# Ultrafast Fibre Developer Trade Installation Guidelines V1.0

## Contents

# 1. General

## 1.1. Purpose

This document is to provide a quick installation guideline on any premises to be designed /constructed and to maintain the integrity of the UFF Network and safeguard from the introduction of unapproved materials.

## 1.2. Glossary

**LSZH** – Low Smoke Zero Halogen

**HDPE**- High Density Polyethene

**ETP**- External Termination Point

**ONT**- Optical Network Terminal

**OPSO Regulator**- Over Pressure Shut-Off Regulator

**SDU**- Single Dwelling Unit

**PVC Pipe**- Polyvinyl Chloride Pipe

MDU- Multi Dwelling Unit

## 1.3. Products

Developers and Electricians can request a free issue of material via email to developments@ultrafast.co.nz.The use of any consigned material from a technician employed on the UFF network must only be sourced directly from UFF.

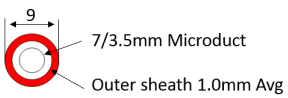
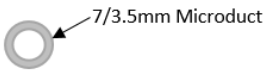
| Photo | Product | BOM Code |
|---|---|---|
|  | • Lateral Microduct Red HDPE outer jacket for **external use only**<br>• Run from property boundary to the ETP | 52400079 |
|  | • LSZH microduct for only **internal use only**<br>• Run from ETP to the star wiring box | 52400077 |

**Table 1- Approved Product List**

## 2. Installation Guide

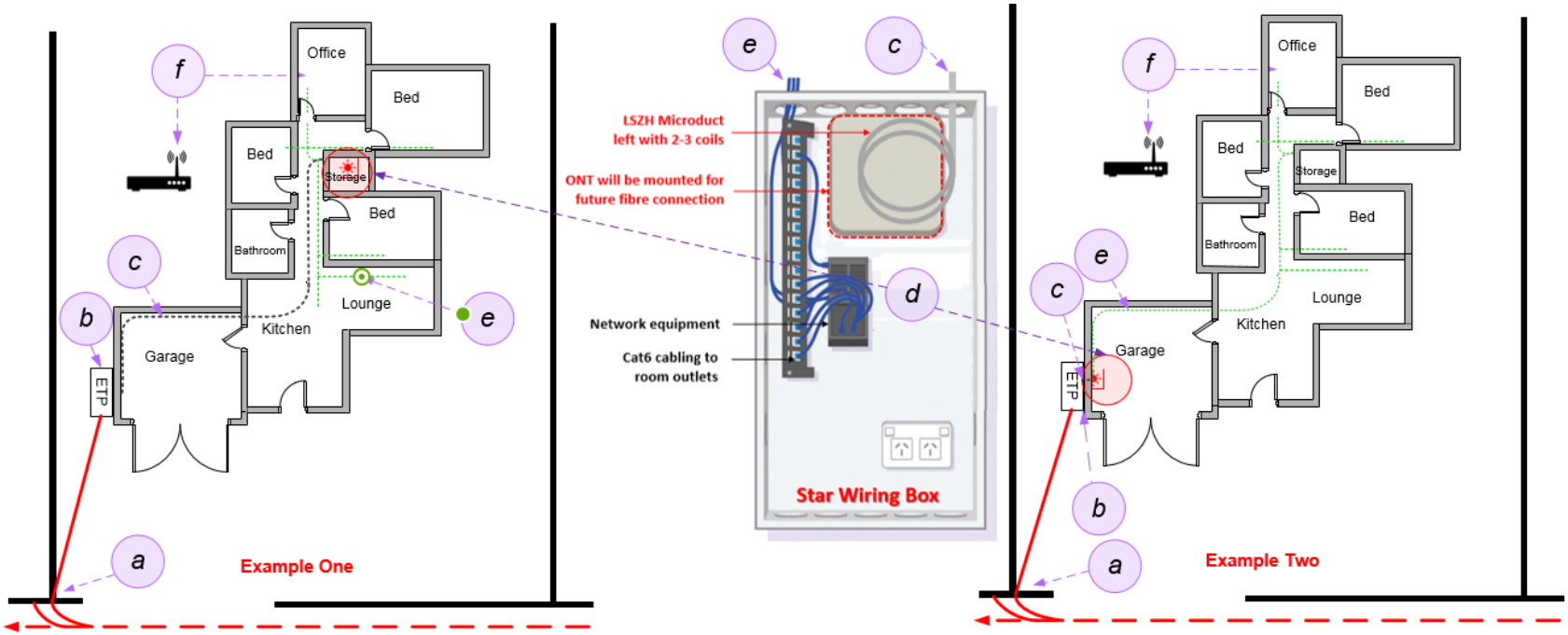



**Figure 1-Generic Cabling System**

***a*= Lateral Microduct at boundary drop off**. Typically two microducts are placed at the boundary of two adjacent properties boundaries. You will have to contact UFF so that the boundary drop off can be identified and located before the lateral microduct is laid into the ground. Do not connect to the communal network.

***b* = ETP.**

***C* = Low Smoke Zero Halogen (LSZH) 7/3.5mm microduct** laid in from the Star Wiring Box (or the central distribution point) to the External Termination Point (ETP).

***d*= Central Distribution Point** dispersed in a "star topology". On example two the Distribution point is placed back to back e.g. in a garage or to another none intrusive location. This can be either a cabinet or a cupboard with shelving.

***e*=Distribution structured cabling minimum specification of Cat 6.** Cat 6 (10Gbits/sec) is a good way of preparing the property for future technology.

***f*= Residential Gateway(RGW)**. remotely placed wireless router**,** Place the router in a preferred location. Back feed from the LAN port on a separate cable back to the home distributor or star wiring box to provide connectivity to the ONT.

## a. Lateral Microduct at Boundary Drop OFF

1) Place the lateral microduct at the boundary next to the already installed communal network microduct. You may have to contact UFF so that the boundary drop off position can be identified and located before the lateral duct is laid into the ground.
2) Place a coil of around 3 metres microduct by the boundary and cap the microduct with an End Stop Connector.
3) Do not attempt to connect the microduct to the UFF communal infrastructure.
4) The red lateral microduct is to be installed directly to where the LSZH duct is protruding. The amount of bends in the route must be kept to an absolute minimum.
5) The Lateral microduct should be one continuous duct from the boundary drop off to the ETP location and is to be sealed at both ends.

**Note: The minimum cover for Lead in Ducts (LID) is 400mm from finished ground level.**

**Note: The minimum bend radius of Lateral Microduct 7/3.5mm is 110mm.**

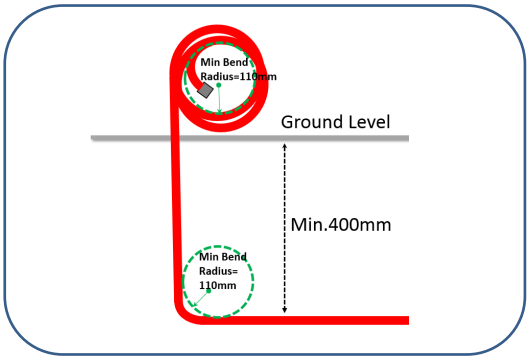



**Figure 2- Lateral Microduct Location**

## b. ETP

### ETP Location Rules

The ETP (LSZH Protrusion) must not be placed in such a location where it can be prone to damage. The ETP/LSZH shall not be placed in a location close to a hose tap where it is subject to excessive moisture, high pedestrian traffic or vulnerable damage.

**Note: Only LSZH Microduct is to be installed for indoor.**

**Note: Never install the LSZH Microduct close to a hose tap.**

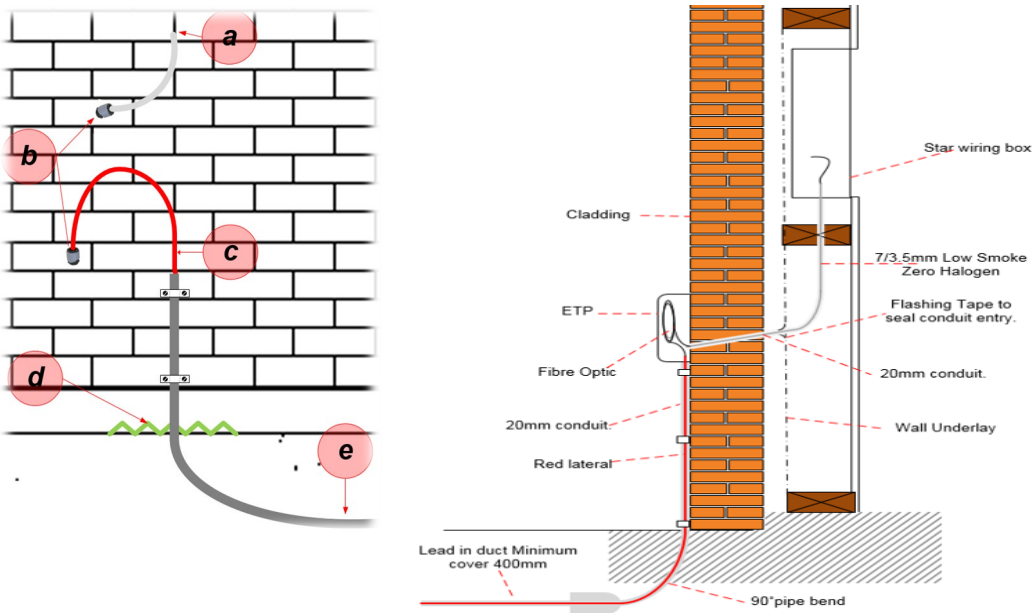



**Figure 3- ETP Location Rule**

**a**= LSZH 7/3.5mm microduct. Height of LSZH is between 300mm – 1500mm from finished ground level. At least 100mm of duct protruding. Recommend 20mm pipe for re-entry. The Low Smoke is to be positioned in the top right of the ETP.

**b**= End stop connector (direct install). Used to keep the internal of the duct clean and dry.

**c**=Microduct lateral. Provide enough slack to allow the ETP to be placed at 300mm to 1500mm. The end of the lateral must be within 50mm of the exit point of the LSZH.

**d**=Finished ground level.

**e**= 20mm duct from the boundary, depth is set at 400mm.

## Clearances from Gas meters and Cylinders

When placing the Low Smoke Zero Halogen (LSZH) internal duct externally (ETP Position). The following must be considered. Exclusion zone(s) are defined in Fig 1 and Fig 2 and are applicable to all UFF where a gas connection is present or proposed.

**Gas Vented Regulator:**

The minimum clearance required for the ETP or other UFF owned terminating devices is 1600mm vertically and / or 750mm - 450mm horizontally from the location of an existing or proposed gas meter. Note the vented regulator is colour coded light brown. Installation personnel shall not position UFF equipment in this exclusion zone.

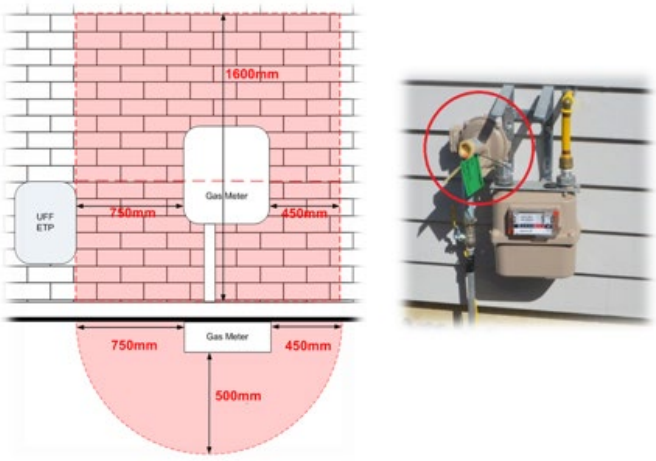



**Figure 4- Exclusion Zone Gas Vented Regulator**

**OPSO Regulator:**

The minimum clearance required for the ETP or any other UFF owned terminating devices is 800mm vertically and / or 200mm horizontally from the location of an existing or proposed gas meter. The OSPO regulator is colour coded light grey. Installation personnel shall not position UFF equipment in this exclusion zone. Before installing an ETP at the limit of the 200mm exclusion zone, absolute identity of the type of regulator must be established. If the installer is unsure at any point during the installation, contact an UFF Field Deployment Specialist of a Broadspectrum Team leader or higher for confirmation.

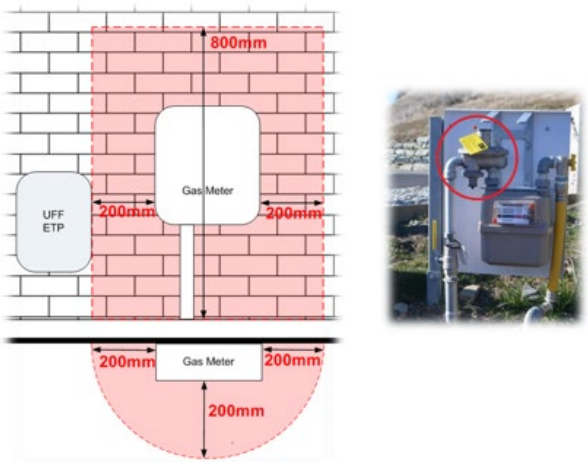



**Figure 5- Exclusion Zone OPSO Regulator**

**Cylinder Regulator:**

The minimum clearance required for the ETP or other UFF owned terminating devices is as described in Fig 2 for either an Exchange or In-situ type gas cylinder. Installation personnel shall not position UFF equipment in this exclusion zone. All dimensions are measured from the top of any cylinder valve.

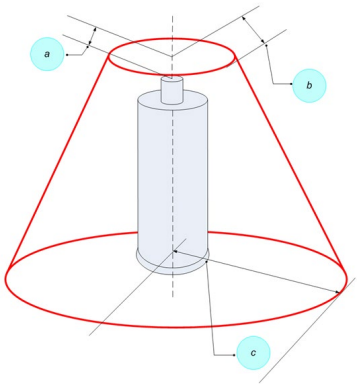



**Figure 6- Exclusion Zone Cylinder Regulator**

a = within space 500mm above the top of the cylinder valve
b= [1]500mm laterally from any cylinder valve. [2]1500mm laterally from any cylinder valve.
c= [1]1500mm laterally at the base of the cylinder. [2]3500mm laterally at the base of the cylinder.

[1] = Exchange cylinder
[2] = In Situ fill cylinder

## c. LSZH Microduct internal routes

LSZH microduct, internal routes should be installed within the following guidelines.

1) To protect the duct, the safest route must be chosen where the possibility of accidental interference is limited. If installed into the attic space, the cable must not run along the floor (where the cable is prone to damage or being stood on).
2) Avoid areas used for storage, chimneys, flues, heating ducts, water tanks and plumbing.
3) The LSZH microduct should follow a common route with Cat6 horizontal cable.
4) For sub floor installations, the duct should run clear of any potential wet surfaces, such as the ground and along areas at the bottom of external walls, bathroom, laundrette or any place where any unintentional water leakage or dampness may occur.
5) The LSZH microduct / cable must be installed in the least intrusive location possible. Where possible surface cables should be installed in a location that is likely to offer some protection.
6) Observe the correct bend radius (x20 the duct diameter)

## d. Star Wiring Box or Home Distributor

### Location Rules

The Star Wiring Box or Home Distributor is a common connection point where incoming feed and multiple distribution meet. This allows for a cross connect facility for voice, video and data services.

1) The Home Distributor can be housed inside the Garage (Example One) for ease of installation, however a location where the cables can be centrally distributed (Example Two) from should be considered. This will aid in a lower consumption of horizontal cable and will aid in Wi-Fi signal distribution if the router is to be housed into the star box.

2) Ensure that the location is supplied with at least a double gang 230v AC power source for connection to supply the ONT and enough power sources to power a router, alarm and hub if desired.

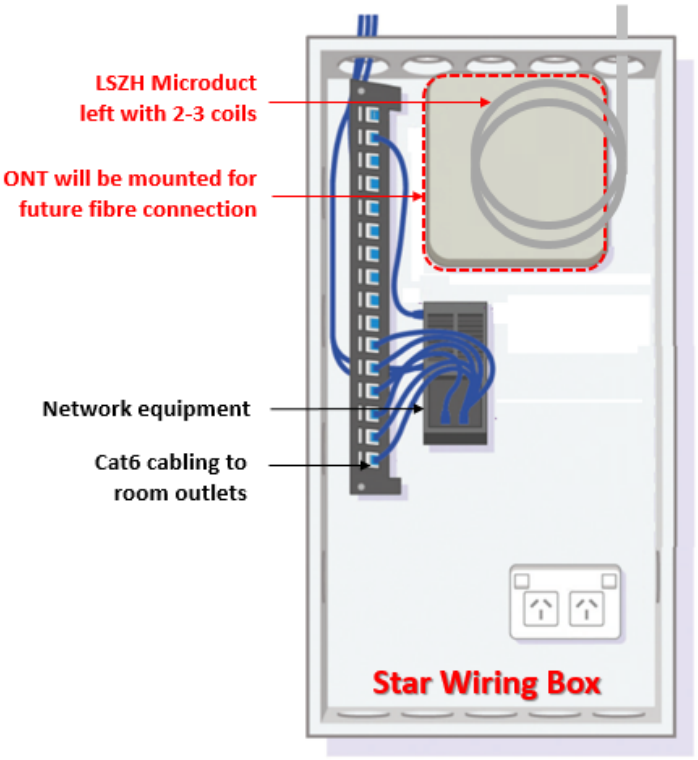



**Figure 7- Star Wiring Box**

3) Ensure that the white 7/3.5mm duct is installed between the home distributor, star wiring box or ONT location to the ETP location in line with “point F”.

4) The Home Distributor is not to be located outside and is to be internal only.