SILO-TYPE WATER STORAGE TANKS

Product data sheet · Flexible tanks and reservoirs

Water storage tank with a wall of bolted steel panels, fitted with a flexible polypropylene liner and a protective felt. Diameters from 1.83 m to 30.18 m, heights from 0.76 m to 4.57 m, capacities from 2 m^3 to 2,000 m^3.



Technical data

Structure	Bolted steel panels
Liner	Flexible polypropylene (PP), UV-resistant; drinking water certification on request
Liner thicknesses	0.3 – 0.5 – 0.75 – 1.0 – 1.5 – 2.0 mm
Liner sizing	20% margin on the strength calculations
Protective felt	250 g/m^2 or 300 g/m^2, between the wall and the liner
Diameters	1.83 m to 30.18 m
Heights	0.76 m to 4.57 m

Description

Silo-type water storage tanks take up little ground area for a large stored volume. Their wall is made of steel panels assembled by bolting, which is quick to erect.

Inside, a watertight liner holds the water; it is manufactured to suit the liquid to be stored. A protective felt separates the liner from the metal structure, and a protection layer separates it from the ground.



Silo-type water storage tank



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Flexible polypropylene liner

The liner is made of flexible polypropylene (PP), a material suited to the manufacture of liners for water tanks: lightweight, with good mechanical and UV resistance. On request, it can be certified for drinking water. Its thickness is chosen to suit the project: 0.3, 0.5, 0.75, 1.0, 1.5 or 2.0 mm.

Each liner is sized from strength calculations, with a systematic 20% margin. All liners are tested and inspected at the factory.



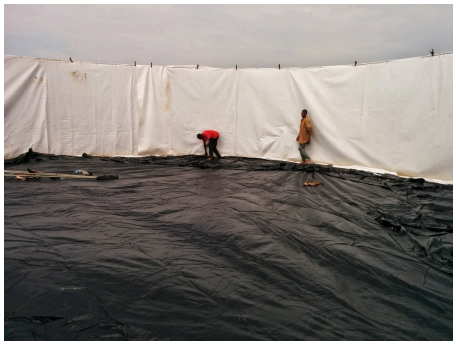
Factory inspection of the liners



Fitting the liner



Fitting the liner



Fitting the liner

Protective felt

A 250 g/m² or 300 g/m² protective felt is supplied for fitting between the steel structure and the liner. Clamps are supplied with the storage tank to make fitting easier. A ground protection layer is also supplied to separate the liner from the ground.



Protective felt

Tank connectors

The storage tanks can be fitted with tank connectors, both in the metal panels and in the floor. The liner sleeves welded to the liner can be:

- welded at the factory, according to a layout plan agreed with the customer;
- supplied for welding on site.



Tank connectors

Covering the storage tanks

Four covering solutions are available. The covers are made of UV-resistant technical fabric that lets rainwater through.

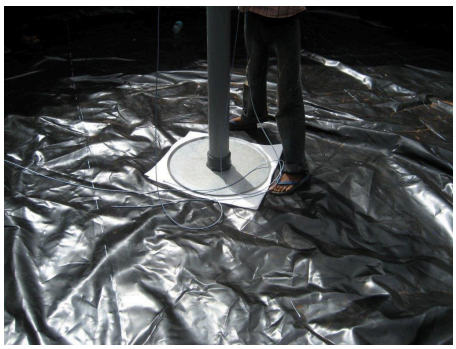
- tensioned cover, for small diameters;
- tensioned cover with centre pole, which prevents water pockets from forming during very heavy rain (see D04-SILO-FT-004);
- floating cover (see D04-SILO-FT-002);
- metal roof.



Example of a cover



Example of a cover



Example of a cover



Example of a cover



Example of a cover



Example of a cover

Dimensions

Capacity by diameter (rows) and height (columns) (Capacity, m^3)

Diameter	760	1520	2290	3050	3810	4570
1830	2	4	6	8	10	12
2740	4.5	9	13.5	18	22.5	27
3660	8	16	24	32	40	48
4570	12.5	25	37.5	50	62.6	75.1
5490	18	36	54.1	72.1	90.1	108.1
6400	24.5	49	73.6	98.1	122.6	147.1
7320	32	64.1	96.1	128.1	160.1	192.2
8230	40.5	81.1	121.6	162.2	202.7	243.2
9140	50	100.1	150.1	200.2	250.2	300.3
10,060	60.6	121.1	181.7	242.2	302.8	363.3
10,970	72.1	144.1	216.2	288.3	360.3	432.4
11,890	84.6	169.2	253.7	338.3	422.9	507.5
12,800	98.1	196.2	294.3	392.4	490.5	588.6
13,720	112.6	225.2	337.8	450.4	563	675.2
14,630	128.1	256.2	384.4	512.5	640.6	768.7
15,540	144.6	289.3	433.9	578.5	723.2	–
16,460	162.2	324.3	486.5	648.6	810.8	–
17,370	180.7	361.3	542	722.7	903.3	–
18,290	200.2	400.4	600.6	800.7	1000.9	–
19,200	220.7	441.4	662.1	882.8	–	–
20,120	242.2	484.5	726.7	968.9	–	–
21,030	264.7	529.5	794.2	1059	–	–
21,950	288.3	576.5	864.8	1153.1	–	–
22,860	312.8	625.6	938.4	1251.2	–	–
23,770	338.3	676.6	1014.9	1353.3	–	–
24,690	364.8	729.7	1094.5	–	–	–
25,600	392.4	784.7	1177.1	–	–	–

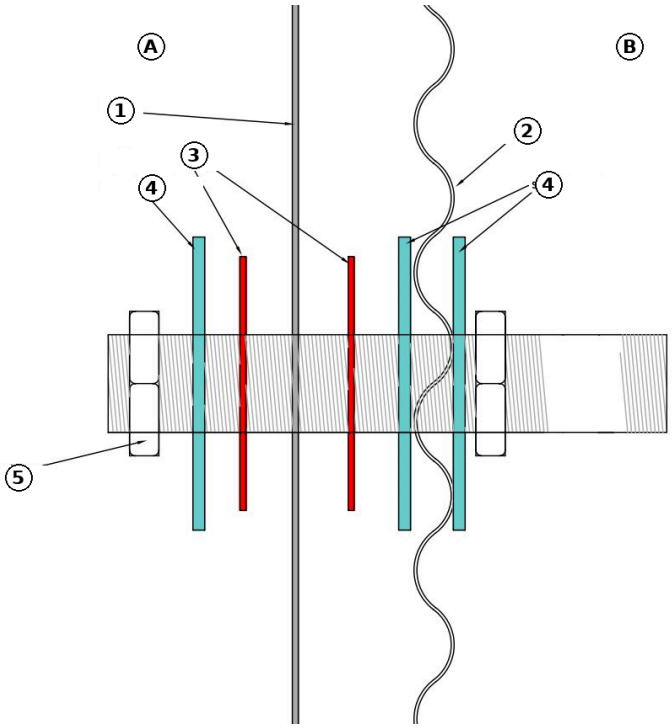
Diameter	760	1520	2290	3050	3810	4570
26,520	420.9	841.8	1262.7	–	–	–
27,430	450.4	900.8	1351.3	–	–	–
28,350	480.9	961.9	1442.8	–	–	–
29,260	512.5	1025	1537.4	–	–	–
30,180	544.7	1089.7	1634	–	–	–

Installation

The location, groundwork, foundation (concrete and sand according to the diameter of the storage tank) and complete erection of the storage tank are described in manual D04-SILO-MA-001.

Fitting a tank connector

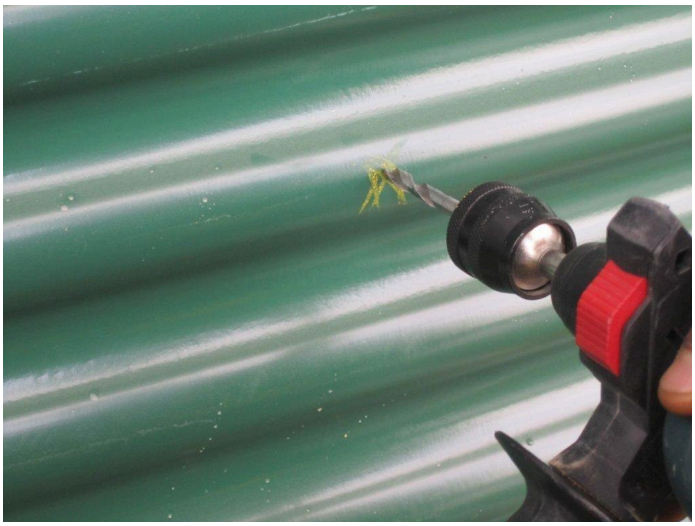
The tank connector is fitted while the storage tank is being installed on site, as shown in the drawing below.



Tank connector: cross-section

A and B: inside and outside of the storage tank.

1. Liner
2. Metal panel
3. Seals
4. Metal washers
5. Locknut



Fitting a tank connector



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Related documents : D04-SILO-FT-002, D04-SILO-FT-004, D04-SILO-MA-001