



Quick Guide Duct Laying

August 2024

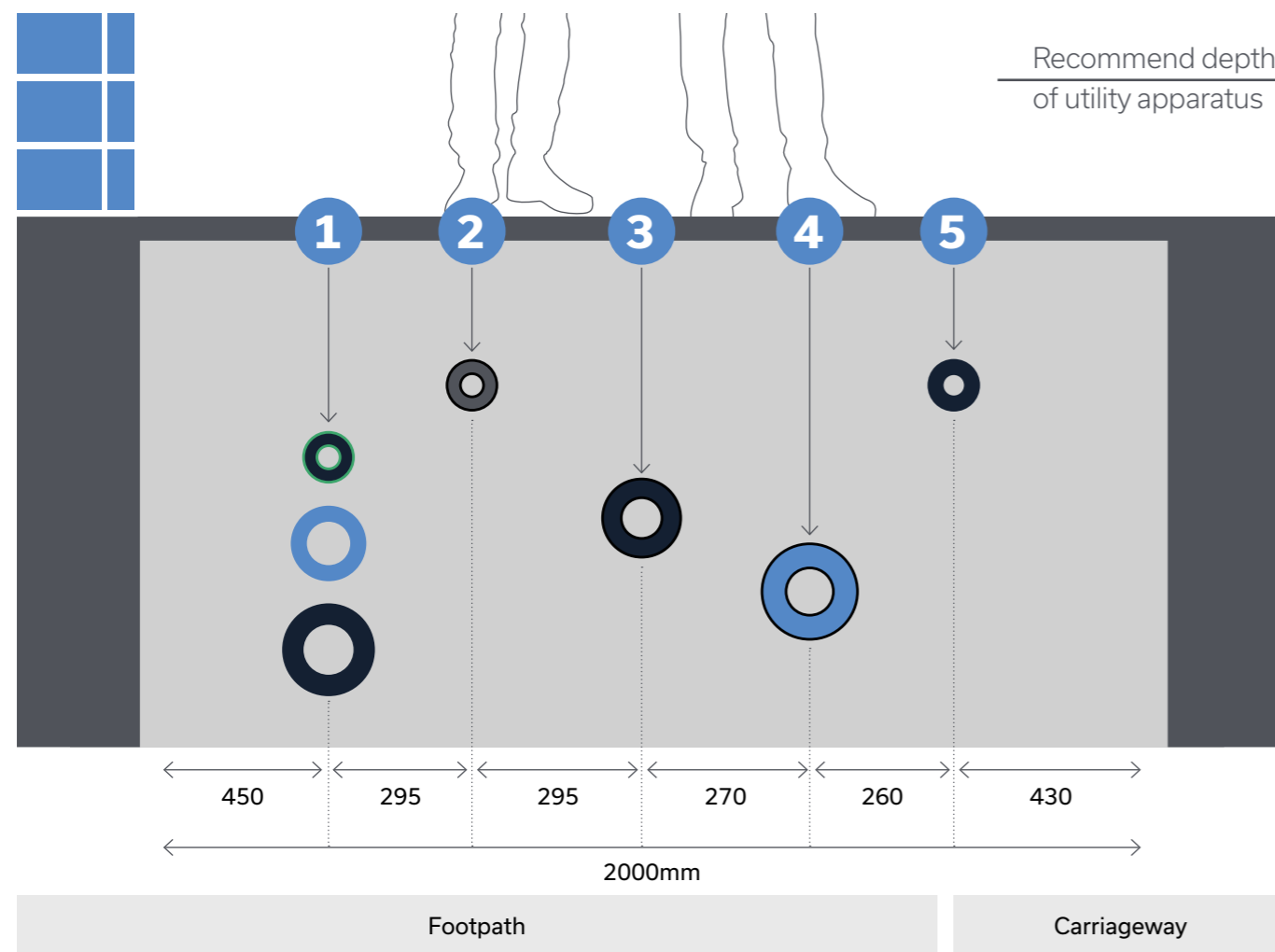
openreach



General duct guidelines

Arrangement of mains services

The latest information on the positioning of utilities, mains and plant can be obtained from Streetworks UK: streetworks.org.uk



Key

1. Electricity / HV 450 to 1200mm/LV 450mm
2. Cable TV 250 to 350mm
3. Gas 600mm
4. Water 750mm
5. Telecommunications 250mm

Avoiding damage to the Openreach underground network

Openreach has an extensive underground network that can be located inside/on the perimeter of a site. This network is vulnerable to excavation related damage unless appropriate precautions are taken.

The precautions for avoiding damage to an underground utility plant are contained within the Health & Safety Guide no. 47: "Avoiding danger from underground services".

Available here: hse.gov.uk/pubns/books/hsg47.htm

This document stresses the need for the availability of utility plans on site and the use of safe digging practices.

Damage to the Openreach network by a third party can be expensive for that party to repair.

Click Before You Dig

To obtain a more precise location of Openreach infrastructure (either within your site or the adjoining land) and avoid costly damage, email:

cbyd@openreach.co.uk

Utilisation of the Openreach Click Before You Dig free service has a proven record of minimising the potential for damage and cost.

If you need to move or consult on existing Openreach equipment, contact us on

0800 783 2023

or visit our website:

openreach.com/building-developers-and-projects/altering-our-network

General duct guidelines

Ducting to the building

Duct to the premises/building must be laid at a minimum depth of 250mm and be as straight as possible.

Ducting general principles

- All runs must be laid as straight as possible. If needed, you can carefully bend the ducts or use pre-formed bends supplied by Openreach.
- There must be no more than one pre-formed 90° bend in any single run of duct.
- Pre-formed 90° bends must not be installed in any duct linking two joint boxes.
- Footpath or service strip ducting must be laid at a minimum of 250mm depth of cover.
- All space alongside the duct must be backfilled with granular fill to a minimum thickness of 75mm.
- For all single dwelling units (SDU) duct must be terminated on the external surface of the property.
- The duct termination point must be in a location that will allow unrestricted access for any future maintenance activity.
- All ducts must be provided with a draw rope after installation, unless it's agreed locally to substitute the draw rope with a cable.
- Please notify your FBC when the duct has been laid and is ready for inspection prior to call off.
- Any internal duct feed must be sealed to prevent gas or water ingress during construction. When cable is being installed duct will be permanently sealed by Openreach engineer. FBC can be consulted for further information.

Detectable Buried Service Warning Tape

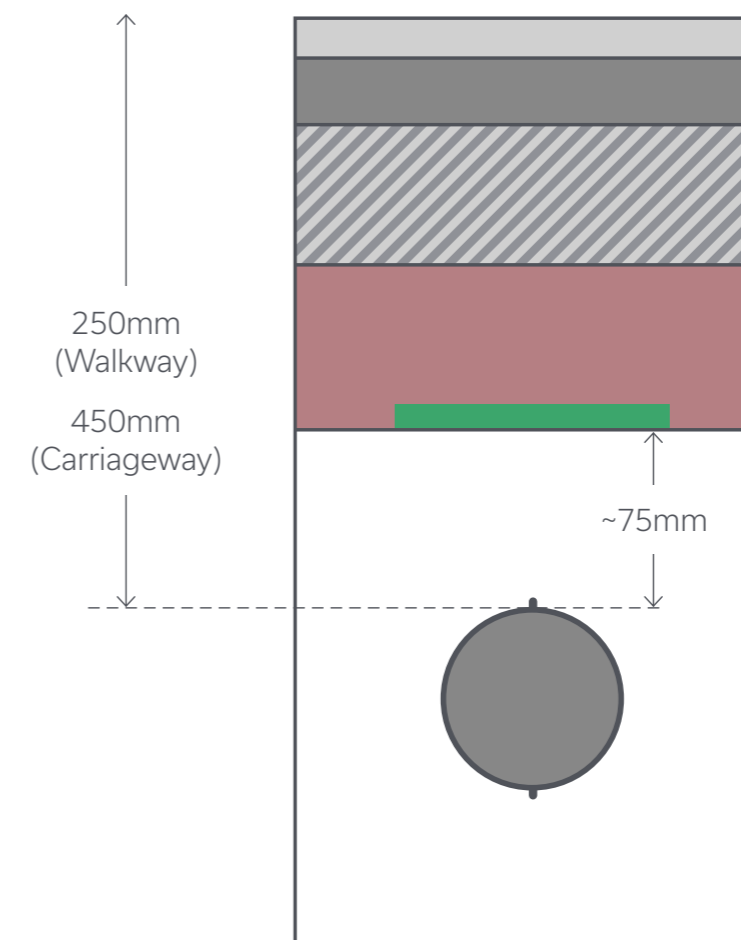
Traceable warning tape must be installed on your site above all new duct and direct-in-ground cable as no locator signal can be sent over fibre cables.

Warning tape with a traceable wire running through it will allow other utilities to locate our network prior to excavation and help our Plant Protection Officers accurately mark-up network positions.

Tape must be placed approximately 75mm above the installed duct or cable, in footways and carriageways.

Installation of tape on site falls under current SOD payment requirements.

Tape will be ordered by your FBC alongside other free issue materials.



Carriageway road crossings

Across the carriage way

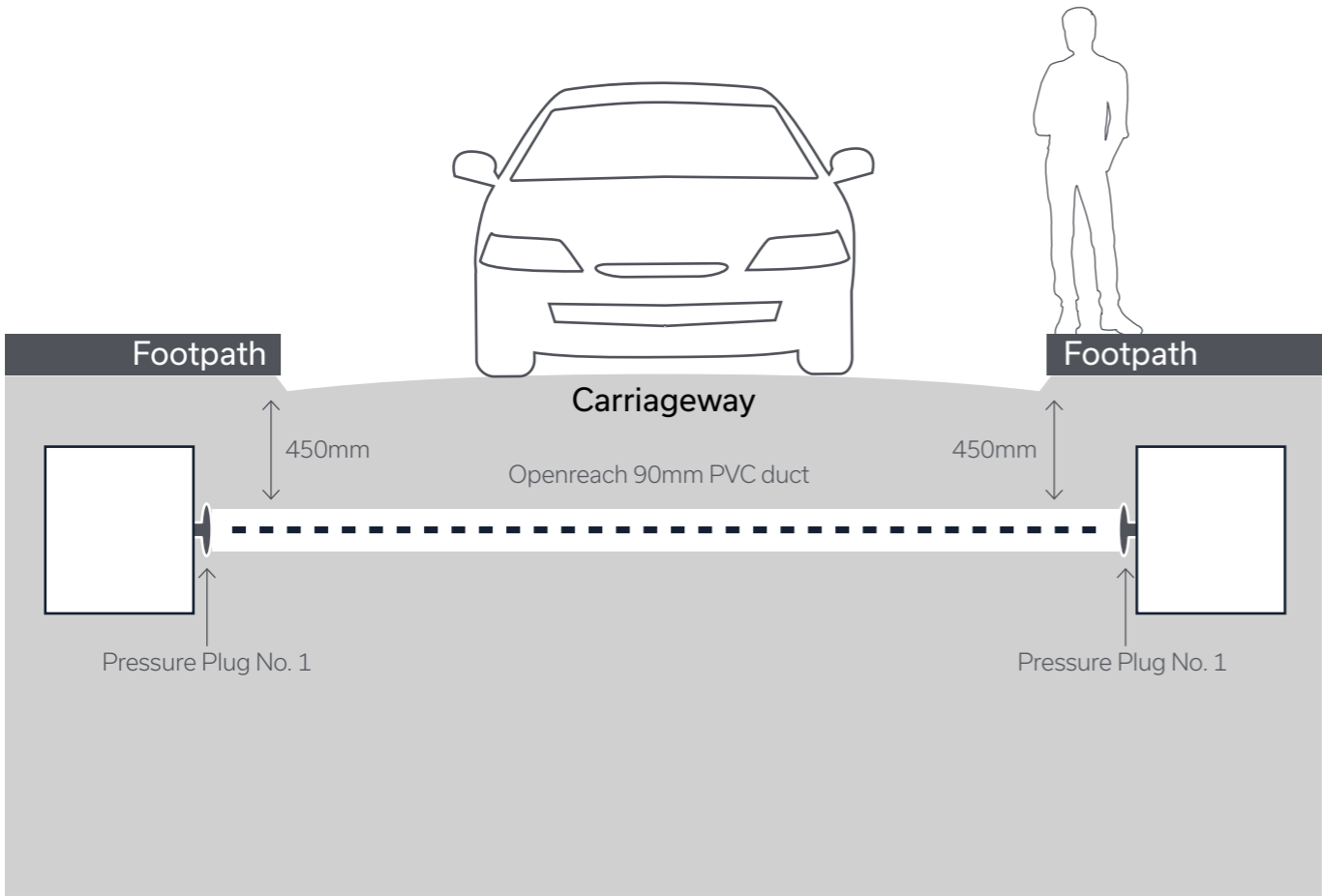
Where our duct crosses a carriageway, adjoining kerbs must be temporarily marked to note positions. Openreach duct must be laid on an outer edge of the service trench to enable box

building. Pressure Plug No.1 should be installed in a D54 90mm duct road crossing. This seals the duct and removes the need for a rope above the surface and it becoming a potential trip hazard.

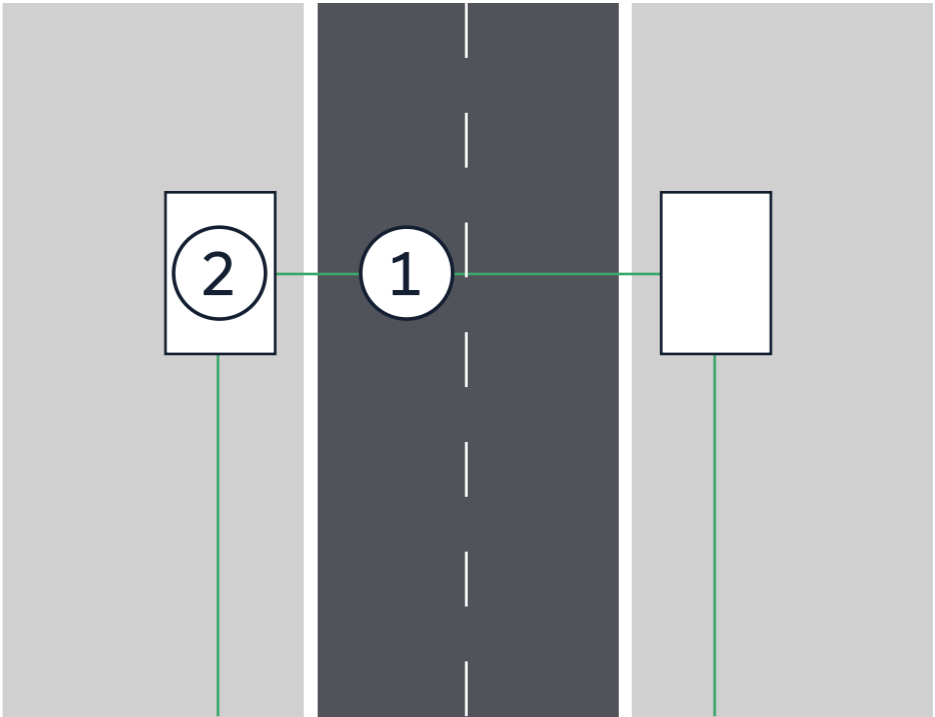
Beneath the carriageway

Duct laid beneath a carriageway crossing must be a minimum of 450mm depth and maximum of 600mm from the cover of the final surface levels and, for engineering reasons (Streetworks UK), separated from other services laid in parallel by 450mm (to permit us to install underground joint boxes without the need for bends).

Carriageway cross section



Correct duct layout from above



- 1. 90mm ducting Under carriageway
- 2. Footway box

Ducting to the building

Duct Installation

- Install rider and main D54 90mm duct lines from serving chamber
- Install Swept Tees as required to serve each plot
- Place D56 50mm 90 degree 350mm house bend so it is touching the wall of the plot and directly under the ingress point for the internal fibre cable. This **MUST** be in line as this is a common snagging issue when calling off plots.
- Install D56 50mm duct lengths from the house bend to the Swept Tee
- At the end of the rider install a reducer and a D56 50mm 90 degree long bend
- From the last plot on the rider install D56 50mm duct lengths from the D56 50mm 90 degree house bend to the 90 degree long bend.
- Installing duct in this order will ensure D56 50mm house bend is used and tight against the wall. Only a D56 50mm house bend must be used at the plot wall. **No other D56 50mm bend must be used.**



1. D54 90mm rider duct chamber to plots
2. D54 90mm main duct chamber to chamber
3. Swept Tee
4. Reducer

5. D56 50mm
6. D56 50mm 90 degree 350mm radius house bend
7. D56 50mm long 90 degree 450mm radius bend
8. Fibre ingress directly inline with duct

Ducting to the building

Order of installation



Ducting to the building

Duct Installation

- The top of the duct must be cut back to no more than 50mm above finished ground level
- When the duct installation is completed, it should be roped from the plot end back to the chamber
- 3m of rope must be left at either end of the duct tied off in the chamber and secured at the plot using off cut from 50mm duct to prevent rope being pulled back
- A foam grommet should be installed in the top of the duct to prevent debris falling into the duct and causing blockages



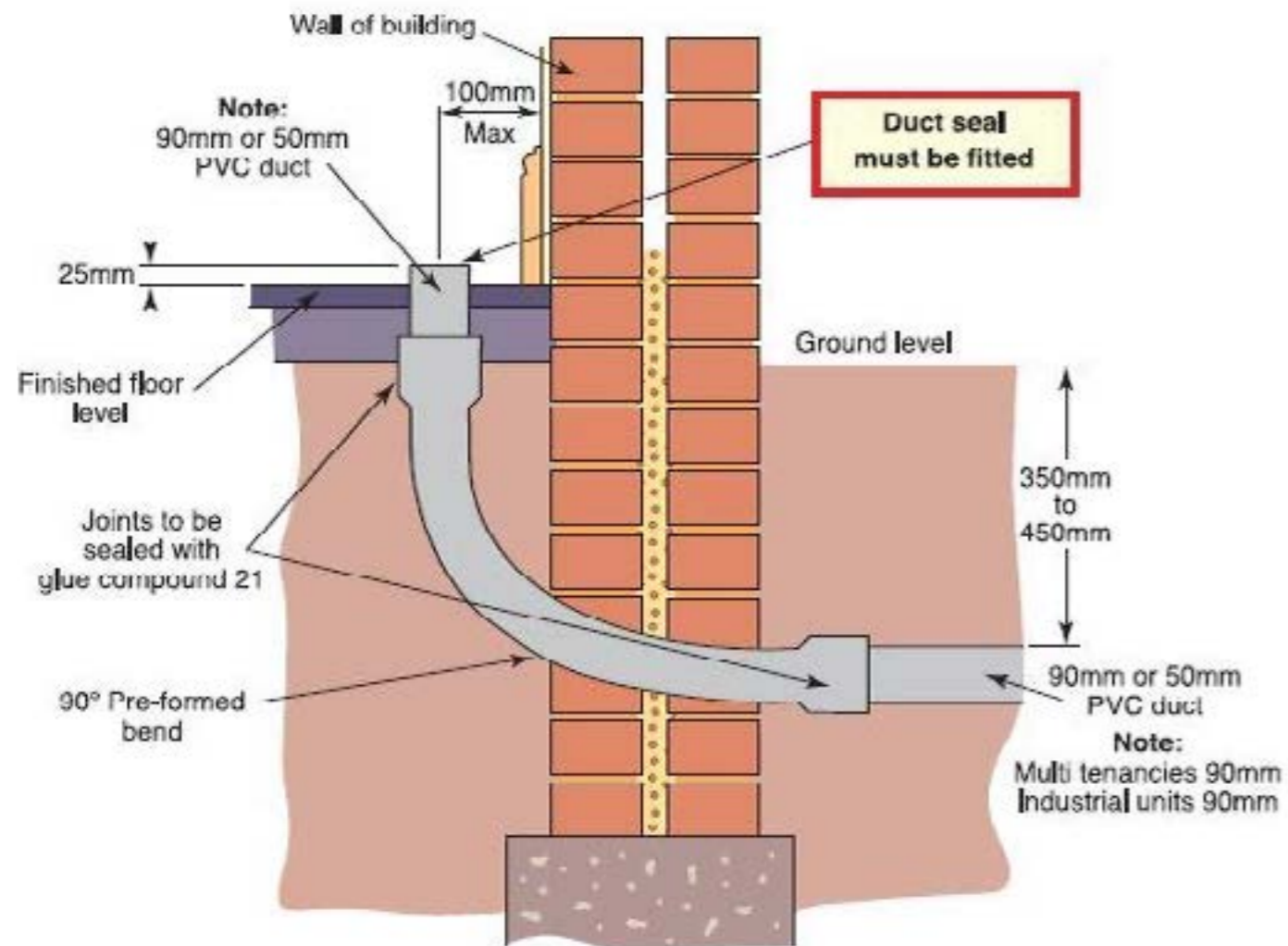
Avoiding Obstacles

- Install the D54 90mm rider duct as normal with a Swept Tee positioned so a straight line can be run parallel to the wall from the Swept Tee and with a clear line beyond the obstacle
- Install the D56 50mm 90 degree 350mm radius house bend as normal tight against the house wall and angled to create a line past the obstacle.
- Add additional D56 50mm duct at the bottom of the house bend as required to avoid the obstacle.
- Install D56 50mm 45 degree bend as required to bring the duct back in line with the Swept Tee, then install D56 50mm duct as needed to connect to the Swept Tee

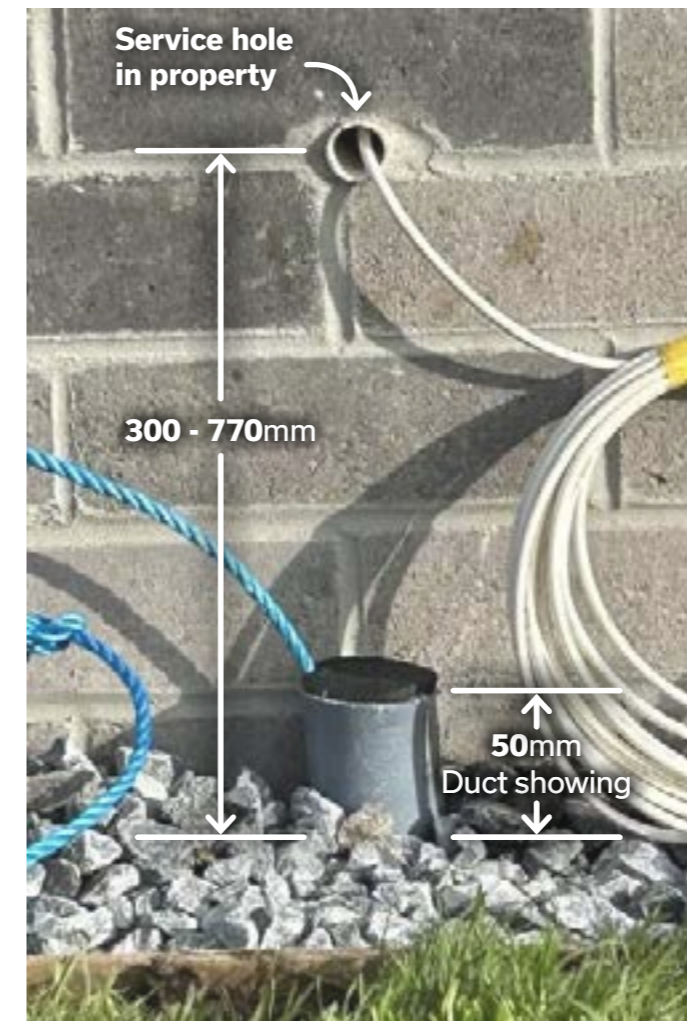


Ducting to the building

- MDU



External duct presentation



ONT in the default position

When the ONT is to be fitted in the default position on an internal wall directly opposite the entry position of the service access hole adjacent to the external duct location, external capping will be fitted on completion. To keep things tidy, make sure that the service access hole is drilled in line with the duct and in keeping with the dimensions shown on this page. The service will be sealed with a grommet or mastic before fitting the external capping.

Do not position ducting or capping in a way that covers any air bricks.



Complying with building regulations

Where you are not working with Openreach or another infrastructure company to provide a functioning broadband and phone infrastructure to the home, Part R regulations require the provision of duct in the default position discussed below so that infrastructure can be installed in the future.





www.openreach.co.uk

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