

WATER AND PROCESS WATER TREATMENT



Actifloc™ AFP Complete Package Plants

Designed for drinking water and industrial process water



JOHN MEUNIER

ACTIFLOC™ AFP PACKAGE PLANTS

The Actifloc™ package plants are engineered to provide compact modular systems in response to an ever-growing demand for high performance water treatment process with practical dimensions and affordable budget.

These package plants are compact and thus ideal for sites with space limitations. They are designed to offer easy access to all components, allowing efficient maintenance and inspection routines.

KEY FEATURES

- **Combining solutions**

The **Actifloc™** package plants are complete modular **Actiflo®** clarifiers with scraper in the settling zone and **Dusenflo®** Mixed Bed Filters in a single tank. The result is a highly polyvalent and stable process system, designed to treat a wide variety of raw water.

- **High efficiency**

By efficiently removing turbidity, color, suspended solids, metals, TOC, taste and odor, the **Actifloc™** insures that the water produced is of the highest quality. Though the system is extremely compact, it nevertheless offers capacity and performances comparable to much larger systems.

- **Savings**

The extremely high efficiency of the **Actiflo®** ballasted flocculation technology allows the **Actifloc™** to operate on settling rates of 40 m/h or more (16 gpm/sf). The addition of **Dusenflo®** mixed bed filters designed especially to operate with **Actiflo®** at rates of 10 m/h or more (4 gpm/sf) insures maximum water quality while maintaining long filtration cycle times. Since the **Actifloc™** remains extremely compact and competitively priced, civil engineering costs are, as a result, greatly reduced.

- **Process stability**

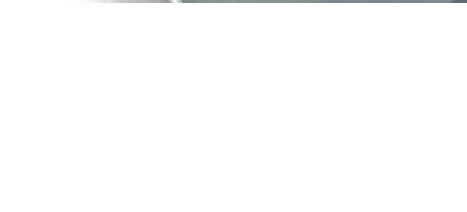
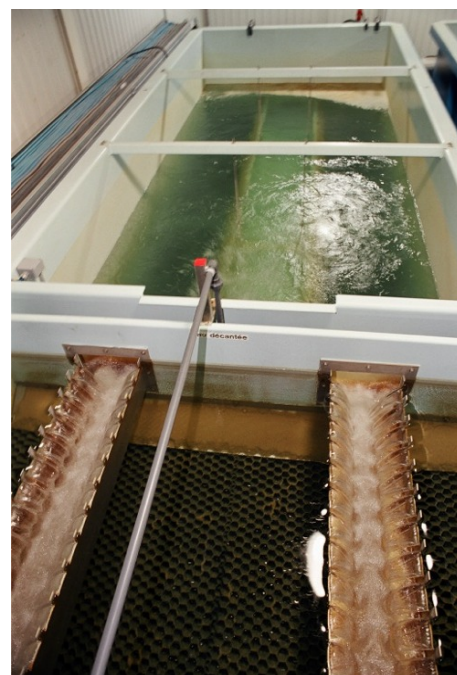
The **Actifloc™** consistently produces high quality water even under rapid variation of raw water conditions either on flow-rates, turbidity or temperature.

- **Very short startup time**

The **Actifloc™** reaches steady operational state extremely fast (usually less than 20 minutes). This is based on the very short retention time of the **Actiflo®** process, leading both to startup in a single retention time period and a response to raw water condition changes in a heart beat by chemical dosage adjustment loops. Operating the unit in a start-stop mode can then be considered and becomes a major energy and money saving strategy.

- **Reduce operating costs**

The **Actifloc™** operation can lead to important chemical consumption savings. Efficient air and water filter backwash, and specially designed mixed media and nozzle under drain arrangement, provide for extended filtration cycles and reduced backwash. This leads to important energy savings and increased water production.



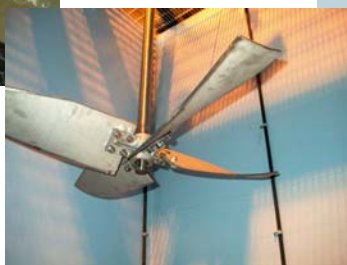
HOW DOES IT WORK

ACTIFLOC™ High Rate Clarifier and Mixed Media Filter Package Plant

The **Actifloc™** relies on the revolutionary **Actiflo®** HRC technology and the reliable and proven **Dusenflo®** Mixed Media filter. The **Actiflo®** design encloses coagulation, injection and maturation stages, followed by a highly compact settling area. The dosage of chemicals and microsand and a lamellar settling process, all contribute in providing a high performance and reliable water treatment system. The **Actiflo®** also includes a very efficient microsand recirculation system, leading to completely stable system conditions. The **Dusenflo®** design is derived from classic false floor and nozzle arrangement holding a mixed media filter bed. The combination has been engineered, tested and optimized to maintain high quality service and long filtration cycles facing high chemical residuals from the **Actiflo®** process. For this reason, **Dusenflo®**'s filter bed composition and grain size is completely revised from standards and adjusted to the application, while the nozzle arrangement provides for ideal backwash conditions required. As an alternate, the **Dusenflo®** can also receive a single sand layer or single activated carbon layer depending on application. All these configurations are engineered, designed and tested to operate at prime efficiency with the **Actiflo®** system.



Actifloc™ package plant features and parts



- **Water coagulation**

Coagulant is injected in the raw water upstream from the unit. The water then enters a rapid mix tank to destabilize colloidal matters.

- **Flocculation**

Polymer and microsand is injected to the coagulated water. Microsand is used to weigh down the flocs. A moderate mixing accelerates the polymer bridges formation between pin flocs, suspended solids and microsand leading to larger and heavier flocs.

- **High-rate settling and Mixed Bed filtration**

Heavy flocs ballasted by microsand settle quickly under the lamella tubes down to the scraped bottom. Clarified water is collected in surface troughs. Mixed bed filtration follows, leaving the unit for disinfection, if required.

- **Microsand recirculation**

The settled sludge is continually pumped to a hydrocyclone, where sand and sludge are efficiently separated. The hydrocyclone recycles the microsand back into the injection tank and discharges the sludge throughout the process.

OPERATION AND CONTROL

The **Actifloc™** package plants come complete with all necessary monitoring equipment, including a control panel and Human Machine Interface. Also, field instrumentation is either included or offered as an option.

MODELS

- The **Actifloc™** units are manufactured in our plant and delivered pre-assembled.
- For increased treatment capacity, these units may be installed in parallel.



<i>Single Train Models*</i>	<i>Capacity at 40 m/h (16 gpm/sf)</i>	
	m ³ /h	MGD
AFP-150R	1000	0.25
AFP-300R	2000	0.5
AFP-450R	4000	1.0
AFP-550R	6000	1.5
AFP-600R	8000	2.0

Notes: Other units are available upon request.

No redundancy rule can apply with a Single Train **Actifloc™** Use

Two Trains or separate DUS filters with a single **Actiflo®** unit

Filter surface load can be 9 m/h, 10 m/h or 12,5 m/h (3.6 gpm/sf, 4 gpm/sf or 5 gpm/sf)

<i>Two Train Models*</i>	<i>Capacity at 40 m/h (16 gpm/sf)</i>	
	m ³ /h	MGD
2 x AFP-150R	2000	0.5
2 x AFP-300R	4000	1.0
2 x AFP-450R	8000	2.0
2 x AFP-550R	12000	3.0
2 x AFP-600R	16000	4.0

Notes: Other units are available upon request

Please validate if filter redundancy rules apply. If so, divide flows by 2

Filter surface load can be 9 m/h, 10 m/h or 12,5 m/h (3.6 gpm/sf, 4 gpm/sf or 5 gpm/sf)

- Different options are also available to complete the package.
- Manufacturing, delivery, installation and start-up are carried-out promptly.

MOBILE PILOT PLANT

After years of experience, know-how development and a vast installation reference basis and pilot plant testing results, John Meunier can precisely pinpoint the best treatment type suited for your application. Mobile pilot units are available to provide on-site validation of the **Actifloc™** treatment efficiency.

JOHN MEUNIER

Head Office

4105 Sartelon

Saint-Laurent (Quebec) Canada H4S 2B3

Tel.: 514-334-7230 www.johnmeunier.com

Fax: 514-334-5070 sales@johnmeunier.com

Ontario Office

2000 Argenta Road, Plaza 4, Unit 430

Mississauga (Ontario) Canada L5N 1W1

Tel.: 905-286-4846 www.johnmeunier.com

Fax: 905-286-0488 ontario@johnmeunier.com