

NATSOL FULL ACCESS VAULT INSTALLATION

See: **SITE SPECIFIC GUIDANCE** (2 pages on)

Checklist of components [& tools] supplied by NATSOL for this stage:

- a. vaults with dividing wall and fitted with urine pipe & rodding access
- b. lid/floor section with hatches
- c. GRC soakaway unit with back inlet gully OR gully without soakaway unit
- d. selection of 110mm connectors
- e. SIKA - adhesive mastic to seal lid to base
- f. lifting slings and lifting eyes for lid – normally carried in driver's cab with SIKA

Personnel & skills required for this stage:

- g. machine operator, banksman and 1 or 2 others
- h. site marking out & excavation
- i. concrete preparation and levelling
- j. lifting using digger, shackle and slings
- k. checking levels
- l. masticking
- m. plastic pipe connections

Method – see accompanying SITE LAYOUT drawing:-

NB.

1. To avoid risk of hole filling with rainwater **do NOT carry out excavation until vaults are on site.**
2. Vaults should be bedded onto wet concrete – **do NOT prepare slab in advance.**
3. If there is likely to be heavy rain before the concrete has set around the vaults it may be wise to fill the vaults with water to prevent flotation and pump out later.
4. **The toilet vaults without lid weigh over 1/2 tonne. Installation may be dangerous if our instructions are not followed or if unqualified personnel are employed to operate and direct machinery. Keep onlookers and children clear of site by roping off. Wear safety clothing. Put digger driver and banksman in charge.**

1. There are two methods by which vaults can be off-loaded from the delivery lorry. You can use the lifting slings supplied [ask delivery driver] and a “D” shackle **[not supplied]** as shown below, **OR** use the forks on the digger or other machinery – providing they are long enough and strong enough to lift 850 kgs. If you use forks you will need to swing the vault around on the lorry so that the forks pass underneath from the side rather than from the end. You can also reduce the total load by removing the floor section whilst the vaults are still on the lorry. Lift using machinery and set aside on timber bearers – see below. If you remove the vaults from the lorry complete with floor section, remove this afterwards.



2. Carefully plan the excavation and soakaway/s. **See notes and drawing: SITE LAYOUT, EXCAVATIONS & SOAKAWAYS.** The exit pipe for the urine soakaway is

on the **right hand side** of the vaults as viewed from the front [door end]. If there is no room this side for the soakaway or if it is unsuitable ground then place the soakaway behind or even on the other side but keep the vaults the same way round. You will need more pipe to connect up if the soakaway is more remote but this is fine providing the pipe runs downhill with a gradient of at least 1:60. For the vaults mark out the excavation 2m [side to side] x 2.5m [front to back]. **For depth see Site specific Installation Guidance drawing.** On sloping sites the **maximum** depth should be as shown.

3. Carry out excavation finishing by hand if necessary to achieve the required depth evenly over 1.8m x 2m central area in bottom of hole. Carry out urine soakaway excavation too – and rainwater soakaway if a separate one is required.



4. Check that subsoil is compact and firm. If it appears unstable seek professional advice as to how to proceed.
5. Make screed rails run front to back, 1.8m apart, and level them. Tops should be at a depth 50mm less than the required excavation depth.
6. Fill area between them 50mm deep with fairly dry mix of approx 6:1 [aggregate: cement] and level off.



7. Check again which way round the vaults have to go to ensure that urine exit pipe is on the right hand side and then using slings beneath the end vault flanges lift the vaults using the digger or other machinery and lower into position.
8. Check to see that the vaults are not out of level by more than 10mm across the width and length. Lift out and re-level base if necessary or tap down gently on high side using large rubber kerbing mallet.



9. Mix remaining concrete and fill around outside of base of unit to cover bottom retaining flange and to connect to concrete beneath. **In heavy clay soils or on waterlogged sites use 2m³ [4 tonnes] total concrete so as to prevent possible flotation of vaults [and building] if ground becomes waterlogged. IF YOU FAIL TO USE SUFFICIENT CONCRETE THIS MAY BE THE RESULT:-**



10. Earth may be backfilled at this stage but leave out sufficient to enable access below the flange to insert the bolts or screws which will hold the building in position.



11. Empty the entire bale of woodshavings into the vault to be used first and rest the rake in there too – but not the spade which should be stored by the owners.
12. Clean rim of vaults and apply generous amount of SIKA to this and to the top edge of the vault divider.

13. Carefully lower lid/floor section into position using steel lifting eyes, slings and digger. The 160mm diameter vent pipe hole should go in the **back RH corner** of the building as viewed from the door. Check alignment and bed down manually. Point up joint between vaults and floor around the outside edge with SIKA.



14. Install soakaway as shown in the **Soakaway Instructions**. Height should be such that the 110mm pipe from the vaults will have a minimum 1:60 fall. If you have not been supplied with a ready made soakaway unit then the back inlet gully must be situated in firm ground and stabilised with some concrete around it. Whichever type of soakaway you are installing **use the GREY 90 deg bend assembly to connect to the vaults and to get underground. Brown pipe should not be visible above ground.**
15. With the GRC soakaway behind the toilet [Position A] use a 90 degree BROWN bend connected to the GREY bend assembly shown below. If the soakaway is alongside the toilet [Position B] then go directly with 110 pipe from the grey S bend. Fittings are in the fittings box. If you have bought a building from us there is a 3m length of 110mm pipe inside the 160mm vent pipe. You may need to acquire other fittings.

Approx ground level
▶



Vaults with grey S bend connected to urine outlet



For rear soakaway position



Possible rain gully position

16. Position of rain gully in relation to vaults. Shown at vent pipe corner. Could be placed at other rear corner in equivalent position if preferred.
17. If the building is being erected later cover up the vaults to prevent rainwater getting in.



Rake rested inside active vault.



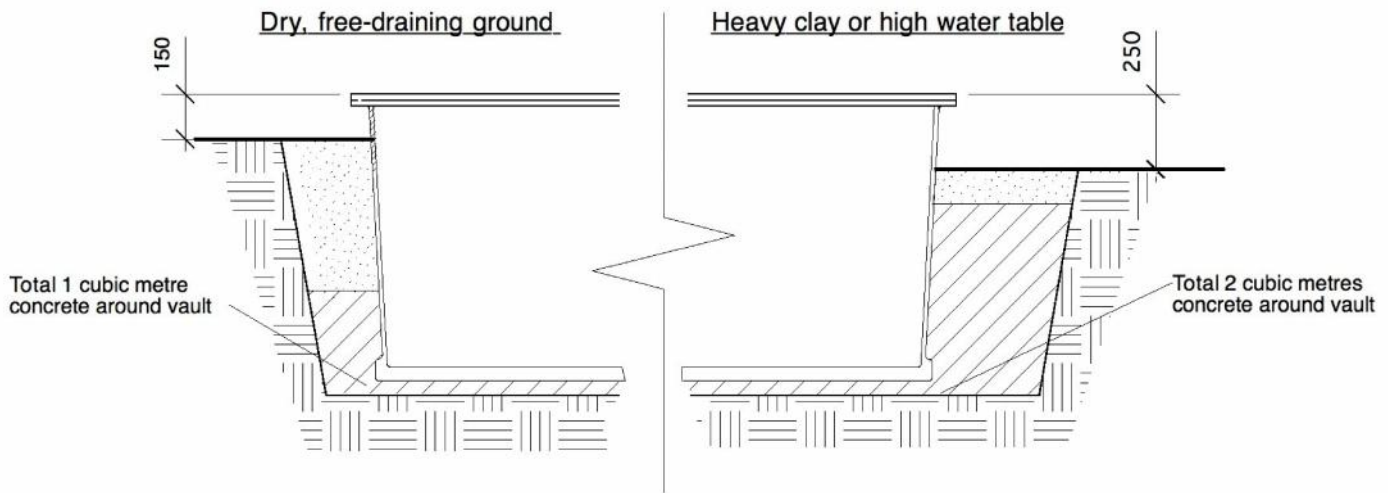
A view from the front RH corner of the building. The ventilation socket is in the back RH corner.

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SITE SPECIFIC VAULT GUIDANCE for IN-GROUND TOILETS.

Contract number: Site postcode (if multiple sites);

For this installation, based on the information you have sent us, we *suggest* that the excavation depth should be **850mm/750mm** resulting in a finished floor level at **150mm/250mm** above ground as shown n the **LEFT/RIGHT** hand drawing below.



LEFT

The excavation depth on dry free-draining sites is **850mm** and 50mm screed is then placed in the bottom of the hole to reduce the depth to 800mm. This is the **LEFT HAND** drawing above. In this case the finished floor level will be **150mm** above ground.

RIGHT

On many sites under current climatic conditions, or where there is clay, the excavation depth should be **750mm** reduced to 700mm once 50mm screed has been placed in the hole. This is the **RIGHT HAND** drawing above. In this case the finished floor level will be **250mm** above ground.

On sloping sites the depth on the uphill side should be as above.

ADDITIONAL INFORMATION:

PLEASE INFORM US IF YOU DO NOT ACHIEVE THE SUGGESTED HEIGHT DIFFERENCE BETWEEN FLOOR AND GROUND LEVEL