

PROTECTING VALVE CHAMBERS - 'no-gap lid' keeps the vandals out

Vandalism of valve chambers is endemic in South Africa. Fig 3 shows a steel lid where the locking bar that was over the lid was cut off, and hence this valve chamber is now vulnerable.

Two effective vandal resistant solutions are described below:

1 'NO-GAP LID' IN A NEW SLAB

Fig 1 shows a 'no-gap lid' seated in a precast slab. This is the ideal solution for new valve chambers. The sides of the opening and the lid are both inwardly sloped such that when the lid is seated in the slab there is no gap between lid and slab. The clear opening in the slab typically varies from 500 x 400mm to 600 x 500mm. The slab may be precast or integral.

OPENING SEQUENCE

(see fig 6 for labels)

- (a) The plug is removed (see inset) from the upper end of the access tube using the magnet at the top of the opening tool.
- (b) The key (see inset) is used to unlock the cylindrical lock (see inset) and remove it from the lower end of the access tube.
- (c) The access tube is now open and the opening tool is inserted. Its pinion goes through a keyhole plate and engages the two locking levers – see fig 5, 6.
- (d) On rotation of the handle the locking levers move inwards and exit the two sockets in the slab.
- (e) The lid is lifted out of the slab (see fig 2).

2 'NO-GAP LID' IN A 'COVER-SLAB'

In the case of an existing valve chamber where the lid has been compromised such as in fig 3, an effective solution is to remove the steel lid (if not already stolen) and install a 'cover-slab' over the manhole complete with a 'no-gap lid' as per fig 4. The size of the cover-slab will vary depending on the size of the manhole - generally the cover-slab overlaps the manhole by 200mm on all sides. As in point 1 the clear opening in the slab may vary between 500 x 400mm to 600 x 500mm to house the 'no-gap lid'.

The cover-slab is internally bolted to the existing slab so it can't be pushed or lifted off the existing slab. Only when the no-gap lid is unlocked and removed can these bolts be removed.

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For information on other anti-vandalism products in our range see www.concretedoorsandvaults.com

The 'no-gap lid' is Manufactured by Concrete Doors and Vaults (Pty) Ltd and protected by SA patents 2012/08045 & 2016/07488

3 FEATURES AND ADVANTAGES OF 'NO GAP' LID

- (a) The sides of the opening and the lid are both inwardly sloped (see fig 6) such that when the lid is seated in the slab there is no gap between them, so vandals are unable to insert picks or levers.
- (b) The robust locking mechanism is attached to the bottom of the lid (see fig 5 & 6), and is thus protected from angle grinder attack.
- (c) A central stainless access tube is provided for the opening tool to engage the locking mechanism (see fig 2 & 6).
- (d) Highly chisel resistant 60 MPa is used to make the slabs and lids.
- (e) The lid has four layers of closely spaced rebar, so that the maximum passage between bars is 20mm – this mitigates against chisel attack.
- (f) The lid has an exo-skeleton of 3Cr12 plates adding further resistance to chisel attack.
- (g) The access tube is closed at the top by a SS plug, and further down by a patented cylindrical lock (see fig 6).
- (h) All steel components are made from corrosion resistant stainless steel – either SS304, or 3CR12.

