



MONObox™

Installation Guide

The Superior
Rotationally Moulded
Plastic Pit Range



MONObox™

P1-P9 Plastic Pit Range

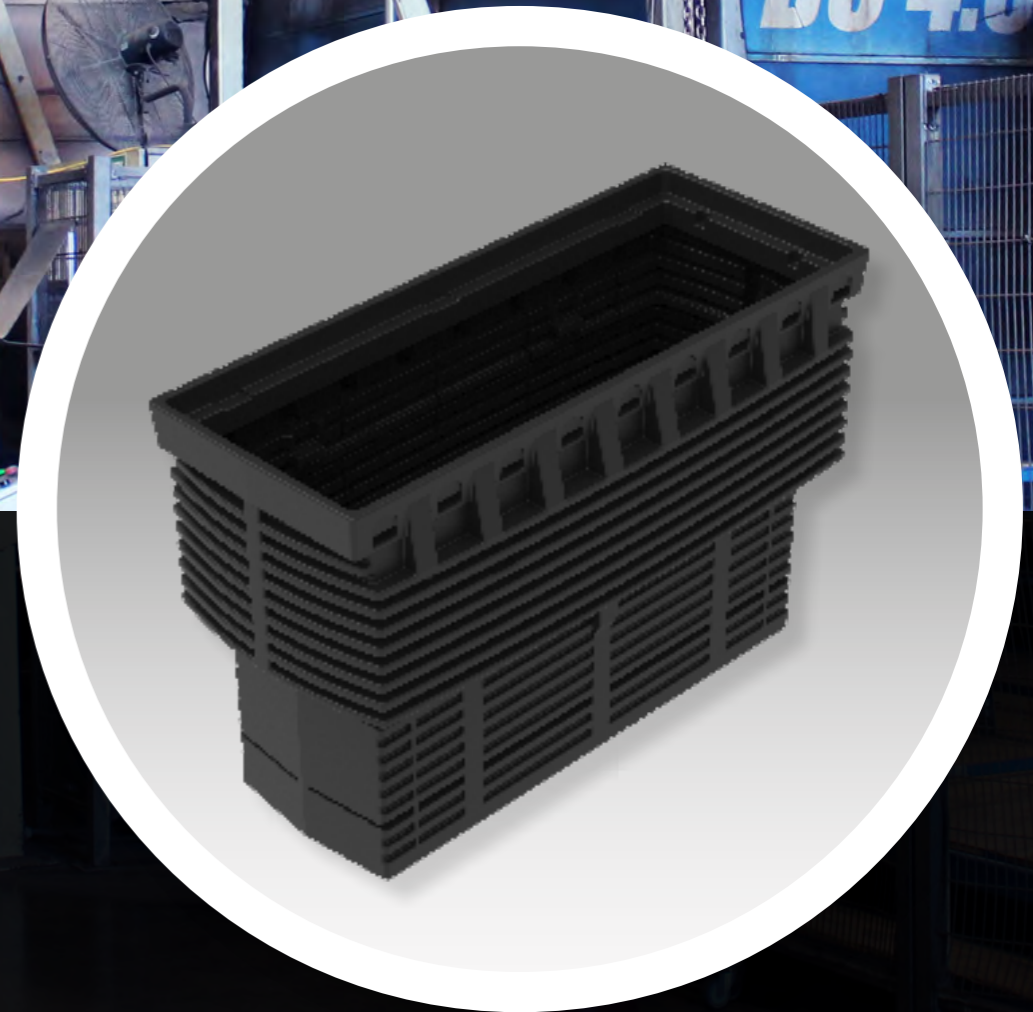
Introduction

MONObox™ is Cubis' range of single piece, structural preformed plastic cable pits. Each pit is produced as a single piece, allowing for simple installation of the pit, connection of ducts and backfilling.

MONObox™ pits are rotationally moulded plastic pits designed and tested to Class A applications as per the Australian Standard AS 3996. Pits can be rated up to Class B when installed in the ground, backfilled with crushed rock or stabilised sand and with internal PVC pipe support.

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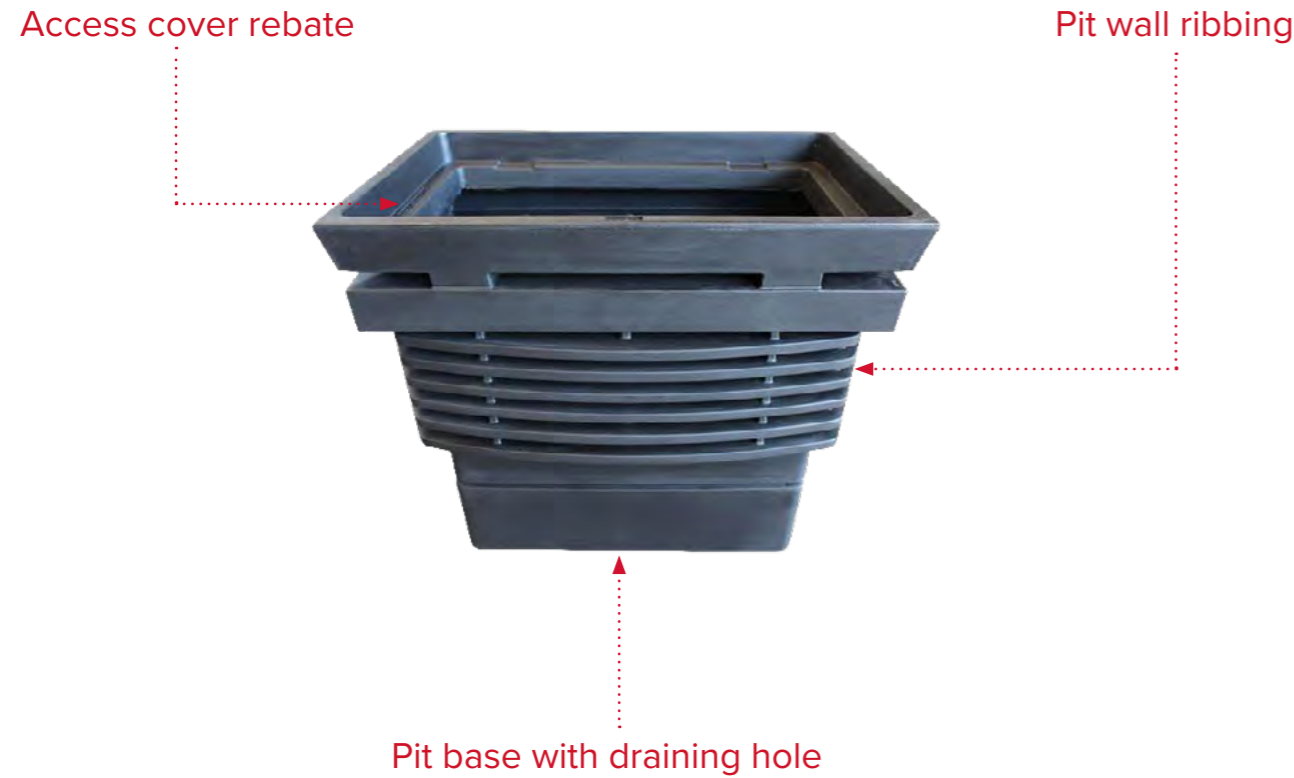
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Product Description

MONObox™ plastic pits are manufactured using polyethylene plastic material by a rotational moulding process.


All MONObox™ pits are designed with thick walls and heavy ribbing to ensure pit integrity once installed (i.e. against soil pressures).



Notes on Application

This installation guide is for MONObox™ pits being installed in areas classed as A in accordance with Australian Standard AS 3996:2019.

This means that Cubis' access pits can, depending on how they are installed, be situated in footways.

Class	Typical Use	Ultimate Limit State Design Load (kN)
A	 Areas accessible strictly by pedestrians. Not suited to vehicles. Purpose: Residential backyards. Walkways not accessible by vehicles.	10



Health & Safety Notice

In areas where the public have access, the site should be properly signed and guarded in accordance with the State and Territory regulators, laws and codes on health and safety.

Additionally, all other safety precautions required by legislation, the customer and as specified by the contract, the local authorities, other landowners and the police should be observed at all times.

Before excavation takes place, all necessary precautions to locate and protect existing buried services in the location of the access pit should be taken.



Scan QR Code for the MONObox™ Material Safety Data Sheet (MSDS).

Installation Guidelines

Conduit Entries

- 1** Prior to installation, prepare MONObox™ pit by marking end walls and cutting out required conduit entry holes using an electric/battery powered hole saw.
 - a. Placement of conduit entries shall be in line with regulatory requirements for height below conduit (pit floor to underside of conduit) and above conduit (ground level to top of conduit).
 - b. All entry and exit points for conduits or piping shall be made on a lower flat surface below the ribs of the pit.
 - c. Where conduits enter the end wall, entry and exit points for conduits shall be made as close as possible to the centre of the end wall. If more than one point is required, points shall be dispersed evenly.
 - d. Conduit entry and exit points at opposite ends of the pit must align as closely as possible to allow for a continuous pull through of cable(s).
 - e. The bottom of the entry/exit point of conduits shall be at least 50mm above inside base of the pit.

Refer to the appropriate authority specifications for the placement, number and size of entry and exit points prior to modifying the MONObox™ pit. Under no circumstances shall a contractor exceed the maximum number of conduits allowed for a given pit.

Bed Preparation

- 2** Locate, identify, expose and pacify all underground material in the vicinity.

- 3** Excavate area for the MONObox™ pit, providing a minimum of 300mm clearance on all sides and 50-100mm at the base to allow for bedding material.

- 4** Bedding material and compaction should comply to the standard set by the relevant asset owner, authority or site specification (generally coarse sand or crusher dust is preferred).

- 5** Firmly compact approved bedding material to a minimum thickness of 100mm below the pit (prior to installation of MONObox™ pit).

- 6** Ensure the final bed is even, firm and stable, providing a level surface on which to install the MONObox™ plastic pit.

Pit Installation

- 7 The MONObox™ pit may be hand-lifted during installation depending on pit size.

MONObox™ Plastic Pit	Ave. Weight (kg)*
P1	4.0
P1 & 3	7.4
P2	7.7
P3	11.6
P4	13.4
P5	12.9
P5-800	15.4
P6	35.2
P7	35.1
P8	45.1
P9	93.6

*Actual weight of the pit may vary slightly due to manufacturing processes.

- 8 Connect conduits to MONObox™ pit, ensuring conduits are flush with the pit's inside wall.

- 9 Remove all burrs and sharp edges from the cut end of the conduits.

- 10 Choose appropriate bush for the conduits. The bush needs to be installed into the entry/exit hole with rounded edges flush with the interior pit wall. The conduits must be inserted fully into the bush and PVC glued.

Backfill

- 11 Place Cubis access cover(s) into the rebate of the MONObox™ pit.

- 12 Backfill around the pit according to specification of relevant asset owner or authority.

- a. The use of clean soil, builder sand or crusher dust (finely crushed rock) is generally preferred.
- b. Layers of the compactable material, not exceeding 300mm depth per layer, shall be placed around the MONObox™ pit and compacted evenly.

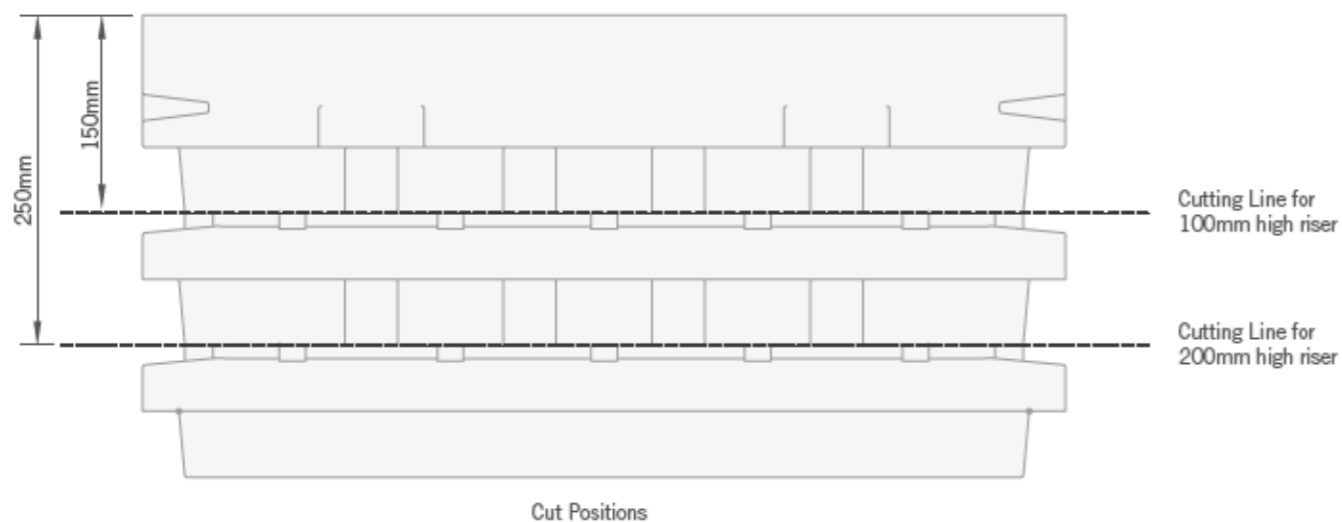
DO NOT backfill without installing PVC spreader pipes provided by Cubis for larger MONObox™ pits, such as P6 (2 off), P8 (3 off) and P9 (4 off)

- 13 Continue backfilling the site to fill entire excavation until level with ground surface or pavement. Clean the pit's edges and surrounding surface levels.



Pit Height Adjustment

- 14** The depth of a MONObox™ pit can be increased by installing a Cubis plastic collar on top of the pit.
- 15** The actual depth of the pit and collar should be determined by measuring from the opening of the pit (area where the lid(s) rest) to the bottom of the pit.
- 16** The maximum depth from the pavement (footpath) level of an installed MONObox™ pit fitted with a collar can be obtained from a customer drawing supplied by Cubis Systems.
- 17** The Cubis plastic collar can be cut to provide various depths: 100, 200 and 300mm. Cut collar of 100 or 200mm depth is required. Keep the cut straight. See image below for example.



- 18** Place the collar onto the top of the MONObox™ pit. Ensure the cut edge of the collar rests inside the top of the pit on the ledge where the covers would sit.
- 19** Drive self-tapping screws from inside the Cubis plastic collar into the top rim of the pit.
- Screw the collar to the MONObox™ pit using 35mm self-tapping screws. Place screws no more than 100mm apart.
 - From the inside of the pit, drive the screws horizontally through the collar into the MONObox™ pit.
- 20** The joint between the MONObox™ pit and Cubis plastic collar shall be sealed to prevent backfill from entering the pit. Apply a later of dry pre-mix lean concrete or sheet plastic around the outside of the pit.

Each Cubis plastic collar series, including the P6 and P8, requires two additional PVC conduits fitted between the ribs of the collar.

Lean Mix Method: Apply 100mm deep layer of lean mix concrete centrally along the joint. Limit the width to about 50-75mm with temporary formwork if required. DO NOT bury material that will rot and cause subsidence. Continue to backfill the excavation.

Plastic Sheet Method: Apply an appropriate layer of black plastic sheet (polythene flashing or builders film to AS 2870-1996) around the outside of the pit. The width of the sheet should be sufficient to allow the sheet to overhang the cut area by 100mm, if measured from the top of the pit. Top edge of the sheet should be aligned about 20mm below the top of the collar. Secure the sheet to the rim of the collar with 50mm wide PVC tape or similar. Continue to backfill carefully when placing backfill material against the plastic sheet.

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Driven by Innovation

Innovation is the engine that has driven Cubis Systems to its position as global leader in the design and manufacture of access pits and cable ducting systems.

Inspired by innovation, we have developed quality products that replace traditional construction materials like bricks and concrete. Our lightweight plastics, incorporating intelligent design features, are used in the construction of infrastructure networks for the rail, telecoms, water, defence, construction and power markets worldwide. Cubis products can be installed much faster than traditional methods and therefore save our customers both time and money.

Cubis manufactures the preformed STAKKAbox™ network access pit systems, the AX-S™ access covers range, a MULTIduct™ multiple duct system and the RAILduct™ cable troughing system at sites throughout the UK and Ireland. These innovative products are exported to more than 25 countries throughout the world. With additional manufacturing facilities located throughout Australia, Cubis provides customised, highly-engineered underground access solutions including their robust precast concrete and MONObox™ access pit systems, developed in partnership with leading Authorities and Asset Owners.

At Cubis we are committed to ongoing innovation and dedicated to delivering absolute product quality, detailed technical customer support and the highest levels of customer satisfaction.

This work document has been provided by Cubis Systems as a guide only.

Any alterations or unforeseen issues please consult the Cubis Specialist Team before proceeding.

www.cubis-systems.com.au

