SIGMADAF

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SIGMA WATER GROUP

SIGMADAF is a family-owned company that is part of SIGMA WATER GROUP, a group with more than half a century of experience, now established as an international benchmark in the field of water treatment and reuse.

Currently, SIGMA WATER GROUP encompasses three brands that cover different areas of wastewater treatment.

SIGMADAF
Water Treatment Equipment

Specialists in the manufacture of advanced wastewater treatment equipment, such as DAF and CAF flotation systems, membrane bioreactors (MBR), moving bed biofilm reactors (MBBR), and filter presses.

AGUA SIGMA
Water Engineering

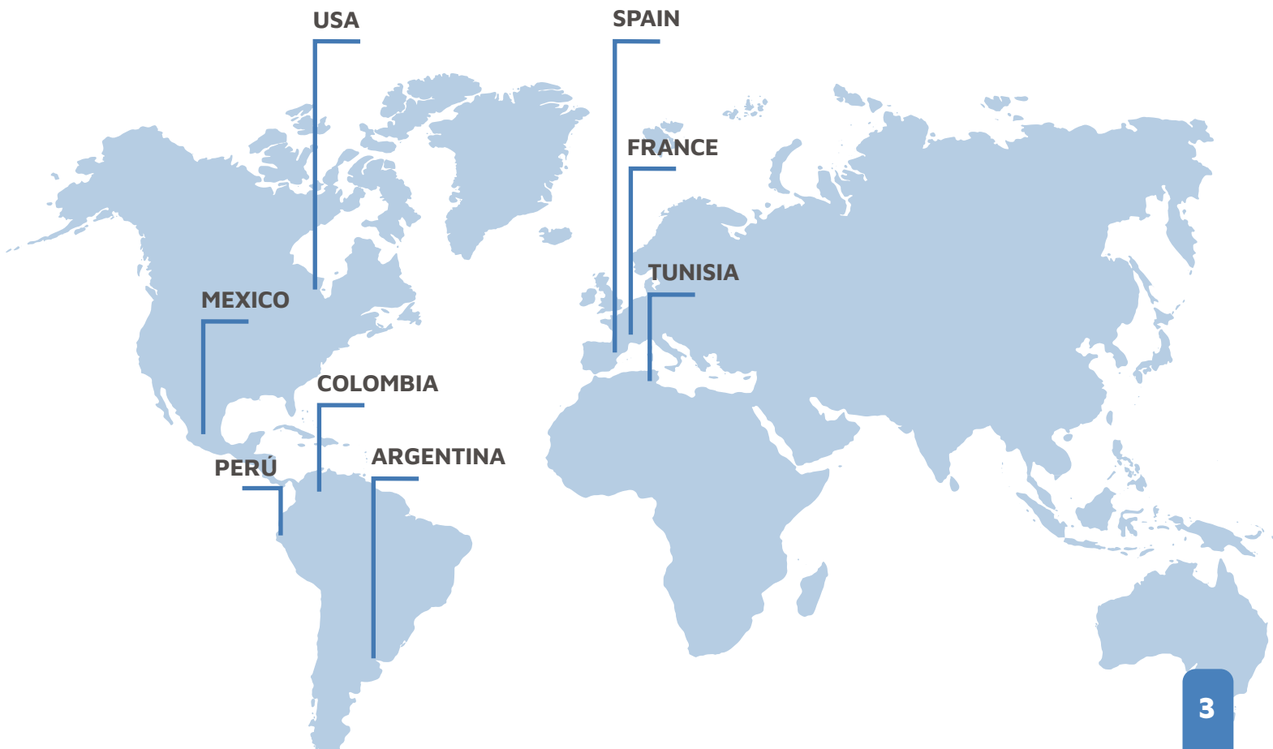
An engineering firm dedicated to the design, construction, commissioning, and maintenance of water treatment plants, offering turnkey solutions tailored to each need.

SIGMA BIODIGESTECH
Advanced Digestate Processing

Engineering company specialized in comprehensive solutions for the construction of bio digestion systems and plants for the treatment and valorization of digestate.

Global supplier, local support

With hundreds of projects carried out worldwide, SIGMA WATER GROUP has a solid network of its own offices and representatives, allowing it to offer proximity, agile response, and technical excellence in each of its services.



AT THE TECHNOLOGICAL FOREFRONT OF **WATER TREATMENT**

At SIGMADAF, we manufacture dissolved air flotation (DAF) and cavitation air flotation (CAF) systems, biological reactors (MBR and MBBR), and filtration units for the treatment and reuse of industrial wastewater. We also manufacture filter presses for solid-liquid separation.

The outstanding performance of our equipment is the result of a strong commitment to research, development, and technological innovation, which enables us to design increasingly efficient, sustainable solutions tailored to the real needs of our clients.

All our equipment is meticulously designed and manufactured in-house, allowing us to maintain complete control over the final quality of our products and to offer maximum guarantees in terms of efficiency, reliability, and durability.

DAF AND CAF FLOTATION SYSTEMS

We offer a wide range of flotation systems capable of treating from 3 m^3/h to over 1,200 m^3/h. Our DAF and CAF units are manufactured in stainless steel, or in polypropylene when treating corrosive waters. We also provide compact systems, mounted on a skid with all components integrated for immediate operation.

FILTER PRESSES

Our filter presses deliver excellent performance for solid-liquid separation in industrial processes and for sludge dewatering in wastewater treatment plants. We manufacture manual, semi-automatic, and automatic filter presses. All our units feature sidebar shifting and are ideal for small to medium-scale cake production.

BIOLOGICAL REACTORS

We manufacture biological reactors that produce high-quality treated water, which can legally be discharged or reused for various purposes. Our product range includes membrane bioreactors (MBR), moving bed biofilm reactors (MBBR), and flotation bioreactors (FBR), which are ideal for producing sludge with high dry matter concentrations.

DECENTRALIZED PLANTS

Our decentralized plants are delivered fully assembled and ready to operate inside high-strength, durable containers. All our equipment can be manufactured in this format, which is ideal for remote locations, sites with limited space, and companies looking to simplify the construction and commissioning of their WWTP.

A TRUSTED **SUPPLIER**

At SIGMADAF, we promote the responsible and sustainable use of water resources, ensuring the availability of high-quality water in every project we undertake.

Our commitment is to support industries and public administrations in complying with environmental regulations and optimizing water consumption through high-performance technologies and highly efficient operational and economic solutions.

20+ years of experience

850+ projects

Presence in over 50 countries

Active on 5 continents

350+ tons of COD removed daily.

3,000,000+ m^3 of wastewater treated per day.

350,000+ m^3 of biogas produced per day.

DATA UPDATED AS OF JUNE 2025

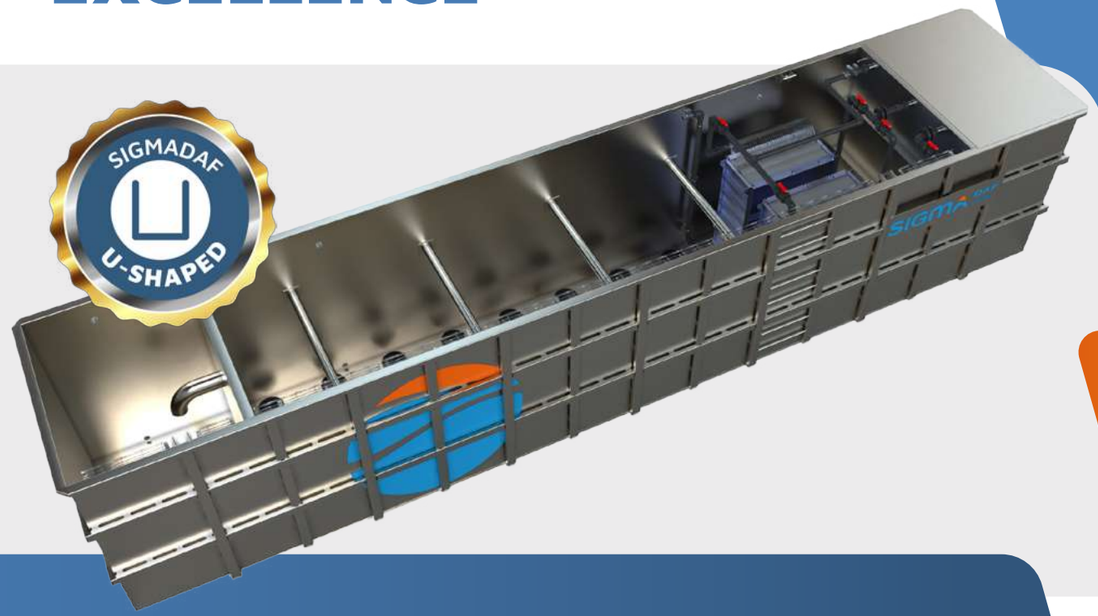
OUR **MANUFACTURING WORKSHOPS**

All equipment supplied by SIGMADAF is fully designed and manufactured in-house at our own facilities.

We operate two manufacturing workshops, totaling over 10,000 m^2 of manufacturing space.

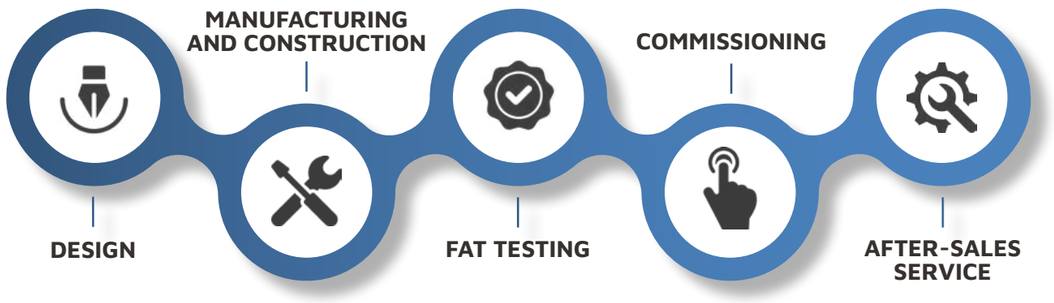
Thanks to complete control over our design and production processes, we can ensure the highest durability and performance of every piece of equipment we deliver.

CONSTRUCTION **EXCELLENCE**



All equipment manufactured by SIGMADAF is distinguished by external U-shaped reinforcements. This unique feature is more than just a visual identity, it optimizes the equipment's performance and durability by providing greater structural rigidity, better stress distribution across walls and corners, and easy access to internal components from the outside.

Every stage of our production process is focused on optimizing traceability, quality, and sustainability of the final product. The result is a broad range of technological solutions that meet the needs, specifications, and objectives agreed upon with the client.



Before delivery, each unit undergoes rigorous quality and performance tests to ensure flawless operation.

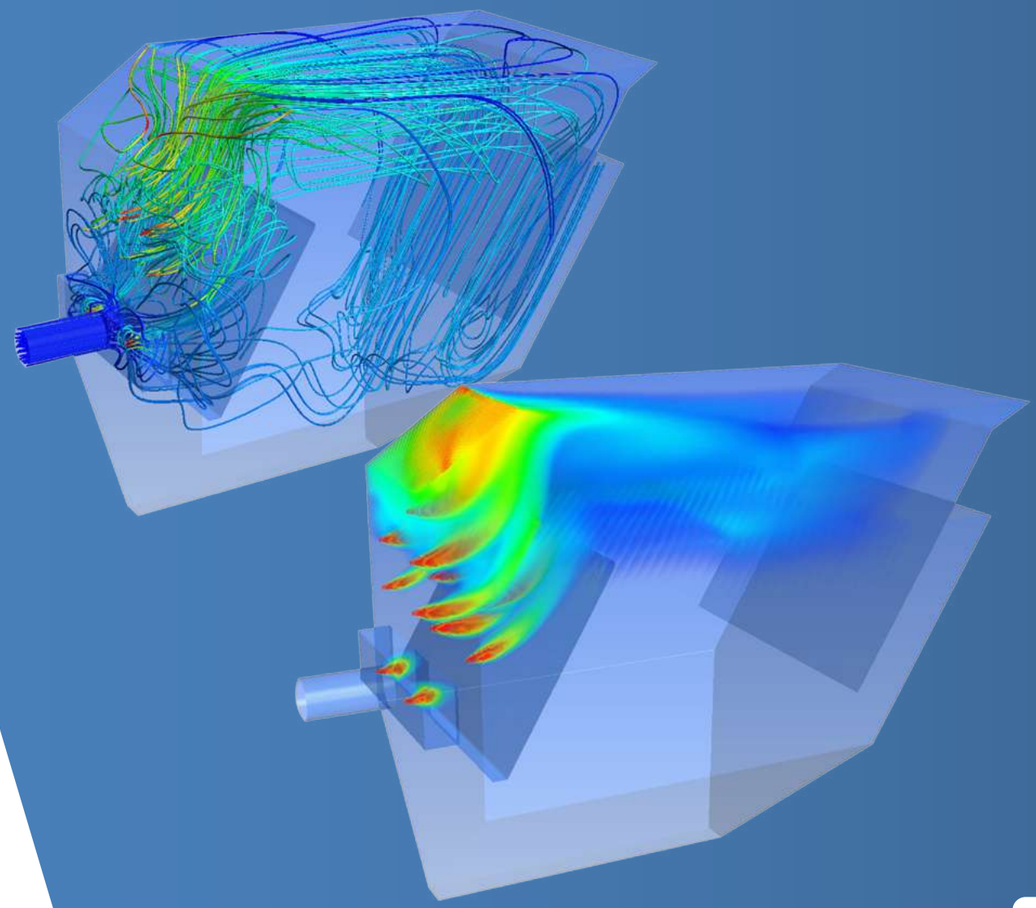
COMPUTATIONAL FLUID **DYNAMICS – CFD**

CFD simulations have been a key tool in optimizing the operation of our dissolved air flotation (DAF) systems.

These simulations allow us to visualize and analyze fluid behavior within the DAF system, enabling precise testing and adjustment of various configurations and operating conditions.

Some of the variables optimized include the distribution and size of air bubbles, the trajectory and velocity of suspended solids, the air injection rate, flow configurations, and the tank's geometric design.

Thanks to these simulations, we have been able to reduce both the construction and operational costs of our DAF systems, allowing us to offer more efficient equipment at highly competitive prices.



COMPREHENSIVE SUPPORT
THROUGHOUT THE WATER CYCLE

SIGMADAF offers all the necessary services to ensure maximum performance of our equipment throughout its entire lifecycle.

SIGMA LAB
LABORATORY

We have our own laboratory for the analysis and characterization of wastewater. Understanding the composition of a wastewater effluent is essential to design and implement a process that effectively separates and removes contaminants, producing treated water that can be legally discharged or reused.

SIGMA TEST
PILOT STUDIES

Our pilot tests allow us to evaluate and validate the performance of a process before large-scale implementation. Pilot testing also helps optimize operating conditions, validate technology performance, reduce operational and economic risks, and estimate initial investment and operating costs.

SIGMA CARE
AFTER-SALES SERVICE

Our after-sales service is designed to ensure that the equipment we supply to clients maximizes its useful life while maintaining optimal performance at all times. This service includes spare parts supply, on-site technical assistance, remote technical support, and consulting for process improvements.

SIGMA TRAINING CENTER

Our Training Center provides clients with specialized training on equipment operation and processes, including commissioning and system maintenance. Additionally, we offer our facilities for pilot testing—a cost-efficient alternative that reduces logistics costs by sending only the water, avoiding the need to transport equipment and personnel to the plant.

OUR **DAF MODELS**

We manufacture dissolved air flotation systems that provide high performance in removing suspended solids, oils, greases, and other contaminants present in wastewater.

All our DAF units are made of stainless steel, but we also offer the option to manufacture the tank in polypropylene for treating corrosive effluents.

1 DAF-**FPAC**

Ideal for small to medium flow rates (3 - 200 m^3/h) with very high contaminant loads. These are low-profile units with a large free surface area for the accumulation of floated sludge.

2 DAF-**FPBC**

Ideal for large flow rates (up to 200 m^3/h) with low to medium contaminant loads. These are high-profile units featuring internal lamellar circuits to minimize water velocity within a reduced total volume.

3 DAF-**FPHF**

High-performance equipment for very large flow rates (200 - 1000 m^3/h) with heavy contaminant loads.

4 **MEGADAF**

Model built with a concrete tank, designed to handle large volumes of water and wastewater (over 1000 m^3/h) with contaminant loads ranging from low to high.

COMPACT, PLUG & PLAY
DAF SYSTEMS

We design and manufacture compact dissolved air flotation systems that are delivered fully assembled on a skid with all connections pre-installed.

These compact systems integrate the DAF tank with the physico-chemical unit and the electrical panel, making them ready to operate as soon as they arrive at the client's site.

- **Immediate startup**: Sigmadaf's compact DAF systems are ready to operate upon arrival. Simply connect the power supply and adjust the dosing to start the equipment without delays or complications.
- **Fast and cost-effective installation**: Thanks to their compact, pre-assembled design, they require no on-site assembly or complex technical configurations, significantly reducing installation time and costs.
- **Maximum reliability and performance**: Each DAF system is pre-tested and calibrated by our specialists to ensure optimal and consistent operation from the start.

CAF SYSTEMS

Our cavitation air flotation (CAF) systems primarily remove suspended solids, oils, greases, and colloids from wastewater. These compact, durable units are made of stainless steel and can treat up to 300 m^3/h.

CAF flotation systems are mainly used in the pretreatment of wastewater. This is one of the main differences compared to dissolved air flotation systems, which can be used at various stages of the water treatment process.

CAF systems eliminate the need for air compressors, pumps, and pressure vessels, simplifying installation and operation while reducing energy consumption.

DECENTRALIZED
WATER TREATMENT PLANTS

We manufacture decentralized **MBR and MBBR biological reactors**, delivered fully assembled and ready to operate inside a container.

MEMBRANE BIOREACTORS – MBR

Up to 150 m^3/day per unit

Our membrane bioreactors offer outstanding performance in the removal of organic and inorganic solids as well as nutrients, allowing the recovery of high-quality water suitable for reuse.

Our decentralized MBR systems are ready to operate upon delivery. The operator only needs to monitor the permeate output, recirculation pump, and operating pressures.

- Capable of handling higher sludge concentrations (10–20 g/L), which increases the degradation rate of solids and nutrients.
- Compact, Plug&Play systems that occupy minimal space and do not require on-site construction.
- Treated water can be safely discharged or reused as process water.
- Easily integrable with advanced technologies for the removal of salts or recalcitrant organic compounds.

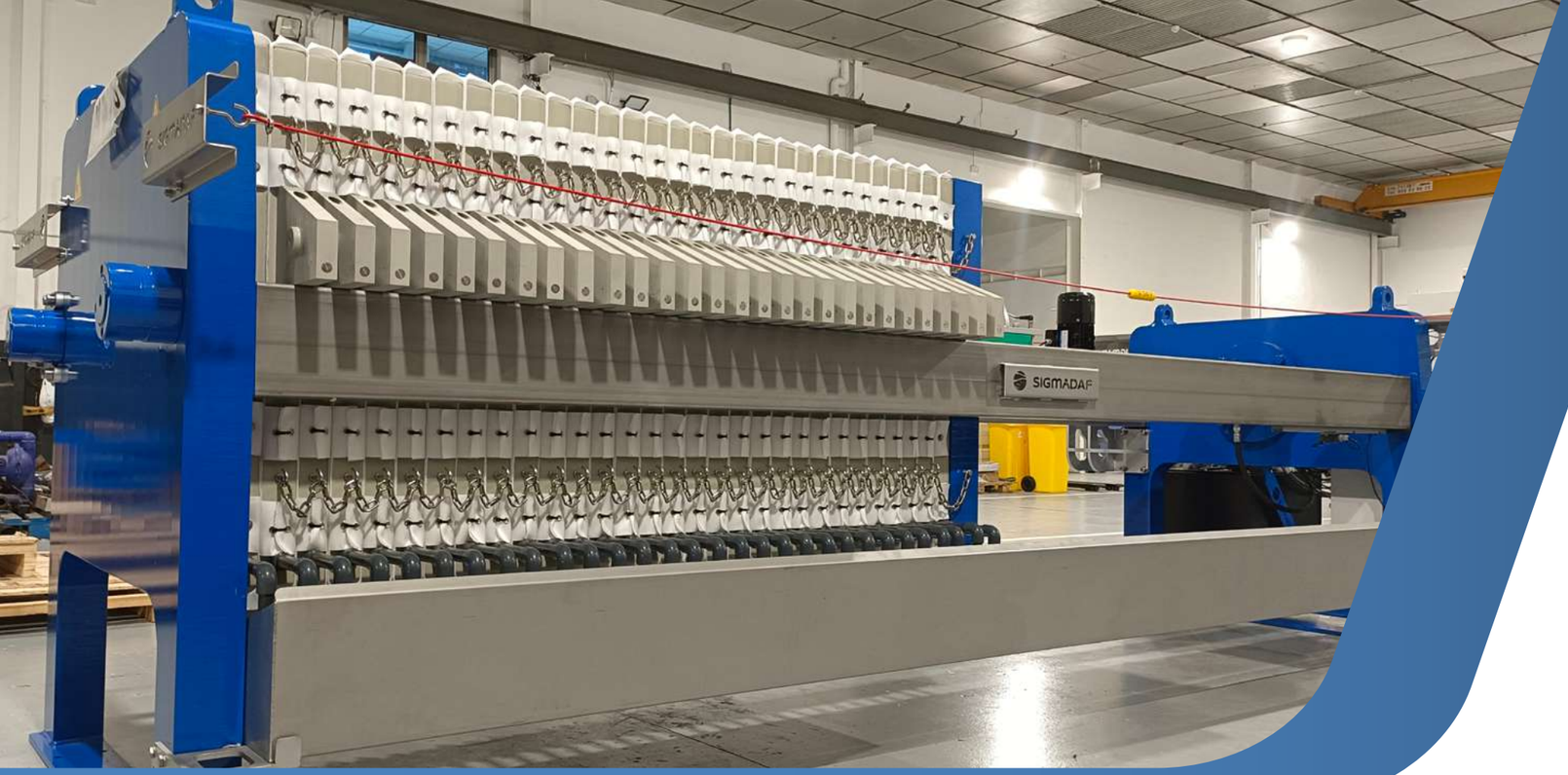
MOVING BED BIOFILM REACTORS – MBBR

Up to 350 m^3/day per unit

We design and manufacture decentralized MBBR biological reactors.

These systems are ideal for installations with limited space, as they reduce the required volume of aeration chambers compared to conventional activated sludge systems—while maintaining equivalent treatment performance.

- Minimal space requirements.
- Simple operation.
- Prevent bulking issues in secondary clarifiers.
- Tolerate load spikes and flow variations.
- Do not require constant supervision or process interruption.



FILTER PRESSES FOR SLUDGE DEWATERING

At SIGMADAF, we design and manufacture sidebar filter presses for solid-liquid separation in wastewater treatment plants, and other industrial applications.

Sidebar filter presses are ideal for small to medium-scale cake production.

Our presses can be built with various levels of automation, from manual to semi-automatic and fully automatic, allowing customization based on each client's goals and the specific properties of the material to be filtered.

Main construction materials: Carbon steel, SS316, SS304, and polypropylene.

OUR MODELS

1 SIGMADAF-**FP-M**

Manual hydraulic operation: Opening and closing by a double-acting hydraulic cylinder, operated with a manual hydraulic pump. Plate shifting is manual (polypropylene plates).

2 SIGMADAF-**FP-HM**

Semi-automatic: Electro-hydraulic opening and closing, controlled via a control panel. Plate shifting is manual (polypropylene plates).

3 SIGMADAF-**FP-A**

Fully automatic: Electro-hydraulic opening and closing. Automatic plate shifting via 4 linked chains (polypropylene plates).

4 SIGMADAF-**FP-AR**

Fully automatic with plate shaker: Electro-hydraulic opening and closing. Automatic plate shifting with 4 linked chains and integrated automatic plate shaking.

5 SIGMADAF-**FP-ATL**

High-end automation: Electro-hydraulic opening and closing. Automatic plate shifting and shaking. Plates are moved one-by-one using an alternating motion carriage system.

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