Speed Chassis

Speed Chassis – a rebar reinforced frame onto which, in the CGH factory, the tank is strapped with flat steel bands. The tank onto the speed chassis is delivered at the construction site. The speed chassis serves, once in the excavation, as reinforcement of the concrete anchoring slab.

Advantages:

- cost savings of the anchoring slab
- time saving on the building site
- improved safety during handling and installation

Description of the speed chassis

The speed chassis structure is composed of two or more I-beams with welded tank support beams in a V-shape. The two or more traverse beams are linked together with rebars. The tank is strapped onto the speed chassis with two or more flat steel bands. Tank with speed chassis is lowered in the excavation and leveled. Concrete is poured onto the speed chassis till the provided height markers. The design of the obtained concrete anchoring slab is based on a fixed thickness of 300 mm and the project parameters: including tank diameter and length.

Tank diameter	Ø 1600						Ø 2000							Ø 2500							Ø 2900					
Nominal volume	3	5	7	10	13	16	10	13	16	20	25	30	36	20	25	30	40	50	60	70	40	50	60	70	80	100
Tank length [mm]	2040	3040	3840	5540	7040	8540	3660	4660	5660	6810	8660	10160	11960	4800	5800	6800	8800	10800	12800	14800	6900	8400	9900	11400	12900	15900
Speed chassis data																										
Speed chassis width [m]	1,60	1,60	1,60	1,60	1,60	1,60	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,90	2,90	2,90	2,90	2,90	2,90
Speed chassis length [m]	2,04	3,04	3,84	5,54	7,04	8,54	3,66	4,66	5,66	6,81	8,66	10,16	11,96	4,80	5,80	6,80	8,80	10,80	12,80	14,80	6,90	8,40	9,90	11,40	12,90	15,90
Speed chassis height [m]	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30
Results for a double-skinned tank	MAXIMUM GROUND WATER LEVEL MEASURED FROM THE GROUND LEVEL (h_W) in [m]																									
For 1 inspection hatch	0,60	0,50	0,80	0,40	0,40	0,40	0,70	0,70	0,70	0,70	0,70	0,70	0,70	1,00	1,00	1,00	1,10	1,10	1,10	1,10	1,30	1,30	1,30	1,30	1,30	1,30
For 2 inspection hatch	1,20	1,00	0,90	0,80	0,60	0,60	1,00	1,00	0,90	0,80	0,80	0,80	0,80	1,20	1,20	1,10	1,10	1,10	1,10	1,10	1,40	1,40	1,40	1,40	1,40	1,30
For 3 inspection hatch		1,20	1,10	0,90	0,80	0,70	1,20	1,10	1,10	1,00	1,00	0,90	0,80	1,30	1,20	1,20	1,20	1,10	1,10	1,10	1,40	1,40	1,40	1,40	1,40	1,30
For 4 inspection hatch		1,40	1,30	1,10	1,00	0,90	1,30	1,20	1,20	1,10	1,00	1,00	1,00	1,40	1,30	1,30	1,20	1,20	1,20	1,10	1,50	1,50	1,40	1,40	1,40	1,40
For 5 inspection hatch			1,40	1,20	1,10	1,00		1,30	1,20	1,20	1,10	1,00	1,00	1,40	1,40	1,30	1,30	1,20	1,20	1,20	1,50	1,50	1,50	1,50	1,40	1,40
For 6 inspection hatch				1,30	1,20	1,10		1,40	1,30	1,20	1,20	1,10	1,10		1,40	1,40	1,30	1,30	1,20	1,20	1,60	1,50	1,50	1,50	1,50	1,40

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Recommendations for earth works

- The sub-soil conditions should be assessed in order to determine any special precautionary work that may be necessary.
- Backfill material, if possible, the excavation soil, should be placed carefully and evenly around the tank. It should be applied in consecutive layers of 30 cm, each layer fully compacted before applying the next layer.

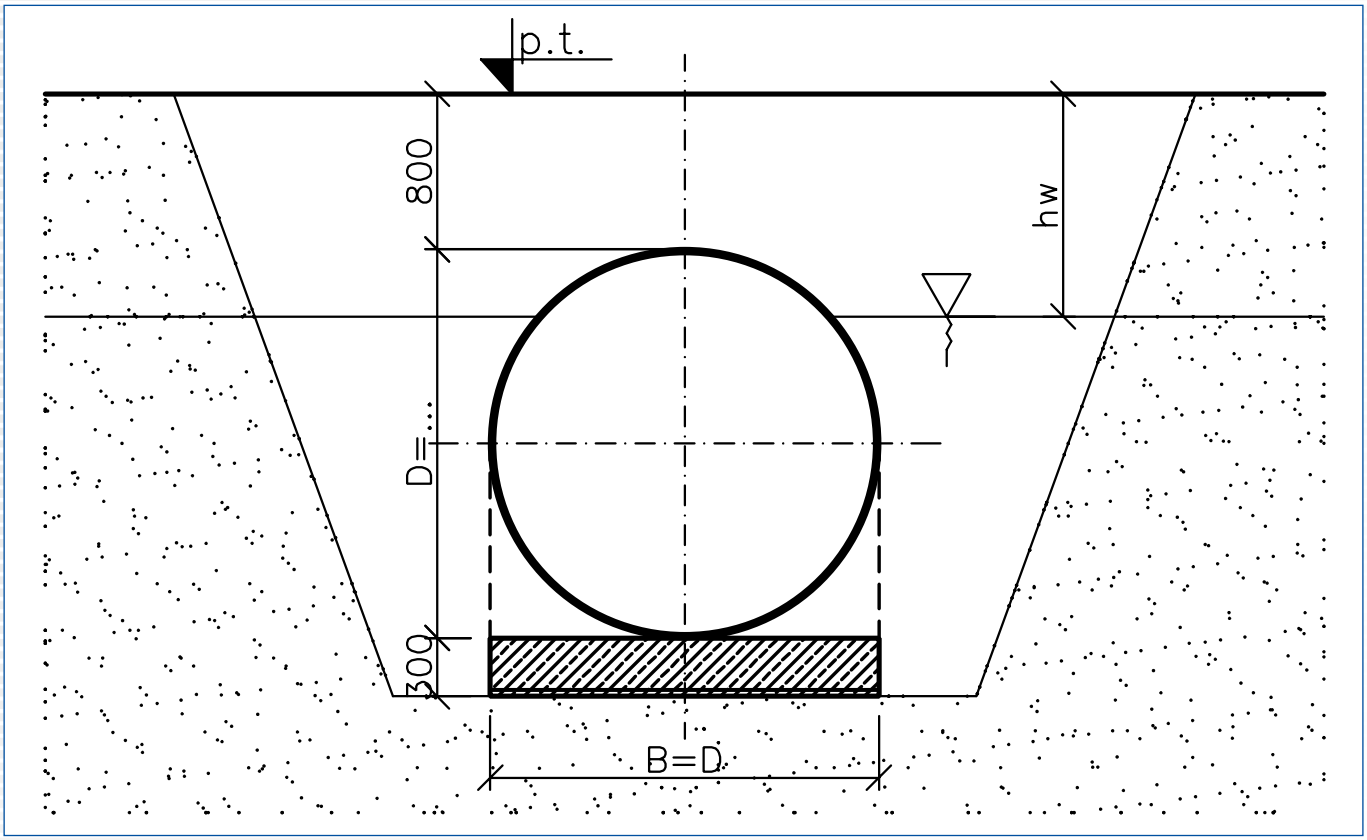
Remarks for concrete works

- Proper care of the concrete preparation at the construction site is very important to control shrinkage stresses. The concrete preparation method must be determined prior concreting the speed chassis.
- The concrete mix should be poured and compacted such as not to cause segregation. Compaction should be carried out continuously during pouring of each layer.

Assumptions for the calculations

- The base of the excavation should provide a firm continuous and level support for the tank.
- The tank must be backfilled with non-cohesive soil, laid in layers and compacted at assumed force of 18 kN/m³.
- To calculate the uplift force of the tank is the density of concrete the slab assumed 2200 kg/m³.
- The weights of tanks were taken from the technical sheets of CGH Polska.
- Tank burial depth assumes a 0,8 m cover layer
- Assumed strength class of the concrete for the anchoring slab is XC2. Concrete accepted for this strength class is C16/20 (B20). If more aggressive water than category XC2 appears underground, modify the composition and the brand of the concrete mix.
- hw – groundwater level

Tank burial diagram



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