



“BioCapsule” Flowability

We examined how “BioCapsule” filled with “SunBreo” flows in actual sized tanks.

Test aeration tank size is 2m (Width), 0.9m (Length), 2m (Depth).

The tank is separated in 2 tanks, one aerated from the center of the tank and the other aerated from one end of the tank.

Please refer to Fig2, Drawing of the tank.



Fig1. BioCapsule

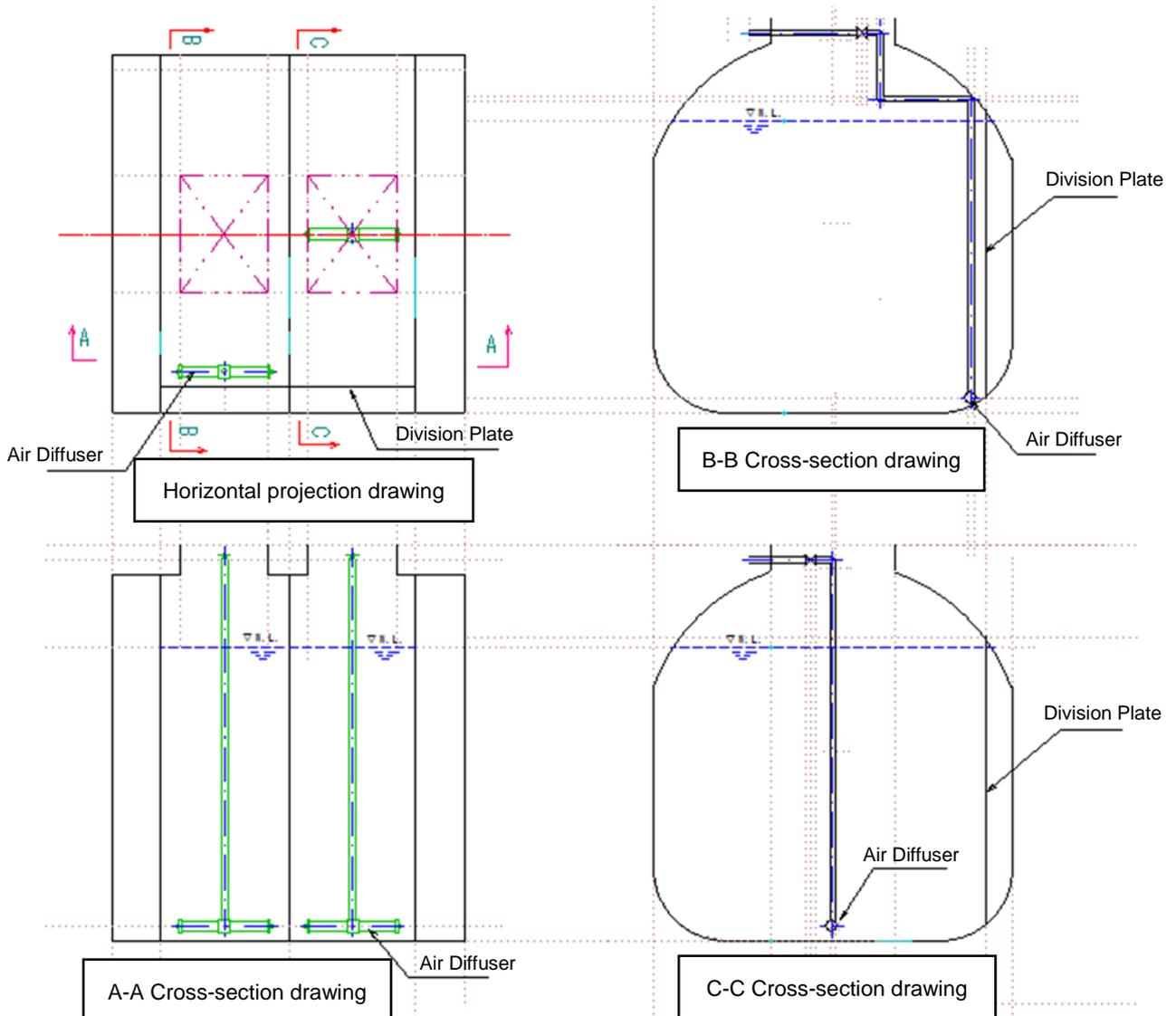


Fig2. Drawing of the tank



The test took place with an FRP aeration tank from Oct to Nov/2014.
 We started the test with tap water, however the BioCapsule did not flow.
 Then, we added sludge with the concentration of MLSS of 6,000mg/L.
 The BioCapsule flowed properly in both tanks. One with the center aeration tank and the other with the end aeration tank.
 We show the typical vector diagram in Fig3. The tank with the aeration diffuser set at the side of the tank.
 The BioCapsule flows well without any problems.

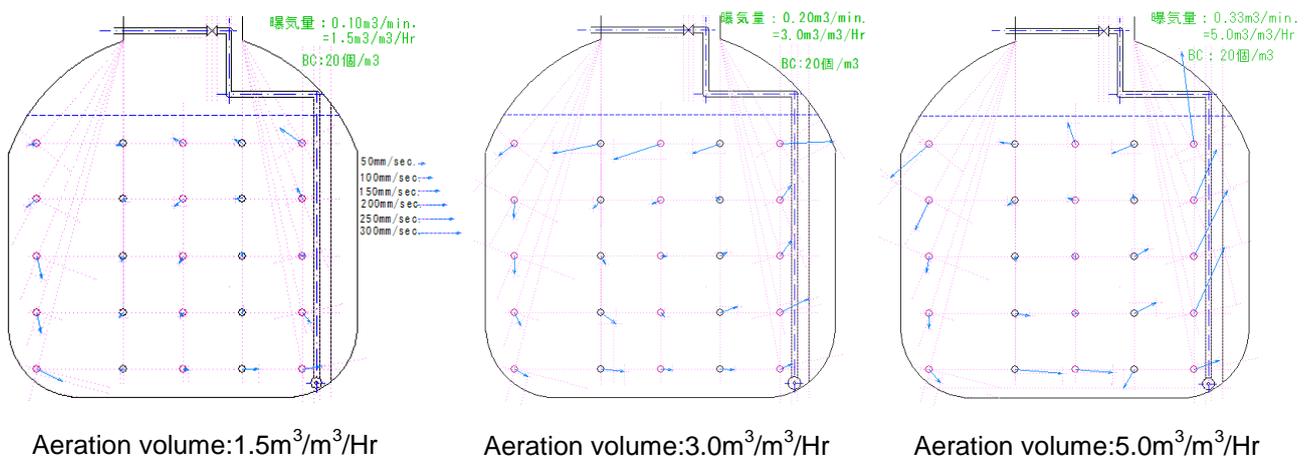


Fig3. Typical Vector diagrams in the tank (BioCapsule:20capsules/m³)

Aeration Volume of 1.5m³/m³/Hr is the standard volume for aeration tank of the activated sludge method. Flow rate of the water is slightly slow as the water holds 20 capsules /m³ compared with the flow rate of water only. Aeration volume 3.0m³/m³/Hr is the low standard volume when put the flowing bed. Vector diagram shows downwards near the water level is just because there was a capsule at that point. Aeration volume 5.0m³/m³/Hr is the strong aeration volume with the floating bed in tank. There is a vector diagram shows opposite side near the air diffuser at the bottom of the tank. This is also just because there was a capsule at that point.

We varied the numbers of capsules to 10 /m³, 15/m³ 25/m³ and 30/m³.

The flowing behavior of the capsules was almost same although we changed the numbers of capsules.. From the test result above, the BioCapsule flow well in the aeration tank of the activated sludge method without any problems.

Putting the capsules into the aeration tank does work for capacity increase.