Roof-slab & Lid

SA Patent 2012/08045

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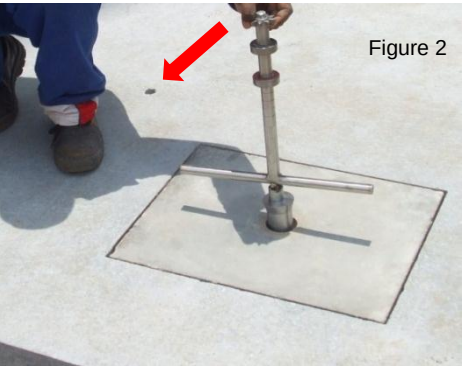

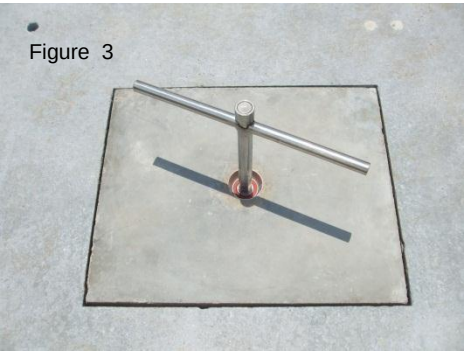

An effective solution to the ever increasing vandalism of valve chambers is to provide a roof-slab with a lid that has a very robust locking mechanism, as illustrated in figures 1 through 7:

Figure 1 : the lid is seated flush in the roof-slab – this makes it difficult for vandals to get a hold on it.

Figure 2 : a magnet at the top end of the opening tool is used to lift out a steel plug from the access tube. (The plug fits so well into the tube that it cannot be pried out with a sharp screw driver. Both the plug and tube are made from stainless steel, ensuring that the plug will not rust solid to the access tube).

Figure 3 : The tool is up-righted and inserted into the access tube – it has two bearings that centralise its shaft relative to the access tube.

Figure 4 – from inside the valve chamber : The tool's pinion passes through a matching spline plate (see inset), and then engages the teeth of the locking levers. The levers may now be retracted by turning the handle of the tool from above, rendering the lid unlocked. There are literally hundreds of combinations of pinion/spline plate, so that tools can be uniquely customised. Furthermore, the pinion and spline plate can be changed at any stage should this become necessary.

Figure 5 : The opening tool is used to lift out the lid by hand.

Figure 6 : Removable brackets (see red arrows), connecting the roof-slab to the walls prevent the roof-slab from being pulled off the walls by for example a tractor. On the other hand, once the brackets are removed, an eye-bolt may be inserted into the hole indicated by the arrow in figure 2 for lifting purposes, if for example a large valve needs replacement. This hole is precisely at the roof-slab's centre of gravity so that the slab will come up horizontally.

Figure 7 : Handover of opening tool to municipal officials of Lesedi Local Municipality, Mr Star Moholobela and Mr Nic Els.
The roof-slab can be made to any size and retro-fitted to any valve chamber. 60 MPa concrete is used for both lid and roof-slab, and both are heavily reinforced with steel bars. The net effect is a roof/lid that is very strong, heavy, cannot be cut with an oxy-acetylene torch, and offers extreme resistance to chisel attack).

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