

# Concrete swing door for water tower

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Fig 7



Fig 6



Fig 5



Fig 4



The danger of a concrete 'swing door' is that if the hinges fail or pull out and the door falls on someone the consequences are likely to be very serious. There are three precautions that can be taken in this regard. Firstly this type of door should only be installed if the structure will be able to support the substantial loads transmitted at the hinges, and usually this means a reinforced concrete structure). Secondly the hinges should be made very strong as shown in fig 4 and fig 5. (These hinges incorporate special bearings to facilitate opening, a thrust bearing in fig 4 and a swivel bearing in fig 5). Thirdly the door should be given a wide footing (see fig 2) so that it will remain upright even if the hinges, or bolts, or concrete fail. (Alternatively, our 'L door' or 'Y door' could be considered - both these run on tracks on the floor - and have no hinges).

In fig 1 the door is shown in its closed position from the outside, while in fig 3 it is shown from the inside, also in its closed position.

In fig 6 the opening tool is being inserted into the access tube. In fig 7 the opening tool's pinion is just coming through the spline plate from the outside, and will go on until it engages the rack. Now the tool's handle can be turned from the outside, and the rack will move up until it is out of a retaining hole in the floor, rendering the door unlocked. The door may now be pushed open. Note that the spline plate and its companion pinion are customizable with hundreds of possible variations.

*Other concrete products in our range (see [www.damsforafrica.com](http://www.damsforafrica.com)) include doors and lids that slide open, roll open, and vaults with slidable/liftable members. All products have robust locking mechanisms, and are suitable for protecting valve chambers, pump stations, electrical sub-stations, transformers, borehole installations, stand alone control panels, etc. Products can be made to any size, all from 60MPa concrete with up to 5% reinforcing (vol/vol).*

Fig 1



Fig 2



Fig 3

