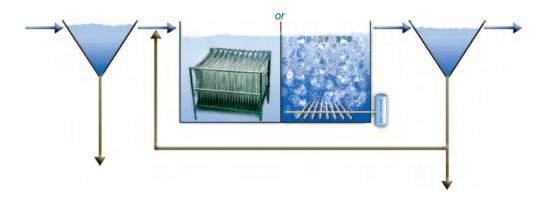


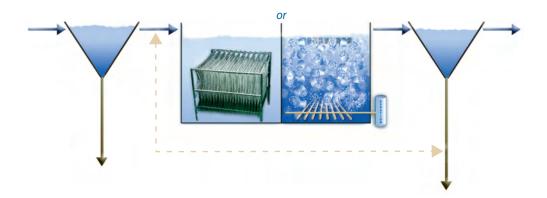
Integrated Fixed-Film Activated Sludge

IFAS blends the process flexibility and advanced treatment benefits of activated sludge with the inherent stability and ease of operation of attached growth film systems, increasing capacity and/or level of treatment. Adding attached growth media to a suspended growth reactor provides additional stabilized biomass for increased treatment without increasing the clarifier solids loading. Media can be added to either aerobic or anoxic zones for kinetic optimization resulting in less tankage.



Submerged Fixed-Film

SFF eliminates the need for clarifier solids inventory management while providing high rate treatment. The key difference from IFAS is the lack of a return activated sludge line, eliminating the suspended growth biomass.





Engineering a Clean Water Environment

IFAS Features

- attached growth and suspended biomass
- maximizes biomass
 concentration
- excellent settling
 characteristics
- minimizes tankages

SFF Features

- attached growth biomass only
- tends to have pin floc
- enables pre-treatment
 without clarifier
- works well in combination
 with DAF

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Which Technology is right for you? continued

Fixed vs Moving Media—

Choosing the system that's right for you includes unique considerations such as space, budget, recent regulations and other factors.

The ENTEX experts can give you an unbiased assessment. Let us fit you with the system that is right for you.

Fixed Media & Moving Media: Compare & Contrast

Fixed Media



Design Considerations

- easy, quick and inexpensive installation
- simple expansion with addition of modules
- can use fine bubble diffusers, existing aeration systems
- Webitat may be required to control redworms
- no in-basin screens required
- headworks requirements less stringent
- capable of doubling effective biomass concentrations
- enhanced aeration turndown with Webitat



Design Considerations

- high rate biokinetics; best if maximum capacity required
- some expansion possible—to as much as 67% fill
- media not subject to predators
- extensive basin modifications required
- typically requires coarse bubble diffusers
- care must be taken to limit media washout
- limited aeration turndown capacity
- finer influent screening required

Advanced Systems. Proven Solutions.

ENTEX engineers have been involved in hundreds of plant installations. We'd like to be involved in yours.

