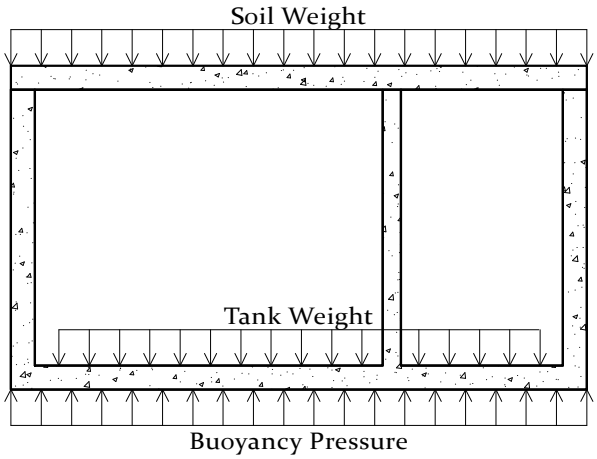
Tank Buoyancy



Yes indeed, concrete tanks can float! The following assumptions are made in determining the water level at which flotation occurs:

1. Only the weight of the tank and soil above will be resisting the buoyancy pressure.
2. Soil weight = 120 pcf
3. Concrete weight = 150 pcf
4. Water weight = 62.4 pcf
5. The tank is empty inside.

Buoyancy = weight of water displaced by tank

A = water level (ft) from bottom of tank to float tank without any soil cover

B = water level (ft) to float tank with 12" of soil cover

Tank Model	Tank Height (ft)	A	B	
LB-750	4.67	2.7	4.6	
LB-1000	4.67	2.8	4.7	
ST-1000	5.4	3.4	5.3	
LB-1250	4.75	2.6	4.5	
ST-1250	5.4	3.0	5.0	
ST-1500	5.4	2.8	4.75	
ST-2000	5.5	2.7	4.6	
ST-2500	6.8	3.2	5.0	
ST-3000	7.75	3.3	5.2	
H20 Loading Tanks				
750	5.92	6.4	8.3	This tank will not float.
1,000	6.58	6.6	8.5	This tank will not float.
1,250	7.17	6.9	8.8	This tank will float only without soil.
1,500	7.17	6.5	8.4	This tank will float only without soil.
2,000	7.25	6.4	8.3	This tank will float only without soil.
2,500	7.25	5.3	7.2	
3,000	7.25	5.8	7.7	
3,500	7.25	5.7	7.6	
4,000	7.25	5.2	7.1	
5,000	7.25	4.4	6.3	
6,000	7.25	5.2	7.1	
Other Tanks				
SC-5x9 Siphon Ch.	3.0	2.2	4.2	This tank will float only without soil.
PC-3x4 Pump Ch.	4.25	3.7	5.6	
PC-4x4 Pump Ch.	4.25	3.2	5.1	

48" ID Manholes with more than 6.5' of interior height with groundwater at the top will float.
60" ID Manholes with more than 6' of interior height with groundwater at the top will float.
72" ID Manholes with more than 5.75' of interior height with groundwater at the top will float.
Manholes deeper than this and subject to high groundwater will need an extended base added.

WOODARD'S
CONCRETE PRODUCTS, INC.
629 Lybolt Road, Bullville, NY 10915
(845) 361-3471 / Fax 361-1050
Peekskill (914) 737-1074
www.woodardsconcrete.com