

**MECHANICAL (C&W) DEPARTMENT**  
**SEALDAH DIVISION**

**SEALDAH BIO-TOILET EFFLUENT TESTING LABORATORY**



A bio-toilet effluent testing laboratory has been set up in coaching depot, Sealdah on 13/08/2014 to test the condition of effluent to ascertain the health of bio-digester tank. 4 out of 6 stipulated tests are being conducted. Result of test found within the prescribed range for all tanks.

Bio Toilet is a green initiative of Indian Railways and Sealdah division has successfully implemented and close to achieved the target of complete conversion of Bio-Toilet of its fleet of coaches within a few months.

**Bio digester tank Fitment**

Fitment of Bio digester tank in Sealdah division vide RB's contract for ICF coaches is almost at its end and for LHB coaches, it's going on.

LOA has been issued for other type of coaches like old design BEML and SLRs and work is about to start.

OCVs of Sealdah division (ART Coaches of SDAH & RHA) have also been converted to Bio Coaches.

**Modification**

As guided by Indian Railway modification of P-Trap to S-Trap has also been going on to ensure water column and natural water sealing for reducing bad/foul smell.

Venturi type ventilation system has also been implemented in most of the SDAH based coaches.

Provision of dustbin is provided in Bio-Toilet to collect garbage and reduce choking of pan.

## Maintenance

AMOC is awarded to M/S Banka Biolo Ltd. for maintenance of Bio toilet in SDAH division.

Evacuation Machines have been installed in both the coaching depots – SDAH & KOAA since March'2019 to facilitate the evacuation of non-biodegradable materials accumulated in the 1<sup>st</sup> chamber during IOH activity.

## Laboratory

Bio-Toilet Effluent testing laboratory has been developed Sealdah C&W Depot for in-house testing of the discharged waste-water as well as the effectiveness of Bio-toilet system. Out of 3 NOs. stipulated tests, 1 set done in in-house laboratory and other 2 tests done as a regular measure by AMAC Bio-toilet contractual work by M/s Banka Biolo Ltd.

- pH Value of the Effluent in respect of temperature. – Test by in-house.
- Chemical Oxygen Demand (COD) Test in the effluent. } Test by NABL approved Lab.
- Fecal Coliform Counts (FCC) Test in the effluent. }

## Awareness Programme

Awareness sticker is provided inside the Bio-Toilet regarding Do's and Don'ts from user end.

Video clipping has regularly been displaying in Originating station to aware passengers.

A vinyl display board regarding different aspects of Bio-Toilet is provided in NCC yard Sealdah for awareness of servicing railway/contractual staff.

## MODIFICATION OF BIO-TOILET ON BALL VALVE OPERATING MECHANISM



## Introduction of evacuation machine at Sealdah New Coaching Sickline

New trolley-mounted mobile evacuation machine for Sealdah New Coaching Sickline bio-toilets has a 2.2 KW motor and a PVC tank with dual chamber. The machine first sucks out everything from the bio-tank of the toilet, including the solid waste. While the first chamber of the machine collects the solid waste the inoculums is passed on to the second chamber through a filter. This is turn is pumped back into the bio-toilet. Not only is the evacuation of the bio-tank fully mechanized, but also there is no need to fill fresh inoculums in the toilet separately. Evacuated of 1st chamber of bio-tank have been done at both SDAH & KOAA Coaching Sickline.



## Conversion of “P-Trap to S-Trap” in Bio-Toilet system

P-Trap to S-Trap conversion of Bio-Toilet system is generally done with the help of Sick line infrastructure. To save from ineffectiveness of coaches, this conversion is carried out during maintenance at pit line also.



## **Performance of Bio-Toilet:**

### **Holding of Bio-Toilet Coaches:**

Type	Total Holding	Total Bio Tank fitted Coach	Remarks
ICF Coach	1043	1043	
LHB Coach	536	535	1 Coach booked to shop for Bio-Tank fittig.