

INDION® Fluidised Media Reactor (FMR)



The INDION Fluidised Media Reactor (FMR) is designed as a single tank unit, incorporating a bar screen chamber, specially developed synthetic media to facilitate attached growth process, oxygen transfer through diffused membrane aeration, a lamella settler and a chlorine contact tank for disinfection.

Process

In the INDION FMR, raw sewage enters at the top of the tank. In the aeration zone, air is introduced at the bottom of the tank through fine bubble diffusers. The media will be in suspension due to the turbulence created by the air. Bacteria required for oxidation of the organic matter are attached to the media and some suspended in the tank. After oxidation, the bacteria grow in number and need to be separated from the aeration tank liquor.

The lamella section inside the settling zone helps for clarification and separation of biomass (sludge) and clear water overflow into the chlorine contact tank. Lamella plates help in increasing the settling area and removing the particles effectively in a smaller plant area. In the chlorine contact tank, sodium hypochlorite (NaOCl) is added to disinfect the clarified sewage. Baffle plates are provided to increase contact time of treated sewage with chlorine.

Applications

The INDION FMR delivers treated water to meet local discharge norms and can be used as a decentralised compact sewage treatment plant for housing complexes, hotels, commercial complexes, industries and rural communities. The treated water can be used for gardening, toilet flushing & other low end applications.

Valves are used for sludge removal as well as MLSS (mother liquor suspended solids) adjustment. The chlorinated, treated sewage then flows out of the INDION FMR either for further treatment or for disposal.

Features

- Single tank design
- 1/3 space of conventional sewage treatment plant
- Uses high porosity moving media for bacteria to grow
- Useful for modification/capacity extension of existing sewage treatment plants

Advantages

- Minimum land usage
- Minimum power & chemical requirement
- Low operating cost



Treated Water Quality (Domestic Effluent)

	After INDION FMR	After Tertiary Treatment (Optional)
BOD	30 ppm	5 ppm
COD	100 ppm	20 ppm
Total suspended	< 30 ppm	< 5 ppm
Oil & grease	<10 ppm	<10 ppm

The INDION FMR is also suitable for industrial effluents. Piloting may be required to establish sizing and to obtain the treated water characteristics.

Technical Data

Model	Capacity m ³ /day	Dimensions (in m)	Material of Construction
FMR 100	100	6.3 x 2.5	MS/FRP
FMR 150	150	8.7 x 2.5	MS/FRP
FMR 200	200	11.35 x 2.5	MS/FRP
FMR 300	300	9.1 x 4	Civil
FMR 400	400	10.5 x 5	Civil
FMR 500	500	12.6 x 6	Civil
FMR 750	750	12.3 x 8.5	Civil
FMR 1000	1000	12.8 x 10.5	Civil
FMR 1500	1500	21.5 x 10.5	Civil
FMR 2000	2000	28 x 10.5	Civil
FMR 3000	3000	41 x 10.5	Civil
FMR 4000	4000	55 x 10.5	Civil
FMR 5000	5000	67 x 10.5	Civil

Side water depth (SWD): 1.9 m for FMR 100, FMR 150, FMR 200, 2.9 m for FMR 300 & onwards

Note: can be customised for higher capacities.

To the best of our knowledge the information contained in this publication is accurate. Ion Exchange (India) Ltd. maintains a policy of continuous development and reserves the right to amend the information given herein without notice. Please contact our Regional Offices for current product specifications.

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