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WASTEWATER TREATMENT

At Avlon Inc., we are driven by a singular vision — delivering smart, sustainable, and scalable engineering solutions that address the critical needs of water, energy, and environment. With a proven track record across the Philippines and Southeast Asia, we specialize in technologies that serve industries, communities, and the planet.

Our wastewater treatment solutions are engineered to meet stringent DENR DAO 2016-08, as amended by DAO 2021-19 regulatory standards while ensuring efficient, low-maintenance operations. From MBBR to electrocoagulation and DAF systems, we provide customized treatment processes that safeguard water bodies and public health.

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Who We Are

About Us

With over 35 years of expertise in wastewater treatment plant, air pollution control equipment's, industrial steam boiler including power plants and oil refinery design, engineering, construction and commissioning, AVLON has been a trusted industry leader since 1980. Renowned for excellence, we have played a key role in pioneering projects across India's oil and refinery sector, setting new standards in quality and innovation.

In 2015, AVLON expanded its operations to the Philippines, establishing itself as a premier integration contractor in the Energy and Environmental Sector. We operate with a strong infrastructure, including state-of-the-art heavy lifting and construction tools, a full-scale fabrication shop, a vast warehouse, and an advanced design and engineering facility.

With a commitment to excellence and innovation, AVLON continues to lead the way in shaping the future of the Energy and Environmental Sector in Philippines.

Web: https://avlon-php.com

Email: hello@avloninc.com

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Avlon's Advanced Dissolved Air Flotation (DAF) Technology

AVLON INC, UNIT 3B, KAVI BUILDING, E. RODRIGUEZ, JR. AVE, BAGUMBAYAN, QUEZON CITY, 1110 METRO MANILA, PHILIPPINES

Dissolved Air Flotation (DAF) is a highly effective physical-chemical separation process widely used for removing suspended solids, oils, grease, and fine particulate matter from industrial and municipal wastewater. Many wastewater streams contain contaminants that are lighter than water or remain in colloidal suspension, making them difficult to remove through conventional sedimentation. The DAF process solves this challenge by attaching microscopic air bubbles to suspended particles, causing them to float to the surface where they can be mechanically removed. This technology is particularly suitable for industries such as food processing, petrochemicals, metal finishing, textiles, pulp and paper, and slaughterhouses, where wastewater contains high concentrations of oil, grease, and fine solids.

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The treatment process typically begins with coagulation and flocculation, where chemicals such as aluminum sulfate or polymer are added to destabilize colloidal particles and form larger flocs. The conditioned wastewater then enters the DAF flotation chamber. Simultaneously, a portion of the treated effluent is recycled, pressurized, and saturated with air inside a dissolved air saturation vessel. When this pressurized water is released into the flotation tank at atmospheric pressure, the dissolved air forms extremely fine microbubbles.

These microbubbles attach to suspended particles and flocs, reducing their effective density and lifting them toward the surface of the flotation tank. As the particles accumulate, they form a floating sludge layer that is continuously removed by a mechanical skimmer system and directed to sludge handling units. Meanwhile, clarified water flows beneath the flotation zone and exits through a collection system for further treatment or discharge. The efficiency of the process depends on several operating parameters, including bubble size, recycle ratio, hydraulic loading rate, and chemical dosing optimization.

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Avlon's Dissolved Air Flotation systems are engineered with high-efficiency saturation systems, precision recycle pumps, optimized inlet distribution, and automated sludge skimming mechanisms to maximize separation performance. Our compact and modular DAF units are designed for easy integration with upstream and downstream processes such as Electrocoagulation, Lamella Clarifiers, Moving Bed Biofilm Reactors, and tertiary filtration systems. With extensive experience in designing wastewater treatment plants across multiple industries, Avlon provides robust and energy-efficient DAF systems that ensure reliable removal of oils and suspended solids while meeting the stringent effluent standards of DENR DAO 2016-08 and DAO 2021-19.

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