

# Quick Guide

## Joint boxes, footways and frames & covers

### Footway (JBF104/106)

Joint box designs and specifications may vary depending on the duct layout and whether multi-way ducts or major road crossings need to be incorporated into the network design.

Full technical drawings and specifications for all joint and footway boxes can be found at: [openreach.com/fibre-broadband/fibre-for-developers/guides-and-handbooks](https://openreach.com/fibre-broadband/fibre-for-developers/guides-and-handbooks)

### Materials

- **Bricks:** BS EN771-1. Stretcher Bond.
- **Cement:** BS EN197-1:2000 ordinary mix. Three parts sand to one part cement.

### Specifications

- **Base:** 150mm concrete, clean and level.
- **Brickwork:** Keyed in at the corners and pointed.
- **Frame and cover:** Set on a mortar bed and fitted squarely to the box structure. You can purchase lifting keys for the covers from TW Engineering Co Ltd at [www.twtools.co.uk](http://www.twtools.co.uk) (tel: 0115 932 3223).
- **Duct entries:** Must not enter through corners and be no less than 75mm from the side wall. They shall enter wall at a minimum depth of 250mm from the top of the frame, cut flush and clear the base by a minimum of 100mm.
- **Bolts:** Must be fitted in each box to allow ironwork to be installed by the developer.
- **Step(s):** One step is required in all boxes deeper than 700mm.
- **JBF104(C):** 915mm(L) x 445mm(W) x 750mm(D).
- **JBF104(D):** 915mm(L) x 445mm(W) x 900mm(D) the minimum depth for boxes either side of road crossings.
- **JBF106(C):** 1310mm(L) x 610(W) x 750(D).
- **JBF106(D):** 1310mm(L) x 610(W) x 900(D) the minimum depth for boxes either side of road crossings.
- **All backfill material** to be class 6N type.
- **Workmanship, materials and method of construction** are to comply with all current relevant contract documents, British Standards and codes of practice for the construction industry.
- **Concrete** to be grade C32/40 with a water cement ratio 0.4 minimum. Cement content 380kg/m. Aggregate maximum size 20mm. All in accordance with BS8500.
- **All ducts** shown are based on maximum recommended values for Duct Type 54D.
- **End ducts** to be inline.
- **Ducts** to be positioned not less than 75mm from a side wall.
- **Mesh** to be grade B500B or B500C conforming to BS4483.
- **Short lengths of Duct 54D 90mm** to be used on non-ducted routes. Appropriate duct to be used on ducted routes.
- Where instructed to do so drill one set of three holes using a 12mm **masonry drill** bit to a depth of 80mm for future fitting of equipment mounting bracket.
- For details and specs on using corbelling visit the **link** at the top of this page.

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### Please note

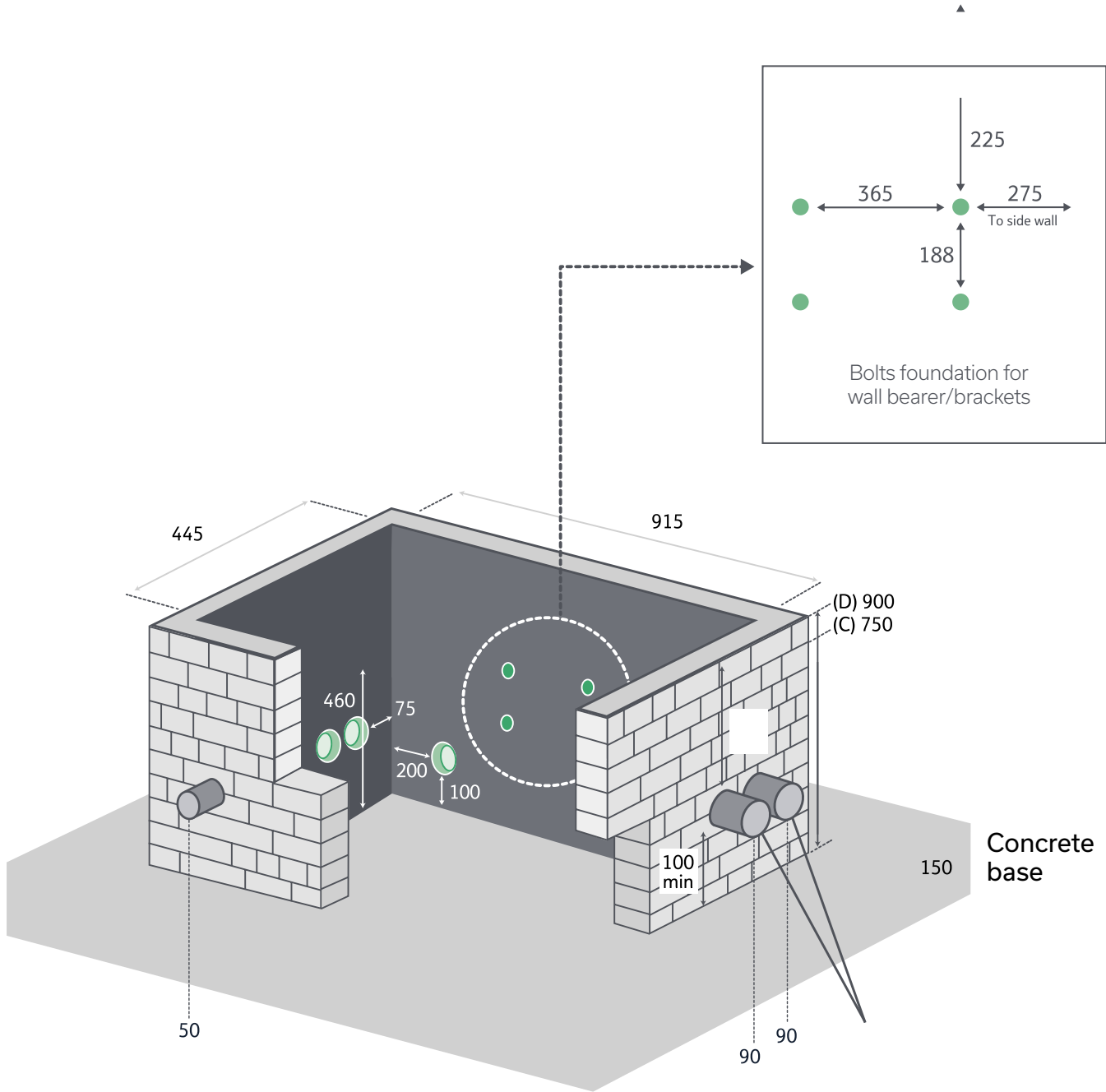
At no time must minimum box depth be compromised. Consult your FBC if the minimum depth cannot be achieved.

# Joint box footway 104 – the preferred option

Internal dimensions. Brickwork Stretcher Bond.

Dimensions in mm (not to scale).

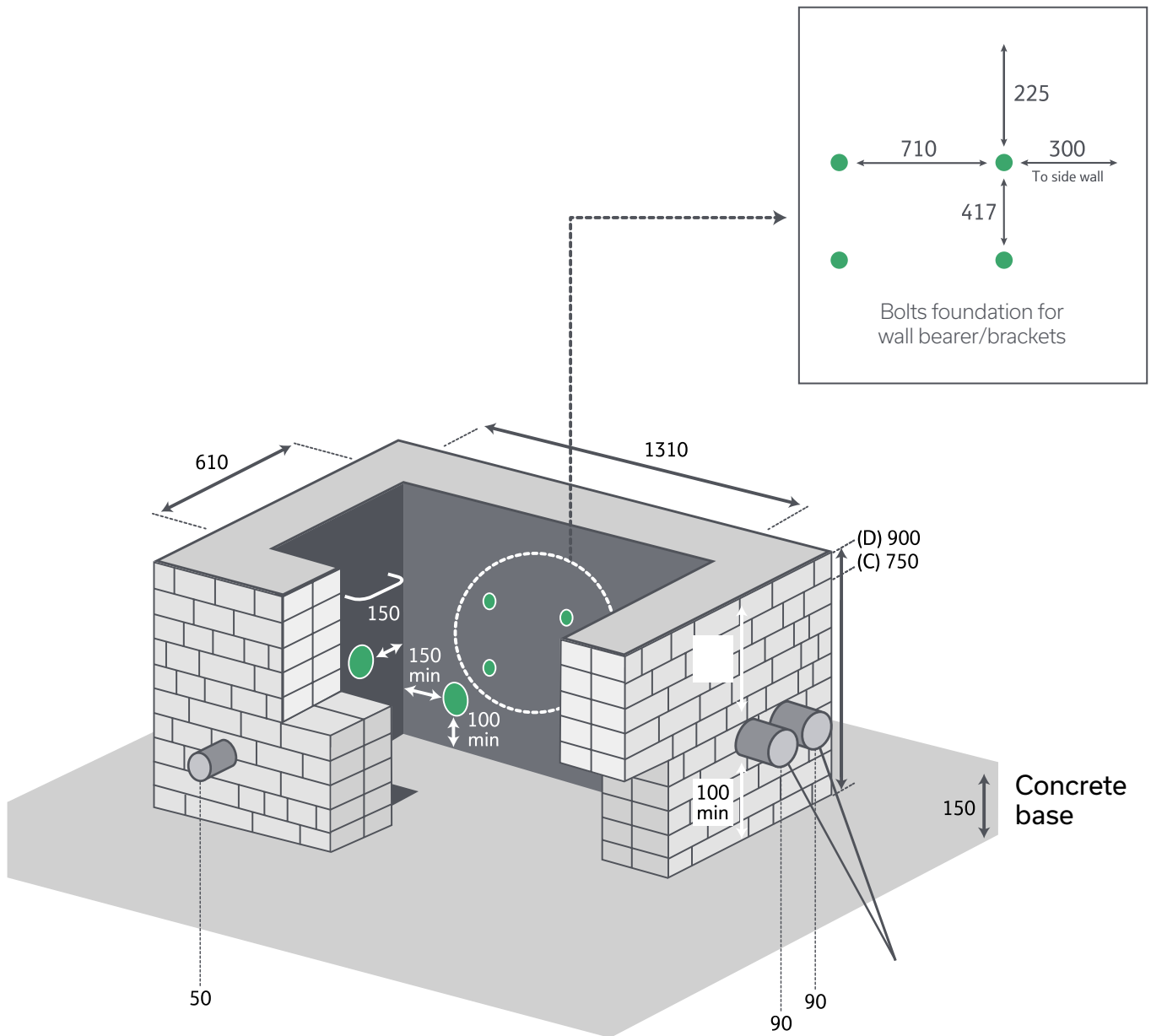
- Maximum depth 900mm



# Joint box footway 106

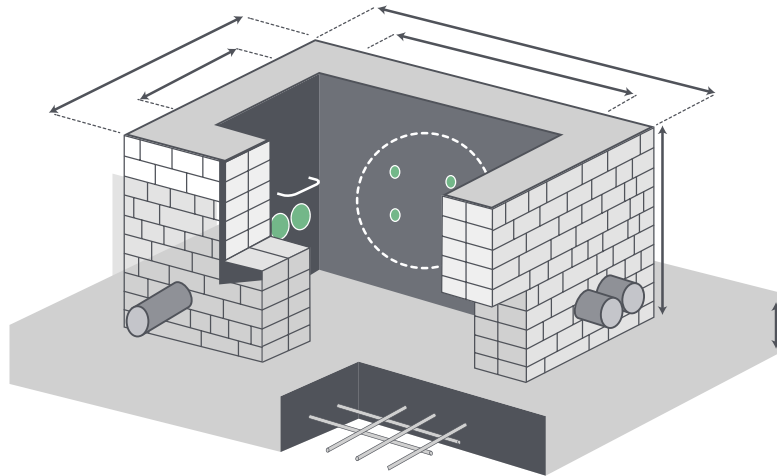
Internal dimensions. Brickwork Stretcher Bond.  
Dimensions in mm (not to scale).

- Minimum depth for road crossing 600mm
- Sump to be fitted in boxes deeper than 700mm



# Carriageway boxes

Full technical drawings and specifications for all carriageway boxes can be found at [openreach.com/fibre-broadband/fibre-for-developers/guides-and-handbooks](https://openreach.com/fibre-broadband/fibre-for-developers/guides-and-handbooks)



**Box Dimensions (mm)**

Box Type	Excavation Size		Box Opening Size		Z	a
	X1	Y1	X2	Y2		
JBC2(N)	1650	1110	1220	680	Min Depth <b>635</b> Max Depth <b>900</b>	225
JBC3(N)	1040	1040	610	610		150
JBC4(N)	1345	875	915	445		200

## Materials

- **Bricks:** Minimum Class B Engineering Bricks, BS EN1996
- **Cement:** BS12:1996 – Specification for Portland cement
- **Concrete:** C35/45, BS EN206
- **Mortar:** Class (iii), 1:5 CEMENT:SAND ratio (max) or 1:1:5 CEMENT:LIME:SAND

## Base

- **Cement:** BS12:1996 – Specification for Portland cement
- **Concrete:** 1 layer of A393 mesh to top face of base slab. Minimum 55mm cover to any face. B500B or B500C, BS4483

## Brickwork

- English bond, flush pointed

## Frame and cover

- Frame cover to be installed to DMRB CD534 installation practices

## Lifting keys

- Key Joint Box Lifter should be used to lift the cover and can be purchased from TW Engineering Co Ltd at [www.twtools.co.uk](http://www.twtools.co.uk) (tel: 0115 932 3223) or similar supplier of your choosing

## Ducting

- Duct to be cut flush to the internal box wall
- Duct must not enter through corners and be no less than 75mm from the side wall
- Duct to enter wall no less than 450mm from the top of the frame

## Frames and Covers

Cubis Industries is the only supplier of these Openreach approved products.

Only approved frames and covers shall be fitted on your site. They are identifiable by the following markings; 'EN24 B125' the British Standards kitemark the Manufacturer Mark (SID), the year of manufacture and the BT identifier.

The 'standard frames and covers' are supplied by Openreach. They consist of a galvanised steel fabricated frame, fitted with unfilled galvanised steel fabricated cover trays and cross-beams.

All covers can be fitted to brick or concrete.



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### Please note

Where there's evidence or high risk of vehicles using the soft verge e.g. as an undertaking area opposite a T-Junction, a passing point on a narrow road or a parking area, it will be necessary to install a 'carriageway chamber, frame and cover'. **There is also an optional 'recessed frame and cover'.**

## Recessed frames and covers

These can be purchased by the installer as an option to the 'standard frame and cover'.

Each cover tray has two key-hole fittings (in the centre of the short side) one of which carries a BT identity mark and the manufacturers' three letter identification 'SID'. The other key-hole fitting displays EN124 and B125 together with the BSI Kite mark certifying the covers to BS EN124: 1994. Recessed frames and covers will accommodate infill blocks to a maximum depth of 60mm. If you're planning to install frames and covers that aren't supplied by Openreach e.g. for block paving, or you have any doubts about what frames and covers to use, please speak to your FBC.



## Installation

All frames and covers shall be levelled to the final running surface.

Where a box is located within grass, soft or unmade surfaces, the frame shall be surrounded with a 100mm wide strip of minimum grade C25/30 concrete, to the full depth of the frame, finished level with the top edge of the frame and the outside edge. It must be straight and parallel to the frame.

## Unapproved frames and covers

Unapproved frames and covers must not be fitted. Openreach will take any necessary action against any developer who fits unapproved frames and covers within the network, including any potential claim for damages and costs, with possible delayed Service On Demand (SOD) payments. If you're unsure how to specify approved covers, please contact your FBC.



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## Dropped kerb and shared surface chamber boxes

If your site has shared surfaces for roads and footways, please ensure the correct joint box is installed based on the following guidelines.

- There must be a defined kerb line between the road and footway to install a footway spec box or modular quadbox in the footway area
- If no defined kerb line is present, a carriageway spec box must be installed as regular traffic could pass over these areas
- Driveways attached to houses and entrances to service areas do not require a carriageway spec box, so footway and modular quadboxes can be used for these areas



Example of a defined kerb line on a shared surface