


Faecal sludge transfer station: metal tank



This corrugated metal storage tank (dimensions D: 2,68m x H: 2,35m, 14m³) has been designed to be rapidly deployable and offer semi-permanent options for sludge storage in areas where no sludge storage is rapidly available. The reservoir can provide storage of sludge in areas where no final disposal site is yet available or can be used as transfer station near high density areas where only small devices can empty and transport sludge.

The tank is largely similar to the so called Oxfam tank, but has a 160mm outlet fitted on the bottom the liner is fitted with conical outlet. The reservoir is delivered with an extra row of metal sheets which can be filled with soil to facilitate easy emptying. The relatively large 160mm outlet prevents blockages of waste or solids that might be mixed within the sludge. The liner is tightly closed with a roof with small manhole to reduce smell and prevent access of flies.

Treatment technology:	Containment of sludge only, reservoir could be used for some treatment processes
Treatment objective	n/a
Treatment capacity	Reservoir has 14m ³ storage capacity, other sizes are available
Site requirements	A flat area with 2,5m radius is required, sharp items, such as stones should be removed before erecting the side. Tank should not be erected in close vicinity of houses.
Life expectancy	Up to 10 years (to be determined based on further field testing and based on solids in sludge)
Weight and volume	Shipping weight: 545 kg (500 + 45 packaging) Volume: 2300 x 900 x 1200 mm
Startup time	Tank can be assembled and dismantled within one day.
Capital cost	EUR 5950 production cost incl product development
Operational cost	There are no direct operational costs, but it is advisable to build the reservoir in a secure and guarded area. People working with sludge should wear Personal Protective Equipment.

<p>Equipment overview</p>	<p>Reservoir consist of four components</p> <ol style="list-style-type: none"> 1) Metal corrugated panels with a zinc-magnesium coating with a special panel length of 2300 mm 2) Open top liner polypropylene 0,75 mm, 800 gr/m2 (Heavy Duty) Diam. 2,68 x H. 2,35 m3 3) The span roof is made of reinforced PVC, 350 gr/m2. Including a closeable manhole, to limit smell and for fly control. 4) Flange outlet system in the bottom - Diam. 160 mm to facilitate easy emptying and cleaning
<p>Process overview</p>	<p>The reservoir can provide safe long term and short term storage of fecal sludge. The reservoir can be dismantled and rebuild when needed. The reservoir can provide storage of sludge in areas where no final disposal site is yet available or can be used as transfer station near high density areas were only small device can empty and transport sludge. To prevent blockages and facilitate cleaning a large 160mm bottom outlet was fitted, but large solids can still block the outlets.</p> 
<p>Additional considerations</p>	<ul style="list-style-type: none"> - The reservoir and more so the liner though often used in Europe are a relatively untested in the humanitarian contexts where fecal sludge is sometimes mixed with a large number of solids. - Though the reservoir can be easily erected and dismantled it is designed to be semi-permanent. - Large amounts of larger solids can block the outlet of the reservoir.
<p>Advantages over other reservoirs</p>	<ul style="list-style-type: none"> - Can be transported setup and dismantled relatively easy - Controls smell and flies by tightly sealed liner and roof - Bottom outlet for easy emptying and cleaning.



Outlet of tank

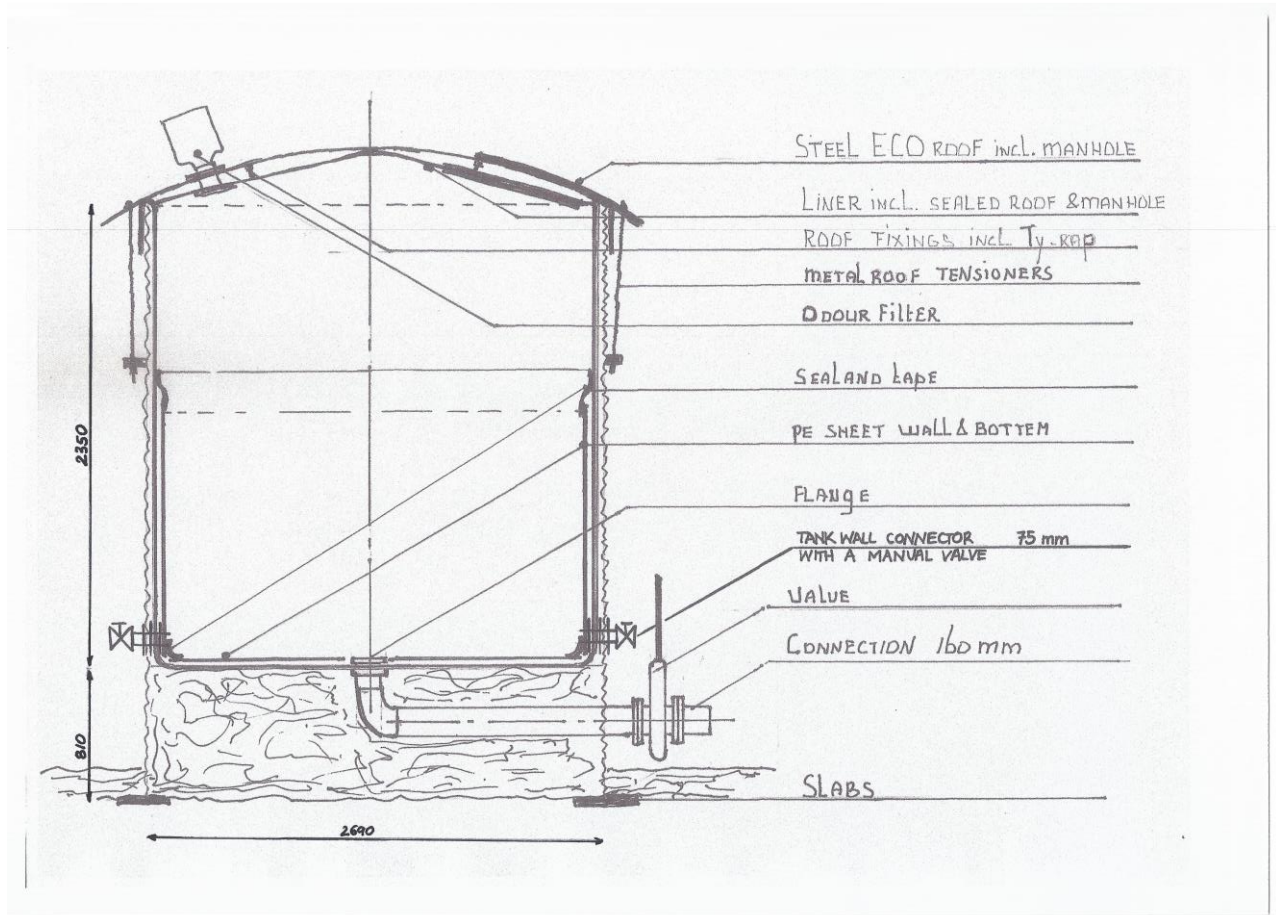


First level of metal sheets filled with sand



Liner after use

Technical overview:



Learn more at www.emergencysanitationproject.org or email Jan Heeger at JHeeger@redcross.nl