

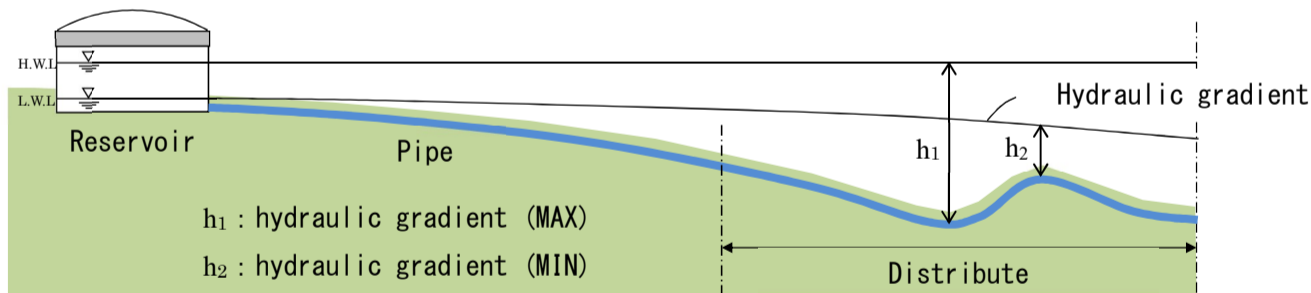
Proposal on introduction of PC tank

A rational and economical system can be built by including a Pre-stressed Concrete (it is hereafter written as PC) tank in a water distribution system. A PC tank is the structure which has a good track record for 50 years or more in Japan where is an earthquake-prone country, and it is rich in earthquake resistance and durability. In the previous Great East Japan Earthquake(2011), the outstanding earthquake resistance of the ground type PC tank was proved, and it was strong also to tsunami.

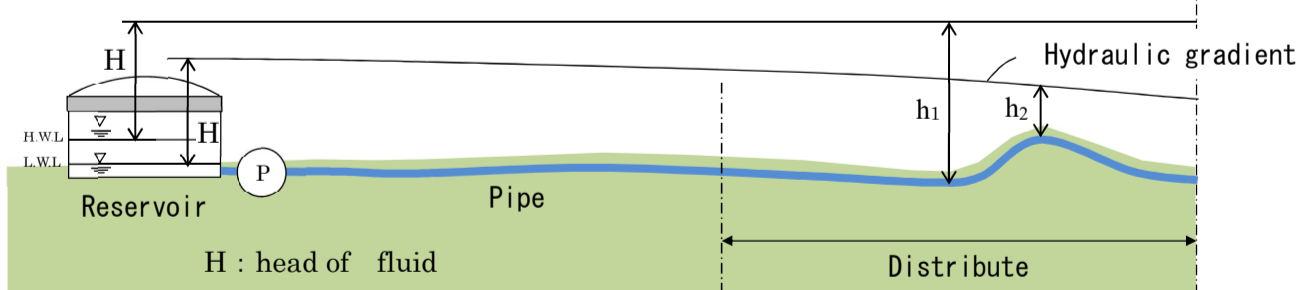
Benefits of service reservoir

- IF a service reservoir is installed in heights or flat grounds, water can be supplied under a nature style. And it can build the efficient system which requires low electric power used. Furthermore, since water can be supplied also in the time of power failure, it doesn't prevent the water supply or firefighting in an emergency.
- In pump pressure feed, pump capability can be suppressed by combining a ground type service reservoir. (It utilizes as an object for water pressure control of a distributing pump. Specifically a service reservoir is prepared near the end of a water pipe, it is made full of water at the night time of a water pressure rise, and water pressure change is lessened by supplying water to time with much amount of the daytime used from both a riverhead and a service reservoir.)

① Gravity flow



② Pumped distribution



Comparison of a water distribution system

Pioneer of the PC Technology



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Benefits of PC Tank

- PC tank is extremely strong. It withstood the earthquake and tsunami of the Great East Japan Earthquake 2011. (When a water service reservoir is built on a housing high density place or heights, if it collapses with disasters such as an earthquake, we will be anxious about a third party disaster, however the safety will be ensured if it is a strong PC tank.)



① PC tank installing in area intensity 7¹⁾
L : Complete view of PC tank (with no damage),
R : Crack in the surrounding ground

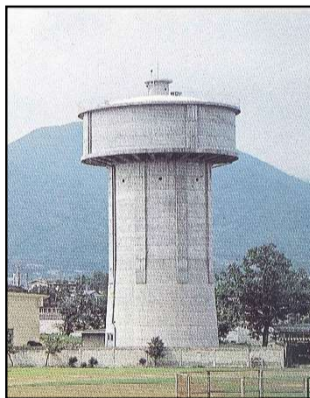


② PC tank affected by tsunami¹⁾
L : Street lights and telephone poles collapsed,
R : damages by a collision of overflow things

- PC tank is operable with minimum maintenance after built.
(PC tank for service life beyond 100 years)
- A cylinder type tank is rational form, and economical with few material used. And a tank which has a large capacity is more advantageous in initial cost.
- A cylinder type tank has the strong resistance over earth pressure, so it can be laid in underground.
- Various form and designs are made possible with ground type, elevated type, and etc.
(By making reservoir water level high, water can be stored in big capacity at few sites.)



③ Underground type



④ Elevated type



⑤ Mixed form with ground type and elevated type

Bibliography:

1)Japan Prestressed Concrete Institute, Higashi Nihon Daishinsai PC Kouzoubutsu Saigai Chousa Houkokusho (The research report for the Great East Japan Earthquake), 2011

