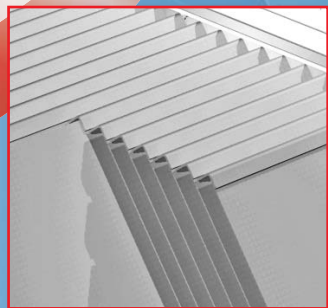


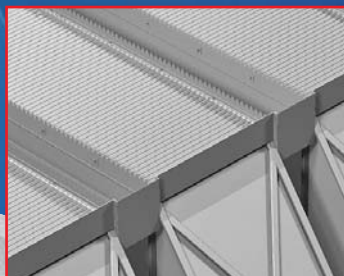


PLATE SETTLER SYSTEMS

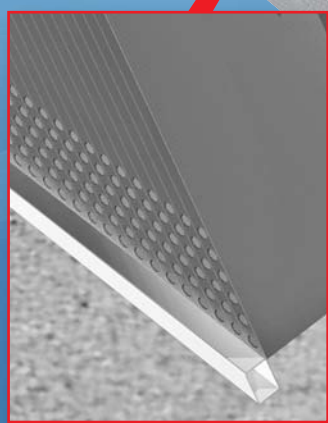
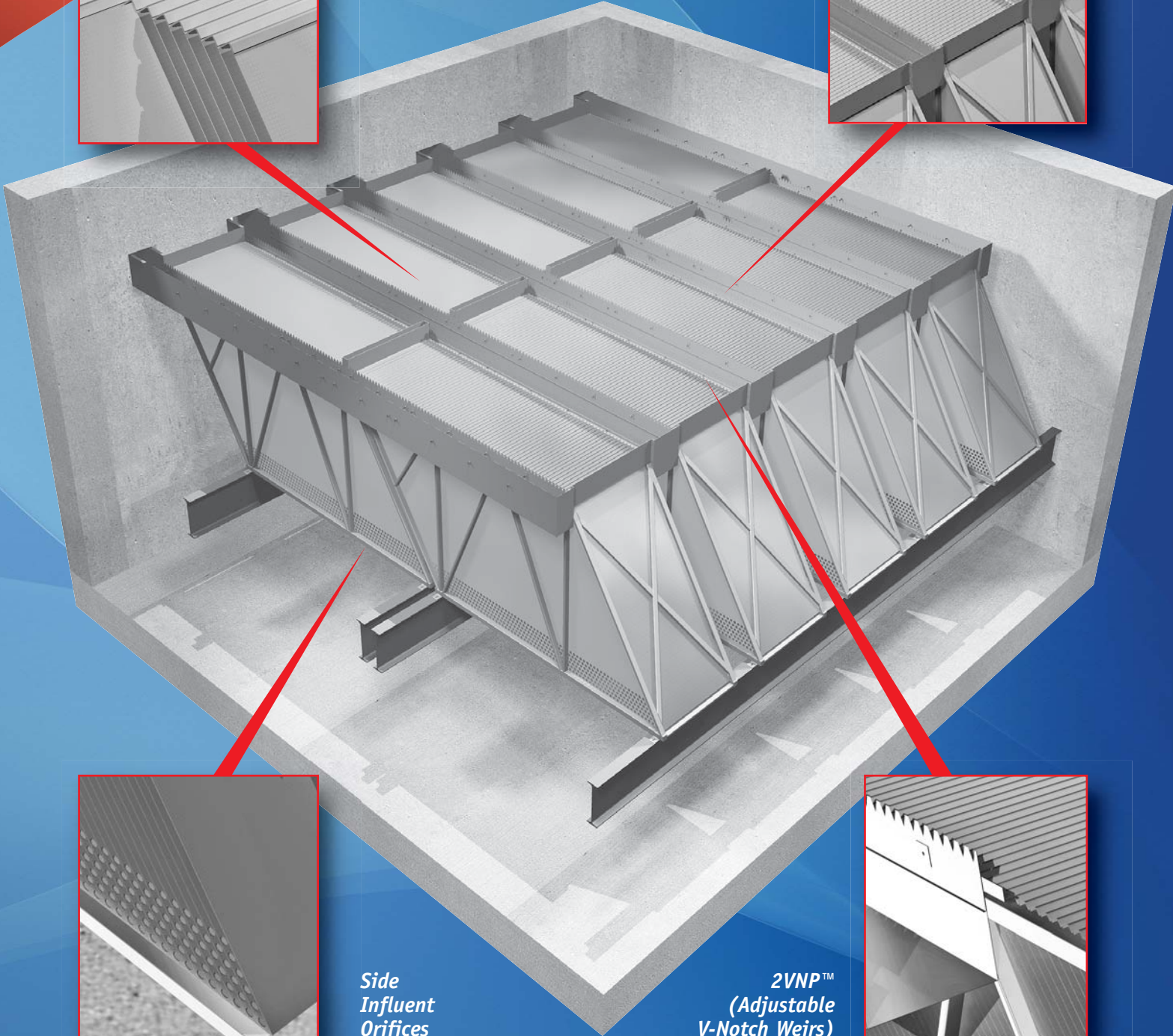
Advanced Design ... Highest-Performance ... 100% Stainless Steel



*TFCA™
(Top Flow
Control Angle)*



*Dual
Side-Loaded
Troughs*



*Side
Influent
Orifices*

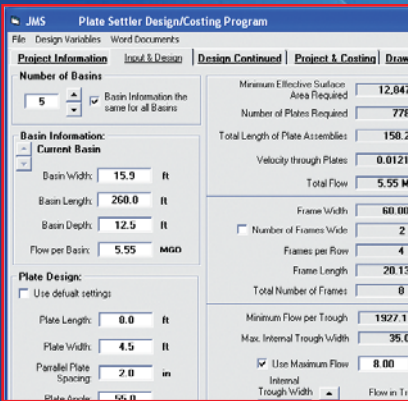


*2VNP™
(Adjustable
V-Notch Weirs)*



In 1962, Jim Myers & Sons, Inc. was founded to serve the steel fabrication needs of the municipal water and wastewater industries in the Carolinas. Today, JMS is a nationally-recognized, full-service leader in water and wastewater equipment and systems:

All the equipment we design and the systems we build are developed in-house by our staff of professional engineers and designers, utilizing the latest AutoCAD, 3-D modeling, and FEA/CFD technologies, along with our own proprietary design software (below).



True to our roots, all fabrication, manufacturing, machining, and testing is still expertly performed at our 50,000 ft² Charlotte facility.



Under the guidance of our experienced site supervisors, JMS systems have been efficiently and successfully installed in plants all across America and internationally, as well.

PLATE SETTLER SYSTEMS

Theory

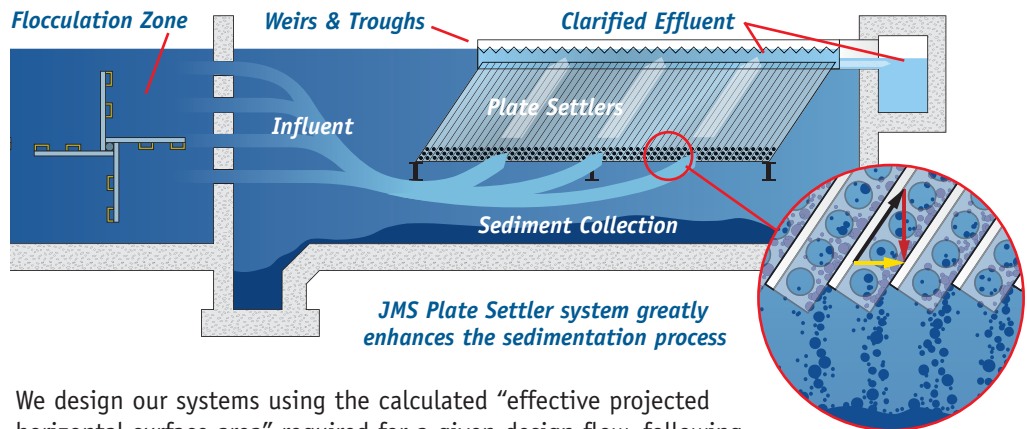
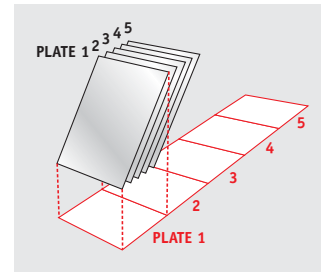
In 1904, sanitary engineering pioneer Allen Hazen of the Lawrence (Massachusetts) Experiment Station proposed that sedimentation is a function of basin surface area and is independent of detention time. The fundamentals of Hazen's theory are the basis for Stoke's Law, which is a mainstay of sedimentation design to this day.

Design

The plate settler was born when early engineers added diagonal steel plates into an open sedimentation basin, significantly increasing the "effective projected horizontal surface area" of the basin (right).

The advanced, stainless steel plate settler systems now available from JMS (below) can be designed for any basin geometry and sludge collection system, can reduce the footprint of a conventional sedimentation basin by as much as 90%, and can significantly increase the treatment capacity and improve effluent quality of existing basins.

Effective Projected Horizontal Surface Area



JMS Plate Settler system greatly enhances the sedimentation process

We design our systems using the calculated "effective projected horizontal surface area" required for a given design flow, following "Ten States Standards" guidelines for the maximum allowable application rate and efficiency (below). But, there are many other considerations to be addressed when optimizing a plate settler system for a particular plant ... and JMS has developed state-of-the-art design software that allows our engineers to include all of these variables and simultaneously develop multiple designs as they search for the best possible solution as quickly and accurately as possible (left).

Although the century-old concept remains the same, the increasing need for more water treatment in less space has spurred dramatic improvements in the performance, efficiency, and cost-effectiveness of plate settler systems. Compared to similar-output sedimentation basins without plate settlers, a JMS plate settler system requires a much smaller footprint, performs consistently better, is more reliable, and even costs less when all capital, construction, and operational costs are factored in over the life of the system.

TYPICAL APPLICATION RATES AND EFFICIENCIES		
Application Rate*	Efficiency**	Equiv. Surface Loading Rate***
0.25	90%	6.35
0.30	80%	6.75
0.30	90%	7.59
0.35	80%	7.82
0.35	90%	8.88
0.40	80%	8.98

*gpm/sf of effective projected horizontal surface area

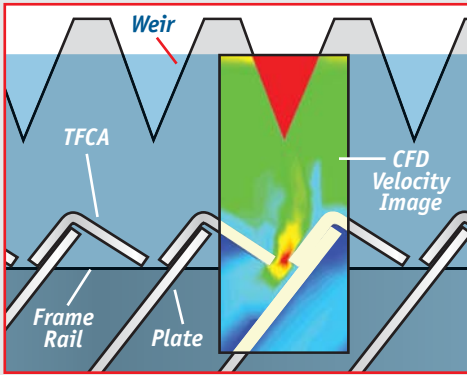
**% of total projected horizontal surface area used in the design

***gpm/sf within the actual plate settler "plan view" surface area

Blue highlight indicates most commonly specified design application rate & efficiency

JMS Plate Settler Systems

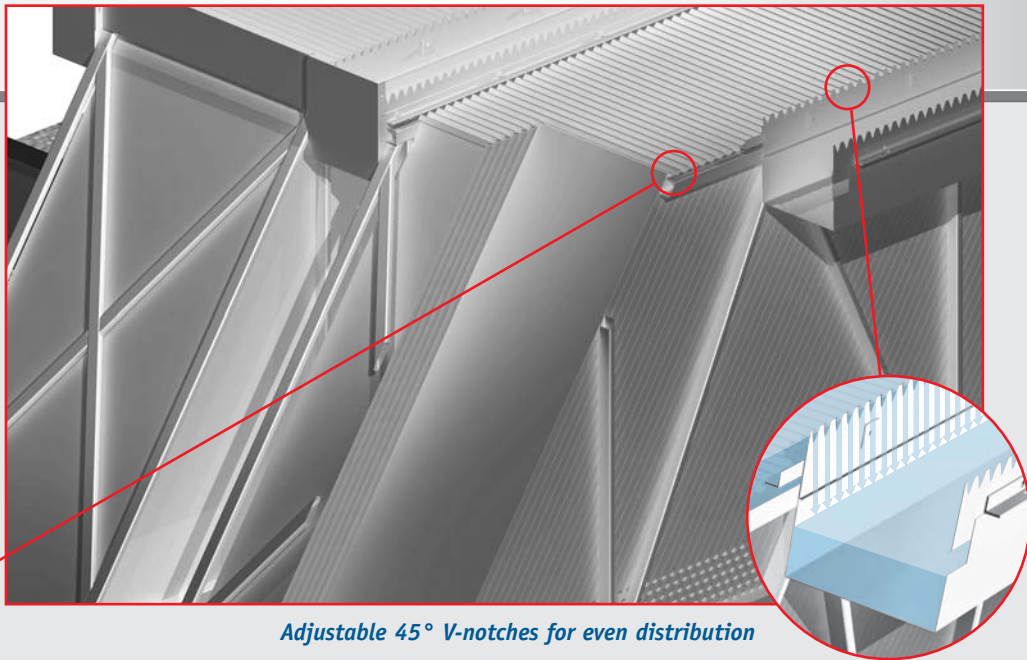
Highly efficient, easy to maintain, economical, and built for a lifetime of service, these 100% stainless steel systems are designed and constructed by JMS professionals with decades of experience in the sedimentation and flocculation industry. Our reputation for the highest-quality fabrication is recognized throughout America and our designs are the culmination of the advancements in plate settler technology history ... plus our own innovations and enhancements:



TFCA™ (Top Flow Control Angle)

This JMS feature (patent pending) controls headloss issues that other designs do not address or cannot because of design geometries; solves clogging problems associated with top tube & orifice designs; and prevents the longevity issues of plates that are exposed at the water/air interface:

- Provides critical, specific headloss control for even laminar flow across entire surface of plate.
- Allows for controlled linear flow to exit ... to minimize/prevent clogging.
- Allows operators to walk on top of plates for routine wash-downs & service.
- Protects stainless steel plates from physical damage.
- Provides 95% UV protection impeding algae growth.
- Minimizes localized thermo-velocity currents to reduce turbidity excursions.
- Geometry & orientation reduces residual settling outside settling zone.
- Plates are not exposed at the air/water interface, which eliminates localized corrosion.

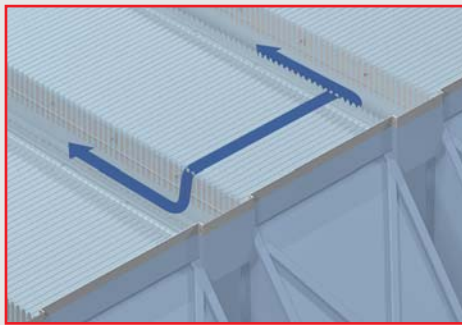


Adjustable 45° V-notches for even distribution

Dual Side-Loaded Effluent Troughs

Plate settlers with a single trough over the plates have some inherent weaknesses (reduced visibility of and access to the plates, as well as velocity accumulations and imbalanced flow from the plates to the troughs). Our dual-sided troughs solve these problems:

- Minimizes distance settled water travels to trough ... to control velocity accumulations that imbalance flow across plates.
- Provides unobstructed view of and access to top of system.
- Our Troughs, Weirs, and Baffles are 316 Stainless for added corrosion protection.



Balanced effluent flow

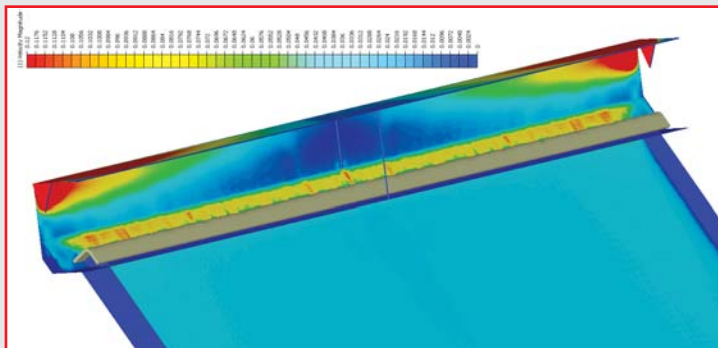
2VNP™ (Adjustable V-Notch Weirs)

Top tube and orifice-type plate settler systems are limited by the available flow area within the tube. When plant flow increases, velocity accumulations increase exponentially, causing different head pressures at each orifice that imbalance the system. The JMS 2VNP (2 V-Notches per Plate) Adjustable Weirs automatically fine-tune water elevations to accommodate fluctuations in plant flow, further promoting even flow in the system:

- Two 45° V-notch weirs per plate for even flow distribution across plates.
- 45° angle minimizes mal-distribution along length of trough.
- Adjustability allows for precise leveling of system based on changes in plant flow ... to maintain even flow across all plates.

Testing

Every JMS design, a combination of all of these features, is thoroughly tested in virtual and real-world conditions to insure that our plate settler systems perform at the highly-efficient level that makes ours the best on the market today.



CFD image of JMS plate and Top Flow Control Angles shows even distribution across entire settling area and controlled velocity increase at exit point.

WATER TREATMENT EQUIPMENT

- Plate Settlers
- Horizontal Flocculators
- Vertical Flocculators
- Walking Beam Flocculators
- Troughs
- Skimming Equipment (Paddle Wheel & Helical)

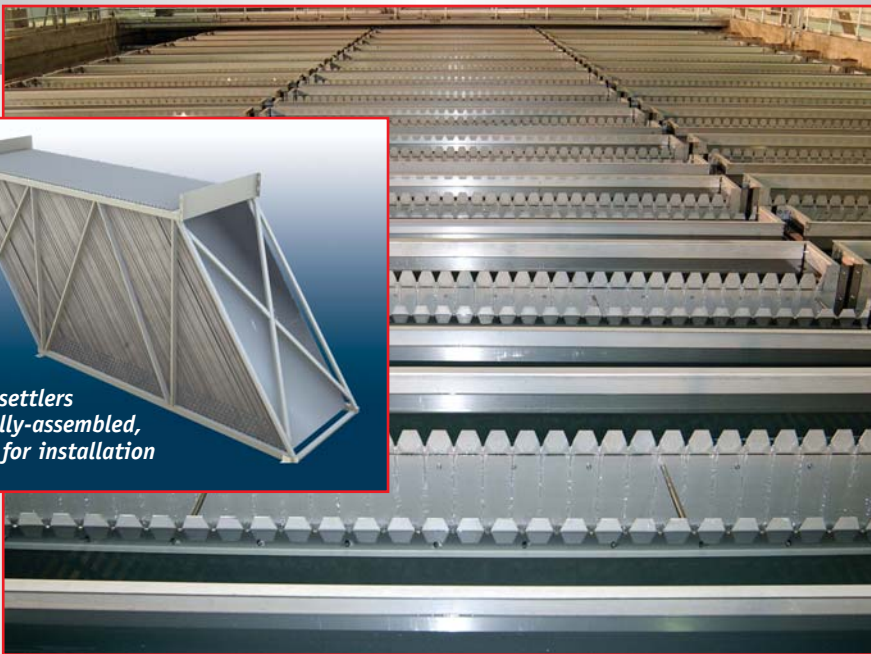
WASTEWATER TREATMENT EQUIPMENT

MATERIAL HANDLING

- Belt Conveyors
- Screw Conveyors
- Storage Hoppers, Bins, Silos
- Live Bottom Feeders
- Slide Gates & Diverter Valves

SEPARATION SYSTEMS

- Grit Classifiers
- Screening Compactors
- Scum Pipes
- Level Control/Decanters
- Airlift Pumps



JMS
plate settlers
are fully-assembled,
ready for installation

Success Stories

JMS plate settler systems can be found all across America, in drinking water plants like the 320 MGD Detroit Waterworks Park facility (above), which is recognized as the "Largest Plate Settler Installation in the United States"!

We have systems that have just recently been launched and we have plants that have been operating flawlessly for decades.

Our plate settlers are being used in a variety of municipal and industrial applications, serving a wide range of industries and public service entities.

The experience and knowledge gained from every one of these installations goes into the design of each new system we provide.

We have built upon our successes by monitoring and analyzing process performance data and applying that accumulated knowledge to the design of products and system improvements that can be applied to all of our systems, as well as enabling us to select just the right combination of technologies for your particular needs.

System Integration

In addition to plate settlers, JMS has been building flocculators and other products and systems for the water and wastewater industries for over 40 years (right). This vast and broad experience allows us to design, configure, and construct integrated systems that optimize efficiency and process performance.



JMS Horizontal Flocculators

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Web: www.MyersEquipment.com

"Making a Difference for Generations"