METSI ENVIRO TECH PVT LTD

Innovative Technological Environmental Solutions

CLAIRE FONTAINE®

Innovative Treatment of Waste Water

MBBR Systems

Established Design Protocol

Introduction

Claire Fontaine's biofilm technology can be an excellent solution, either as a stand-alone process or to specifically enhance or upgrade treatment at existing activated sludge systems. The expandable modular systems are simple to operate and are the answer for operational challenges. Claire Fontaine's MBBR technology can also be designed to include preliminary treatment stages or combined into hybrid stages.

Advantages

- BOD / COD Reduction
- Nitrification (Total Nitrogen & Phosphorus Removal)
- Small foot print
- High Loading Conditions
- Single pass treatment
- No recycling
- Biology self-regulating (No need to monitor MLSS)
- No operator adjustments for process or running the plant
- Effectively Handles Peak Flows & upset loads
- Low 20 year life cycle cost
- Quick and easy setup

Media

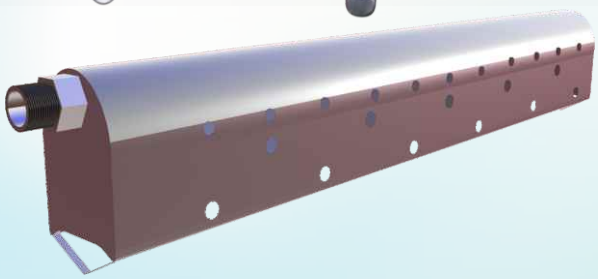
Media provides two important functions:

- The protected internal surface area allows biofilm to attach while supporting either the heterotroph / autotroph bacteria.
- The millions of pieces of media act as a shearing device on the course air bubble to maximize oxygen transfer.

Aeration Grid & Sieves

A stainless steel coarse bubble aeration system is employed to mix the suspended media evenly throughout the reactor, while provided the mixing energy required to slough old biofilm from the internal surface area of the media. It maintains the dissolved oxygen required to support the biological treatment process.

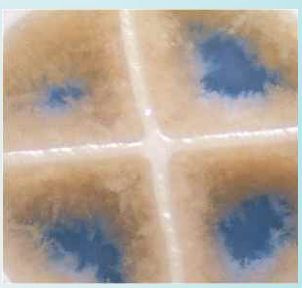
Stainless steel wedge wire sieves retain the cultivated biofilm / media in a process-designated reactor while allowing the treated wastewater and sloughed biofilm to flow through to the next treatment phase.



Applications

- Municipal
- Industrial
- Marine
- Food & Beverage
- Pulp & Paper

Surface area 500m2/m3



Biological Growth on Media

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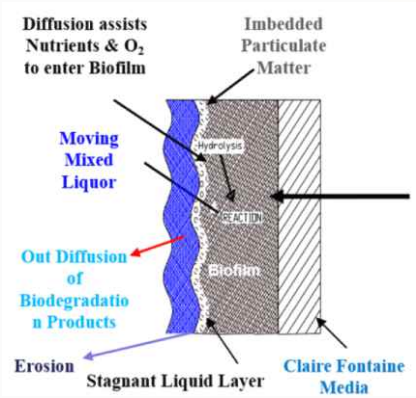
Media Design

- The protected surface areas openings inside the media should be large enough so that oxygen, contaminants, nutrients, and bacteria can all easily flow through the media. This will affect treatment efficiency.
- The thickness of the walls should be strong enough to withstand collisions with the walls of the reactor, any mechanical devices (ie:mixers), and even between the media pieces themselves.
- The external dimensions of the media should be approximately equal to minimize any fluid dynamic drag of the media while floating.

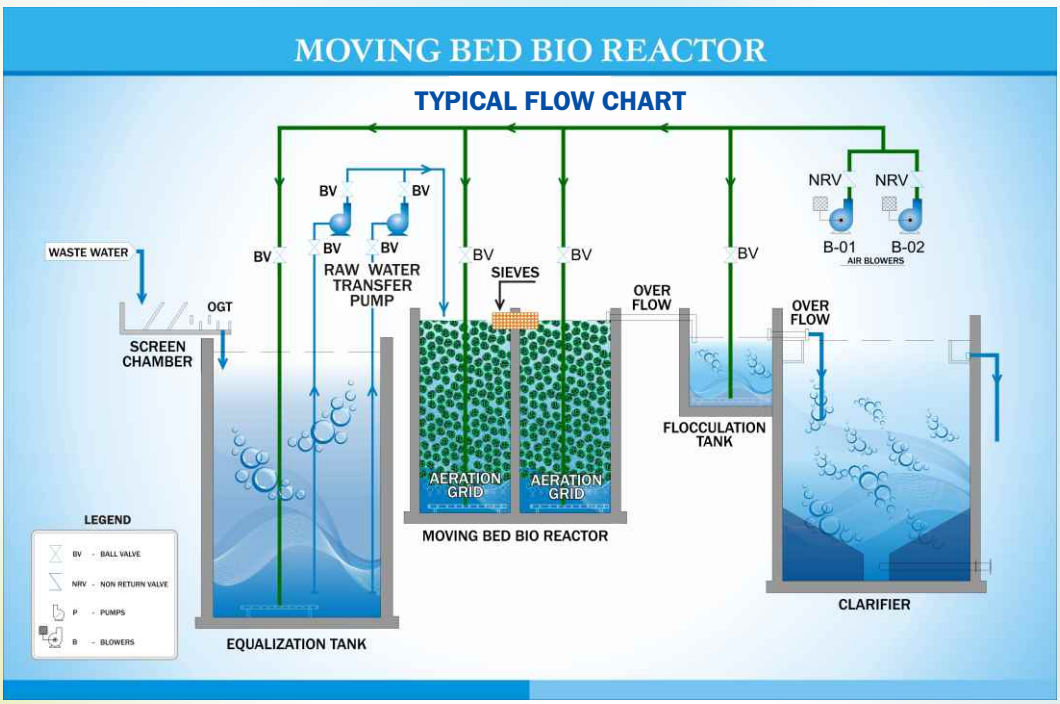


Technical Specifications

Sl.#	Property	Value
1	Tensile Strength	Min 3190PSI
2	Density	Min 0.94 gms/cc
3	Vicat Softening Temperature	Min 123 Deg Celsius
4	IZOD Impact Strength	Min 36 J/M
5	Flexural Modulus	Min 101500 PSI
6	Tensile Elongation	Min 12%
7	Temperature With standing	80 Deg Centigrade
8	Material Characteristics	100% Virgin HDPE
9	UV Resistant	With UV Stabilizer

Model	Dia Meter	Height	Protected Surface Area
CF 500	25 mm	9 mm	500 m2/m3

Standard Tolerance of + 2.5 % on all outside dimensions and +/- 0.02mm on thickness



Advantages of Polyethylene

- Polyethylene is inert, translucent and creates a lower static charge than polypropylene.
- Translucent nature of polyethylene prohibits the greater amount of light which is harmful to plastics.
- Polyethylene is soft and pliable.
- Ethylene is the purest form of the base chemical.
- The ethylene base provides more "give" and thus stronger seams and less likelihood of tearing.
- Polyethylene costs more as it is a product of higher purity (100% Virgin).
- Polyethylene is inert and polypropylene can be reactive.

No. 120/30, C-2, 2nd Cross, Hennur,
Bangalore - 560 043, India.
T : +91 90609 88475 E sales@metsiet.com

New No. 9/ Old No. 2B, DKR Street,
Off. Poonamallee Road, Chennai - 600 032, India.
E : admn@metsiet.com.

CIN Number:
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www.metsiet.com