

Installation Instructions for Cable Troughs and Service Ducts

PD 84 rev C

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1. Scope

This document gives basic guidance on the installation of cable troughs and service ducts supplied by Stanton Bonna under normal conditions. When circumstances vary, for example varying ground conditions and vehicle loadings, supplementary instructions may be required and should be provided by the overall scheme designer.

Users should note that this document is not a comprehensive guide to cable trough and service duct installation and it is expected that the work is executed under the control of suitably qualified and experienced personnel.

For the purpose of this document cable troughs and service ducts will be named as just 'troughs' throughout.

2. Receipt of Goods

On receipt the delivery should be checked to ensure that:

- The delivery note corresponds to the goods in the consignment.
- Product is free from damage, especially at the ends.
- Jointing material, if ordered, has been supplied.

Troughs are usually delivered on 24 ton articulated curtain sided vehicles. Other vehicles are available on request.

3. Handling & Storage

3.1 Handling

Unloading and handling on site must be undertaken carefully in order to avoid damage to product. Particular care should be taken to avoid impact damage to the top edges of each trough unit.

Troughs should be offloaded using a telehandler or fork lift truck relevant to load weight.

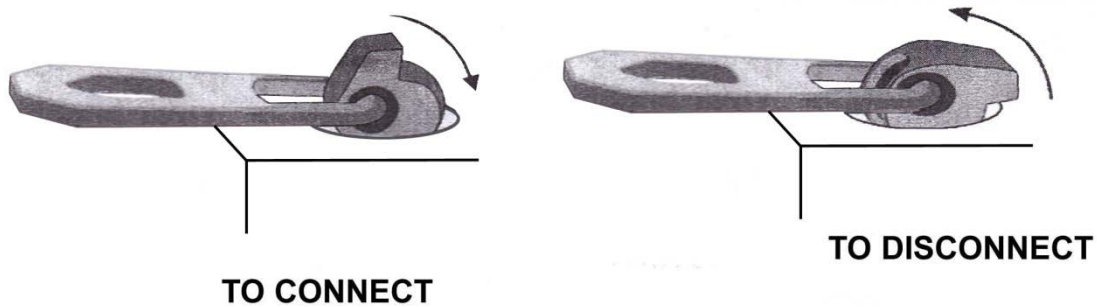
The following systems are available for lifting and handling troughs and lids:

3.1.1 Trough lifting systems (300 x 200mm up to 1250 x 600mm)

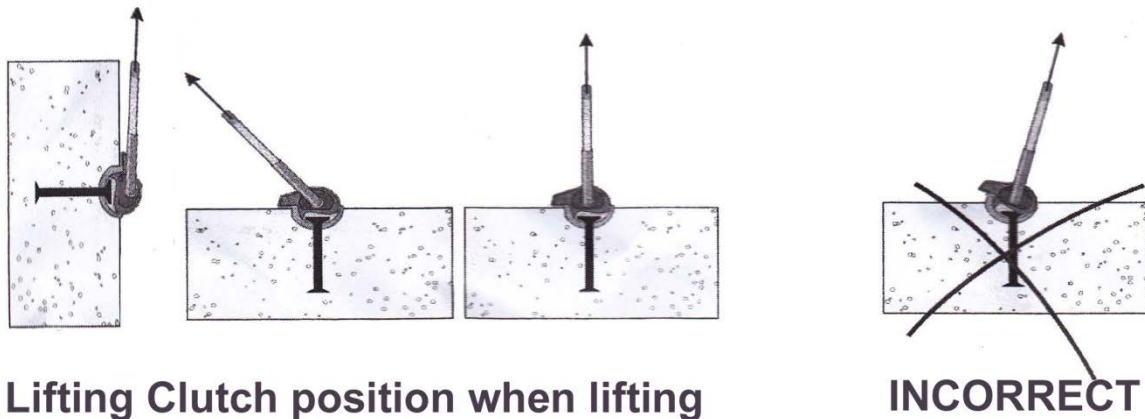
These size troughs come with four cast-in anchors to each 2 metre trough section.

- Trough sizes 1000x500mm to 1250x600mm lifting devices have a 2500 kg weight limit.
- Trough sizes 300 x 300mm to 1000x400mm lifting devices have a 1300 kg weight limit.

A lifting clutch should be attached to each anchor to allow a four legged chain set attachment. This will give safe, easy offloading and installation for the contractor.



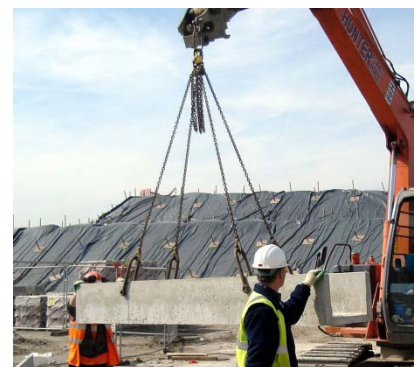
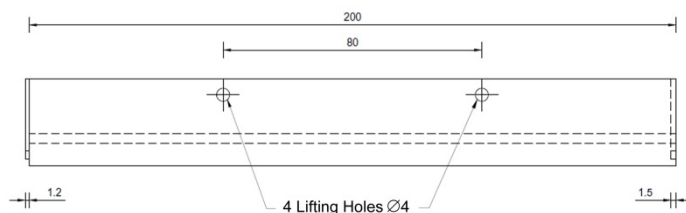
- The lifting clutch socket eye should be engaged with the anchor and the tab pushed down until flat. The nib of the lifting clutch must point towards the opposite clutch.
- Lifting clutches must be mounted without force and must turn freely around the anchor.
- Ensure the lifting clutch is fully engaged before off loading or moving of the trough.
- Only AdC (Accessories de Construction) lifting clutches are recommended for use with these products.



[Watch the Trough Lifting Guide video for details >](#)

3.1.2 Trough lifting systems (200 x 200mm)

These troughs come with four lifting holes (two on each side).



One of the safer offloading methods of these size troughs is use of D Shackles, inserted into the lifting holes, connected to a four legged chain set (as per photograph) and transported with suitable plant machinery.



3.1.3 Trough lid lifting systems

The lifting angle from the axis of the threaded insert should be from 0 to 45 degrees maximum.

While using the threaded lifting system, please ensure:

- The threads on both the cast-in socket on the trough cover and lifting device are clean and free from any debris.
- The threaded lifting system is not damaged in any way.
- The lifting eye is fully screwed into the lifting insert.

[Watch the Trough Lifting Guide video for details >](#)

The device has maximum lifting limit of 500kgs for Rd12 insert. It is approximately 155mm long and the threaded insert is approx 22mm long.

All trough covers have one lifting insert with the exception of our 1250mm trough cover which has two lifting points.

3.2 Storage

The products should remain free from soil or substances which may damage the trough or trough lid or interfere with the jointing process.

Units should be stored on firm, level ground with full width timber bearers positioned approximately 100mm from each end, beneath the bottom row. Troughs may be stacked up to 2 high. Additional timber bearers may be required to support longer lengths of trough.

Lids may be stacked up to five high in a similar manner.

4. Excavation & Preparation

4.1 Formation

It is essential to ensure uniform support of the trough. Hard or soft spots in the formation should be removed and replaced with bedding or selected backfill material.

Prepare trench to the required depth to suit ground conditions and loading.

Groundwater should be kept below the bottom of the trench.

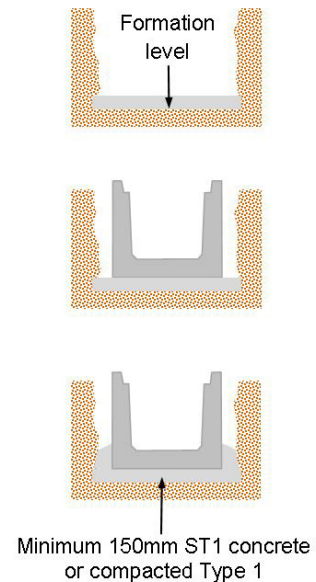
In conditions of unstable ground special precautions may be necessary.

4.2 Bedding Materials

Granular material or a concrete base may be used subject to ground conditions, loading and specifications provided.

General guidance suggests that a minimum of 150mm of ST1 concrete or compact Type 1 be used for bedding and surround.

Fig 1: Formation and bedding



5. Installation

5.1 Positioning and Jointing

Position trough to line and level.

A Sikaflex 11FC or similar jointing compound is applied to the end face of each trough before butting them together. (Supplied by others).

Continue until full length of troughing installed.

TIP: To aid bedding and alignment a 25 mm Class 1 mortar bed may be used between the trough and concrete base.

Units can be cut to form bends to allow for changes in direction and holes can be made for connection of other pipes and services. Any exposed steel being treated with Fosroc Mulseal or similar.

6. Backfilling

6.1 General

Backfilling should proceed as soon as possible after concrete base has set or when troughs in granular are in final position.

6.2 Backfill Material

Material for backfill should be similar in character to the surrounding soil. It should be readily compactable, free from large lumps, roots, rubbish and building rubble.

Reform to required levels ready for finishing materials.

The finished pavement level should be 3mm above lid level.

To facilitate removal of lid ensure that a thin vertical joint between the lid and pavement is formed during installation.

7. Paving and Pavement

Install as per project design instructions.

Figs 2, 3 and 4 give examples of flexible, rigid and trafficked installations.

Fig 2 is an example of flexible construction where paving is on a sand bed or similar.

Fig 3 is an example of and rigid construction where expansion joint and sealant are required.

Fig 4 is Fig 3 with the addition of a minimum 200mm concrete surround to accommodate heavy traffic areas.

Fig 2: Flush with surface in flexible construction

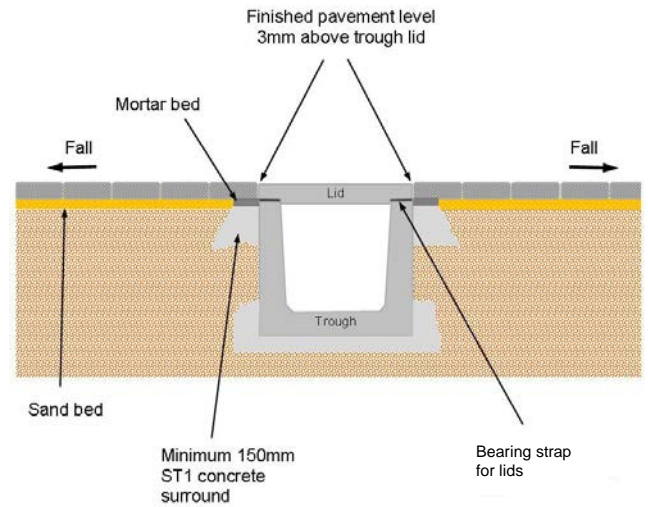


Fig 3: Flush with surface in rigid construction

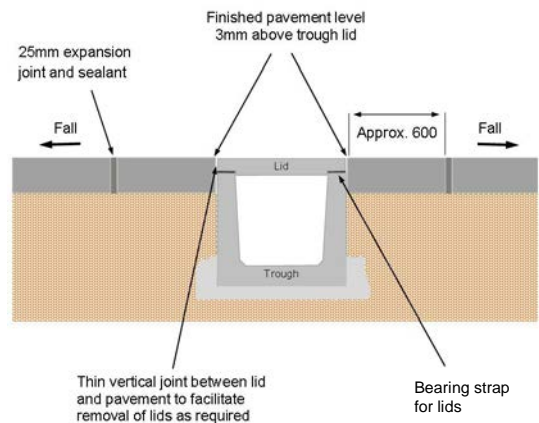
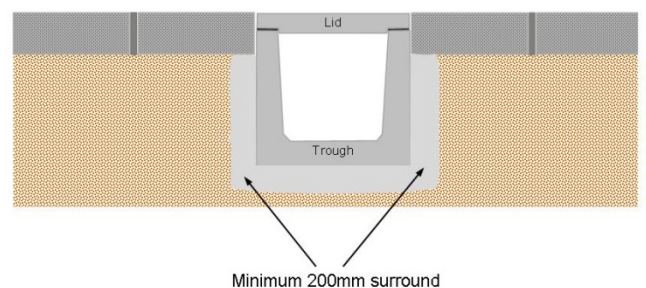


Fig 4: Heavy traffic areas



8. Trough Lid Placement

Once services are installed a bearing strip should be placed on the ***** to accept the lids to prevent unintentional point loading due to concrete to concrete contact. This is especially important in trafficked installations.

Where troughs will be used in areas where only pedestrian traffic is allowed, beads of Sikaflex FC or similar shall be used as the bedding strip and applied in 2No. beads of 10 x 10mm section per bearing.

If the lids in this situation are to be regularly lifted a strip of 500 gauge plastic film may be placed on top of the Sikaflex prior to placing the lid.

On refitting, if the lid cannot be replaced in its original position the bedding strip must be removed and a new application made.

In all cases where vehicular traffic is allowed they must be limited to normal road going vehicles with pneumatic tyres and be limited to 15mph max.

Using Troughs in areas subject to traction forces due to vehicle turning should be avoided.

When troughs are to be installed adjacent to road humps (sleeping policeman) the trough must be installed after the hump (with respect to the direction of traffic).

Apply the trough lids.

To facilitate removal of lid ensure that a thin vertical joint between the lid and pavement is formed during installation.

A thin vertical joint should be provided between adjacent lids to prevent damage due to concrete to concrete contact.

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