

VANSTONE PRECAST (PTY) LTD

UT-BOX

PRECAST CONCRETE JOINING BOX FOR UNDERGROUND SERVICES

SPECIFICATION

Issue: Mar 2017

Introduction

The Vanstone *UT-Box* is a compact round precast concrete utility chamber for underground services. The *UT-Box* can be a joining / inspection / service chamber and is suitable for fibre-optic connections, meter boxes, valve boxes, smaller cable connections etc.

Entry of services like cables, ducts and pipes are by means of knock-out holes. The Customer may request any number, size or configuration of holes. It may be ordered without knock-outs. Provided with the standard model is 4 x 45mm diameter and 4 x 22mm diameter knock-out holes placed in the four quadrants. See picture on right.



The base or floor is supplied loose. For installation, the chamber is placed on the base, the services installed and backfilling done. The *UT-Box* may be ordered and installed without a base.

Construction

The *UT-Box* is made of TRC (textile reinforced concrete) of which the textile is open-weave AR-Glass. In order to prevent corrosion, the use of steel reinforcing is not permitted. The final product must be free of bubbles, pinholes or cracks. The outside must have a smooth and even finish. The weight including base and lid shall be no more than 15kg.

Load Bearing

The *UT-Box* is of a light duty load class to SANS 558 L (light duty). As such, it is suitable for installation where vehicle wheels have no access.

Strength testing is to be in accordance with SANS 558 paragraph 6.2.

Lid

The lid shall be either blank or equipped with a latch. The latch shall have a swing action and be operated by means of a standard 8mm square socket. The latch shall be countered by a 6mm steel pigtail catch. Metal parts shall be zinc plated.

Dimensions

<u>External:</u>		<u>Internal:</u>	
Base / floor	390mm diameter	Chamber bottom	300mm diameter
Chamber bottom	350mm diameter	Chamber top	270mm diameter
Chamber top	250mm diameter	Lid clear opening	175mm diameter
Height (complete)	320mm	Height to under lid	280mm

Installation

Method 1 Conventional Installation:

Excavate for the *UT-Box* to a depth of about 350mm deep below the final level. Over-excavate sides sufficiently to allow for workspace and for compacting the backfill.

In the bottom of the excavation, prepare a true and level bed, 30mm thick of river sand or similar. Place the loose base of the *UT-Box* carefully on the bed ensuring proper and even seating. Determine which services will be installed and knock out the required holes. See below. Place the chamber on the base and install the services. The chamber walls may be attached to the base by means of epoxy adhesive but it is not essential. After the installation of services, any openings may be sealed with PU foam. Full water tightness is not easily achievable.

Make sure that all is in order and backfill. Backfilling should always be at least as strong and serve the same purpose as the surrounding soil.

Method 2 Installation over Services:

By using this method, the *UT-Box* may be installed over already laid services. Work either under the services or temporarily put the services on one side.

For depth of services/excavation and preparation of the bed for the base, see above. Place the base and services into its final positions.

To accommodate the services, cut u-shaped openings into the chamber walls from the bottom up. Before cutting, hold the chamber over the services and mark both the size and height of the openings. Use a small angle grinder with a masonry disc or a wood saw for the cutting. Use a wood rasp to shape and tidy up the openings. There is a limit to how much of the chamber walls can be removed.

When all fits snugly, seal the openings and backfill as above. The better the backfill, the more secure the box will be. If the box has to be cut severely to allow entry to multiple or large services, it may be backfilled with concrete or a 10% cement-soil mixture.

Method 3 Installation without Floor:

When services are deeper than the *UT-Box*, it may be installed without a base or floor. Excavate to the depth of the services and expose as required. Create a cavity between the box and the services, by using a length of vertical PVC or other pipe. It must be smaller than 300mm in diameter. The top of the pipe (or bottom of the chamber) must be 300mm under the final level. Backfill securely around the pipe and level the top. Place the chamber and backfill around the chamber. The better the backfill, the more secure the box will be. When in doubt, backfill with a 10% cement-soil mixture.

Knocking out of Holes

Use a light ball head or ball-pein hammer of no more than 1½ lbs. Identify the hole to be knocked out by looking on the outside. Put one hand over the hole. Now locate the hole's corresponding inside position by placing the other hand on the inside of the wall directly over it. Mark if necessary. Start tapping from the inside with the ball of the hammer as close as possible to the centre of the hole. The taps should be light and repeatedly on the same spot until penetration occurs. Carefully enlarge the hole from the centre out until it is complete. NEVER use force, a heavy hammer or knock the from the outside in.



Contact

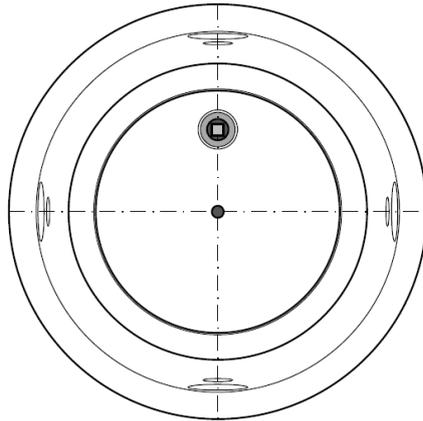
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VIEW ON LID

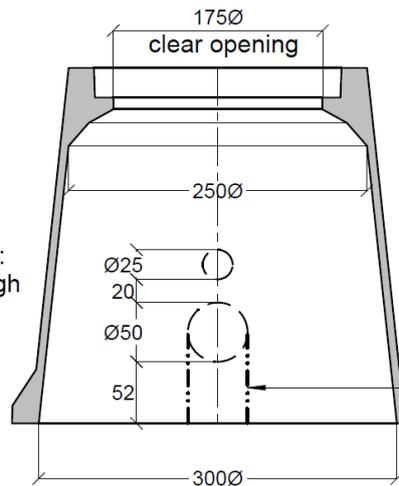
Latch optional

Knock-outs on four quadrants

Any size, number or configuration of knock-outs is possible. UT-Box may be ordered as such or even without knock-outs.



Chamber TRC:
Ø300 x 300 high



Standard knock-outs:
4 x Ø45mm round
4 x Ø22mm round

Saw open on site for over-duct installation



Floor optional

SECTIONS

UT-BOX: COMPACT UNDERGROUND UTILITY CHAMBER
v1.3

