FORECOURT SOLUTIONS

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

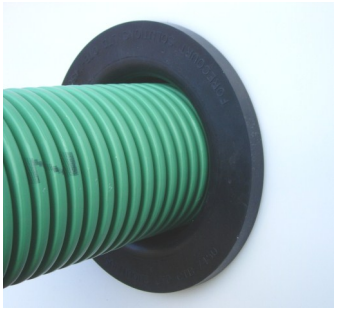
Drawpits are specified by their required clear opening at surface level, typically 300 x 200mm, 450 x 450mm, 600 x 600mm, 660 x 660mm and 750 x 750mm are commonly available sizes. The depth of the chamber is important to ensure that the ducts have sufficient coverage to finished ground level (FGL). Typical 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)

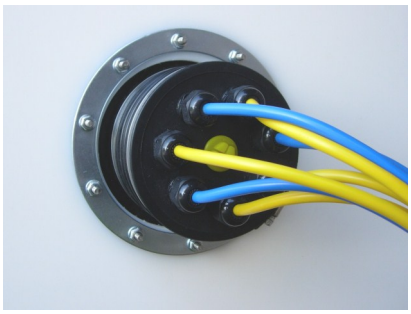
Application	Electricity LV	Electricity HV	Telecoms	Water	Gas	CCTV	Other
In Footpath	450mm	450-1200mm	250-350mm	750mm	600mm	450mm	450mm
In Road	600mm	750-1200mm	450-600mm	750mm	750mm	600mm	600mm

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. In 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 Fields	Pedestrian Areas	Vehicles Edge Carriageway	Carriageways Motorways	Forklift Area Extreme Loads	Ports, Airport Aprons 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 and www.forecourtsolutionsltd.com or telephone +44 1278 428833

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