

Instructions for Cutting of Manhole Units

PD 83 rev A

06/10/14

1 Scope

These instructions apply to the onsite cutting of DN900 – DN1500 traditional tongue and groove manholes, in depths of 1000, 750 and 500mm. The 250mm units must not be cut.

It is assumed that all manholes are constructed as stated in the latest version of ‘**Sewers for Adoption**’ using traditional details rather than alternative construction details.

The DN900 – DN1500 range are manufactured from unreinforced concrete however, they do incorporate a ring of steel above the lifting hole for handling purposes only.

Any alterations to the manhole units should be done when the unit is in-situ and should only be done when the correct safety measures have been put in place (for example, risk assessments, supervision and PPE). Please also refer to ‘**PD 71 (B) Installation Instructions for Perfect Manhole System**’ for more information on the thick walled ‘watertight’ manhole system.

Section 4 ‘Cutting Pipe Openings’ also contains information relating to thick walled ‘watertight’ manhole rings.

2 Reducing the height of the manhole section

It is possible to reduce the height of a manhole when it has been installed. (See Figure 1).

This would be done to adjust the top level of the manhole prior to placing the cover slab.

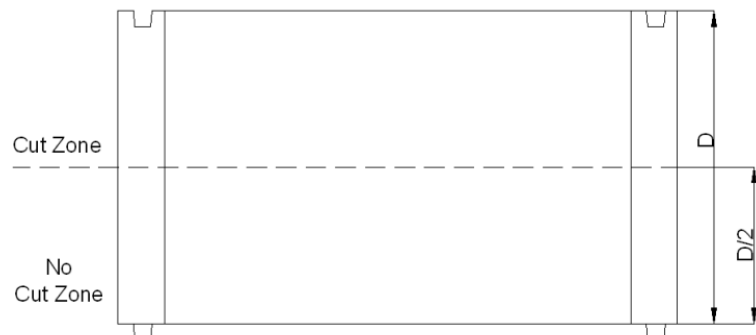


Figure 1

Key points when reducing the height of a manhole section:

- Cutting the units will remove the groove on top of the units.
- The unit that is cut should be the top one in the shaft beneath the cover slab. Thus it is important to make sure that the cut is level, square and continuous and that adequate jointing/bedding material is used when placing the slab.
- The minimum amount must be cut off.
- Reducing the size of a 250mm deep ring is not recommended.
- The cut must be carefully set out and clearly marked.
- Only competent personnel who are capable of using cutting equipment should carry out the procedure.
- A diamond tipped cutting blade is recommended.
- Each cut must be made through the total wall thickness.
- Part cutting and removing with a hammer and bolster is not recommended.

If steel is exposed when trimming the manholes, please refer to next section.

3 What to do with exposed steel

When manhole sections are cut, there is a chance that you may come into contact with some of the steel reinforcement. If the reinforcement is cut and leaves a shard of steel the concrete must be chased back and the reinforcement shard removed. The concrete must be rebuilt using a proprietary cementitious repair kit.

If the reinforcement is cleanly cut and is still held securely in the concrete, the cut surface would be coated with Mulseal DP by Fosroc (or similar approved). This must be applied as per manufacturer's instructions.

4 Cutting pipe openings

See Figures 2 & 3 diagrams below which show the cutting zones of traditional and watertight manholes. Up to 2 openings can be cut in one manhole ring.

The following rules are recommended when drilling holes in a manhole section:

- The edge of the hole must be at least 300mm from the manhole joint for traditional ring and 250mm from top and 175mm from bottom part for 'watertight' rings.
- The clear distance between holes must be at least 300mm.
- Stanton Bonna recommend core drilling the hole in one for small junctions and stitch drilling (with a core bit) for larger junctions.
- The hole must be cut using a diamond tipped blade to ensure the cut is made good.
- Each cut must be made through the total wall thickness. Part cutting and removing with a hammer and bolster is not recommended.
- Only competent personnel who are capable of using cutting equipment must be used.
- Mortar or concrete may be used to fill the annulus once the pipe is jointed.

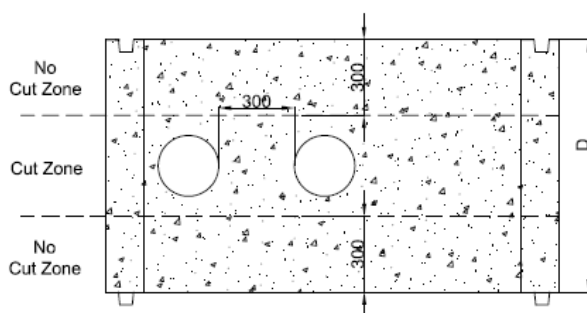


Figure 2 – Traditional Manhole Ring

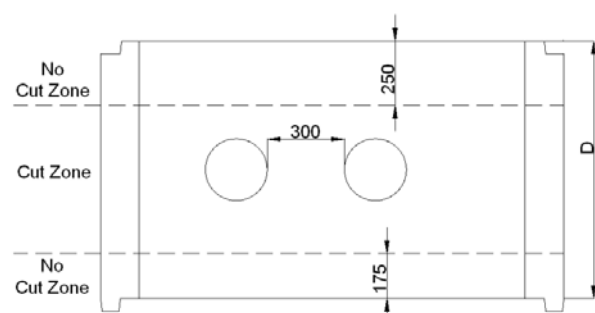


Figure 3 – Watertight Manhole Ring

Right to Change: The specifications given in this document are believed to be correct but are not guaranteed. Stanton Bonna reserve the right to alter any specifications given in accordance with its policy of continuous product development. All rights reserved.