## 'Tall Concrete Doors' protecting strategic infrastructure

pump stations, sub-stations, valve chambers, generator rooms ....

Incorporating Patents 2008/06587, 2016/07488





**SIZE:** Sliding concrete doors are increasingly being specified for their ability to withstand determined vandal attack. The doors are made up to 3800mm in height and 1800mm in width, in precision moulds, in steps of 100mm. The corresponding doorway opening should be 100mm less in height and 200mm less in width to allow for a 100mm wall/door overlap at the top and on either side. Hence the maximum doorway opening for a single door is 3700mm high x 1600mm wide. For wider doorway openings up to a maximum width of 3400mm a double door is used (also for a maximum doorway height of 3700mm).

**FEATURES:** The door's vertical front panel is supported by two SS wheels on either side, each fitted with heavy duty ball bearings, and the brackets that house the bearings are capable of both vertical and horizontal rotation, thus ensuring that the wheels are in perfect alignment with the SS rails, and that the considerable weight of the door's front panel is equalised between the four wheels. These measures make the door surprisingly easy to slide open ..... 'they slides very nice'.

The door's front panel is densely reinforced with multilayers of Y12 bars such that the clear space between bars is limited to 13mm – the reinforcing comprises 17% of the front panel's weight. This renders the door extremely resistant to chisel attack, while the combination of dense reinforcing and 60MPa concrete makes them substantially resistant to angle grinder's, even with diamond discs.

The doors are fitted with three independent locking systems.

**EXAMPLES :** The 'L-door' at the control room of the Mafenya Reservoir (see fig 1 and 2) is 3100mm high x 1700mm wide. To open the door it slides partially off the small landing and onto a steel frame adjacent to the wall (see fig 2) – this picture was taken before the building was completed.

The 'platform-door' securing the pump house at Vaal Merina is 3500mm high x 1800mm wide, see fig 3 and 4. (It may be seen that a platform door's stabilizing panel is horizontal – see fig 4 & 6, while that of an L-door is vertical – see fig 2).

Each half of the double 'platform-door' at Chuene-Maja (south of Polokwane) is 2700mm high x 900mm wide (see fig 5 & 6) . It was necessary to opt for a double door with two narrow halves as the pump house was too narrow for a 1800mm wide single door to slide open. Another width saving feature of a double-door is that the wheels are housed within its front panel rather than on the outside of the panel.

**SAVING** : The cost of these doors is generally recovered in three to six months from the saving of no longer needing 24 hr security. There is also the saving of not having to replace vandalised equipment, and finally the saving of avoiding emergency measures such as having to tanker in water.





Pump House, Chuene-Maja Water Treatment Works, Limpopo Client : City of Polokwane Consultant : Royal Haskoning DHV Project Managers : Veolia Water



For other anti-vandalism/theft products in our range please see <u>www.concretedoorsandvaults.com</u>. They variously protect valves, pumps, boreholes, control panels, generators, transformers etc. All products have robust locking mechanisms, and are made from heavily reinforced 60MPa concrete for extreme protection.

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