

## What is a Drawpit?

A Drawpit is the manhole of the ducting world . They are chambers situated along a line of underground ducting and facilitate access to the ducting to allow for initial installation , maintenance and monitoring. They are typically installed at crossover points, changes of direction of the ducts and regular points along the duct length. Typically a chamber would be installed every 100m.

- Electrical Cabling Chambers
- Ducting Chambers
- HV Cable Chambers
- Traffic Signal Pits
- Street Light Wiring Boxes
- Security Gate Wiring Chambers
- CCTV Chambers
- CCTV Cable Pits
- Seismic Equipment Boxes

There are many types of Drawpit chambers



Brick



Chambers

Sectional Chamber

Concrete

Integral Chamber

Traditionally drawpits were not watertight therefore in high water table areas chambers and ducts filled with water. If they were linked to a drain this allowed vermin and odours to pass into the duct and from there into any interconnected facility. It is now common practice to make ducts and chambers as watertight as possible to avoid premature deterioration of cabling due to water absorption. Sealing of ducts into and out of chambers also avoids the cross contamination and vermin damage.

### **How to specify a Watertight Drawpit**

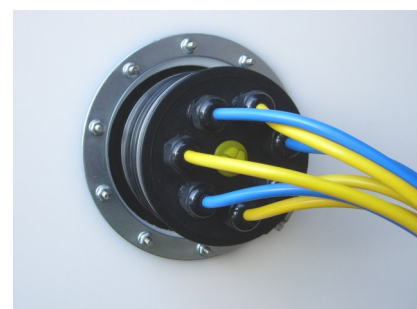
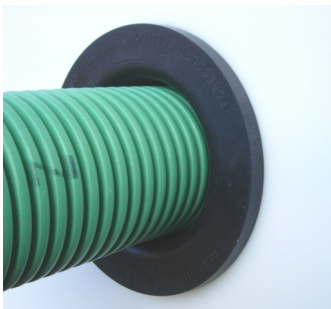
Drawpits are specified by their required clear opening at surface level, typically 300 x 200mm, 450 x 450mm, 600 x 600mm, 660 x 660mm and 750 x 750mm are commonly available sizes. The depth of the chamber is important to ensure that the ducts have sufficient coverage to finished ground level (FGL). Typical required coverage depths for ducts are; (more detailed information can be found on The National Joint Utilities Group website or by contacting the relevant utility)

| Application | Electricity LV | Electricity HV | Telecoms  | Water | Gas   | CCTV  | Other |
|-------------|----------------|----------------|-----------|-------|-------|-------|-------|
| In Footpath | 450mm          | 450-1200mm     | 250-350mm | 750mm | 600mm | 450mm | 450mm |
| In Road     | 600mm          | 750-1200mm     | 450-600mm | 750mm | 750mm | 600mm | 600mm |

Duct sizes typically range from 50mm upwards, depending on the cable size and the number of cables to be introduced into the duct. The most common sizes are 100 and 150mm which is an ID measurement so the OD maybe different dependant if single wall or twinwall ducts are being used. Twinwall ducts are available in coils thus avoiding the additional joints required with shorter straight lengths.

| Segregation (mm)                                | Extra Low Voltage | Low Voltage | Intrinsically Safe | High Voltage | Other Services |
|---|-------------------|-------------|--------------------|--------------|----------------|
| Extra Low Voltage (Data, Signal or telecoms)    |                   | 300         | 50                 | 500          | 150            |
| Low Voltage (power cables, lighting or control) | 300               |             | 300                | 300          | 150            |
| Intrinsically safe                              | 50                | 300         |                    | 500          | 150            |
| High Voltage                                    | 500               | 300         | 500                |              | 300            |
| Other Services                                  | 150               | 150         | 150                | 300          |                |

Having established the number of ducts within the chamber dependant upon the number of cables and their usage. The depth of the chamber can be determined. Most manufacturers either produce stackable chambers or chambers of varying depths. Duct entries into non-watertight chambers are typically either push out panels or cut with a hole saw or Stihl saw. In watertight chambers duct entries are made through flexible connectors often called entry or duct boots.



In applications where water or vapours are likely to be present it is good practice to restrict water and vapour ingress by the use of sealed bulkhead as shown in the picture on the right. It is also common to use expanding foam or sealants as an alternative although the quality of the seal achieved is inferior.

Finally the selection of an appropriate manhole cover enables the drawpit to be sealed at FGL. Manhole covers are manufactured from Cast or Grey Iron, Fabricated Steel, Concrete or Composite Materials. Selection of the correct cover is key to the load bearing capability of the finished chamber and to its ability to avoid surface water ingress. Manhole covers come in a range of load ratings.

Modern composite materials provide many benefits over traditional cast covers including

| Load Rating | A15              | B125                | C250                         | D400                      | E600                           | F900  |
|-------------|------------------|---------------------|------------------------------|---------------------------|--------------------------------|---|
| Application | Verges<br>Fields | Pedestrian<br>Areas | Vehicles<br>Edge Carriageway | Carriageways<br>Motorways | Forklift Area<br>Extreme Loads | Ports, Airport Aprons<br>Special Applications |

- Non Slip surface finish
- Watertight Seal Options
- Lightweight
- Non Corrosion
- Coloured to application
- Non Conductive
- Reduced theft risk
- Radio frequency conductive
- Security Options

Some manufacturers provide an integral drawpit chamber and manhole cover options thus reducing installation time and ensuring water tightness between cover and chamber even in areas of high water levels.

Further information can be found at:

[www.njug.org.uk](http://www.njug.org.uk) and [www.forecourtsolutionsltd.com](http://www.forecourtsolutionsltd.com) or telephone +44 1278 428833

Forecourt Solutions Ltd  
 Thistle Park, Crossways Road  
 Bridgwater, Somerset  
 TA6 6LS.  
 United Kingdom  
 FSL-CS-DRW-10-2012

T: +44 1278 428833  
 F: +44 1278 459808  
 W: [www.forecourtsolutionsltd.com](http://www.forecourtsolutionsltd.com)  
 E: [Info@forecourtsolutionsltd.com](mailto:Info@forecourtsolutionsltd.com)  
 Registered in England & wales No: 5669793

