice of rods and also a variety of fixtures and fittings that can help with the most complex blockages.

A few of these are shown below.

- Standard 2m and 3m sectional hand rods available in 14mm and 25mm diameters (Rods Duct 1, 2 and 5)
- Continuous hands rods (Cobras) 14mm, 9mm and 6.7mm (more flex, less distance)

- Cobras Rods - Rod Adapter 9mm and 14mm (086093) allows standard Rods Duct fittings to be used with the Cobras

- An adapter with female Rod Duct 1 thread at one end and male Rod Duct 3 thread at the other. For connecting Rod Duct 1 or 2 to Rod Duct 5.

- Attachment Rod 1, 2 or 3A provides distance with minimal profile and some flexibility customer premises or pole duct bend. The 3A is also good for duct tees.

- Accurate location of blockage minimises digs use Loc. 9A Rodding Oscillator

- Bent rods ‘surf cables’ and can help get past some obstructions

This list is not exhaustive

Further guidance, tools and attachments can be found in

CBS/001 Continuous Hand Rod - User Guide

EPT/UGP/E043 - Cabling in Duct Manual

4 Overhead

Content to be added

5 MDU

Content to be added

6 Data Extensions

This section provides guidance on alternative solution for data extensions within the home. Data extensions are commonly required to provide service to the customers set top box.

6.1 Data Extension – second module

Each data extension socket can be fitted with two data extension modules. This removes the need for a second mounted socket and will reduce installation time. To achieve this, you'll need two data extension sockets and combine the modules into one socket.

Above: How to fit a second module into the Data extension socket.

Above: Rear view of the two data modules.

6.2 Tool-less Data extension socket

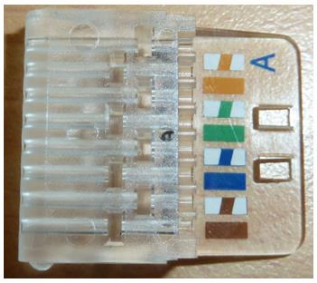
A tool-less data extension socket - Item Code 076848 - is available in packs of 10 with full instructions in the box. It is easier to install than a data extension socket with the advantage of being smaller and neater within a home.

> **Warning:** The inserted CAT5e cable should be secured hand tight with a cable tie. **Do not use a cable tie tensioner as it may damage the conductors.**

1 

2 

3 

4 

1) Completed Tool-less data extension socket with patch cord on left, CAT5e on right.

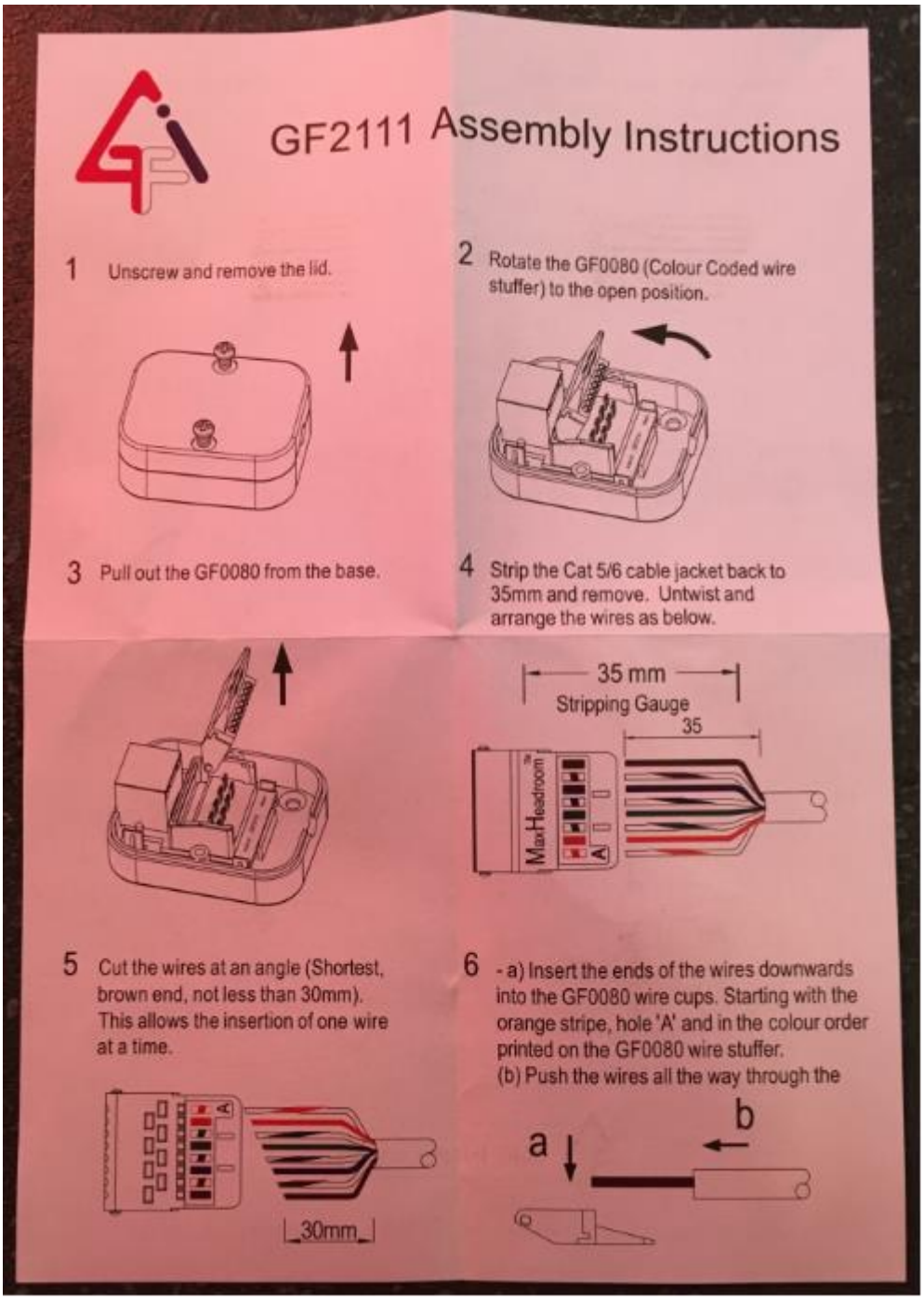
2) Inside the socket, note RJ45 socket, cable terminations and cable tie for securing the CAT5e cable.

3) Wiring load bar or stuffer. Note the cable colour coding.

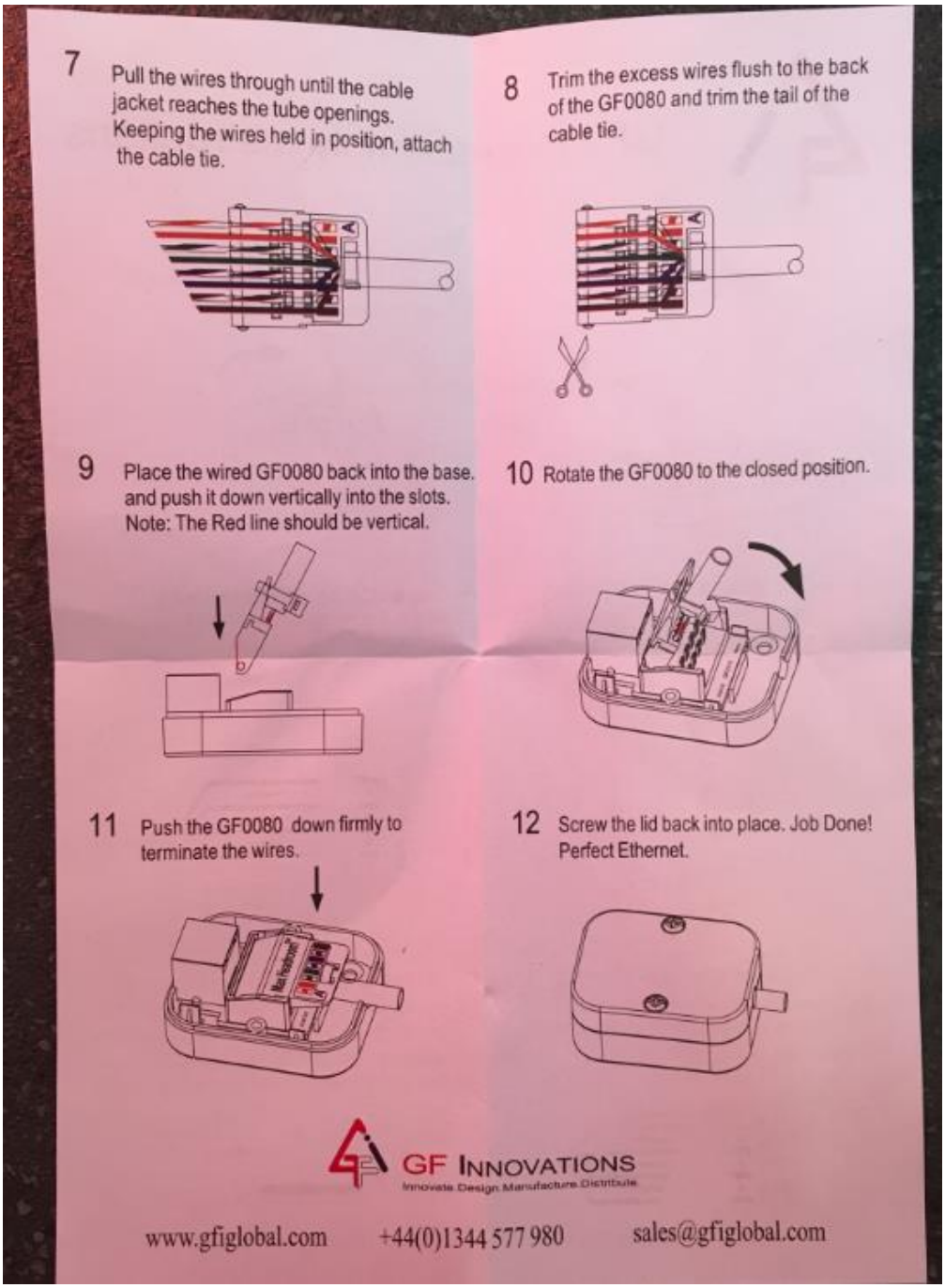
4) Reverse of load bar or stuffer. Wires are inserted and the load bar is placed into the socket, making the connection.

6.2.1 Tool-less Data Extension Kit (TDEK) – instructions

The tool-less data extension socket - Item Code 076848 comes complete with a set of instructions which are shown below.



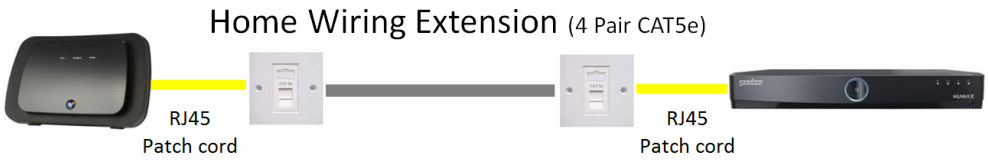
TDEK Instructions – steps 1-6



TDEK Instructions – steps 7-12

6.3 Home Wiring Extensions (HWE)

Home Wiring Extensions are used to connect the CP's router to a device using CAT5e 4 pair cable. The example below shows a Set Top Box connected back to the router.



6.4 Further Guidance

For further information and guidance on internal wiring please refer to:

EPT/CJT/D022 - Internal Wiring

EPT/ANS/A016 - Specification for Customer Premises (Copper)

7 *Miscellaneous*

Content to be added

END OF DOCUMENT