



# DAF system

DAF Technology has been used for drinking water clarification in Europe since the late 1960s, it is still somewhat new or unknown to many drinking water treatment professionals in North America. Wastewater treatment professionals, do realize DAF Technology as a well-established slime thickening process that's also good at removing grease and oil from industrial wastewaters.

DAF Technology is an another clarification process that uses micro air bubbles to connect and float flocculated particles and suspended solids to the water surface for removal. In contrast, sedimentation removes settled solids from rock bottom. Many tiny air bubbles are released from the diffuser nozzles to the water, before the flocculated water enters the clarification chamber, which attach and float the floc particles to the water surface. The air bubbles are generated during a pumped recycle stream by an compressor and are dissolved in water through a packed-tower-type of saturator. The floated sludge is removed periodically to a desludging trough, and therefore the clarified water flows to rock bottom of the clarifying chamber then to an effluent control weir for collection. The air saturator is employed to dissolve air within the water then generate bubbles to float the floc particles.

Some of the most advantages of DAF Technology include better performance for removing light particles like algae, which are difficult to settle. DAF Technology also can usually achieve lower effluent turbidity than settling, typically but 0.5 NTU. It's not as sensitive to temperature, especially cold temperatures as is common in settling, and therefore the startup time is extremely short, approximately half-hour . Further, DAF Technology doesn't got to generate heavy floc for settling, so lower coagulant dosage and shorter flocculation time are often used. The method also can operate at much higher surface loading rates (SLR) than sedimentation, especially within the high-rate DAF processes, which may be up to twenty gpm/ft<sup>2</sup>.

DAF Technology is an alternative clarification process ideal for treating raw water with light particles, such as algae or colour-causing organics, and at low temperatures when sedimentation is not as effective. Widely used for drinking water clarification in Europe since the late 1960s, the first DAF Technology system for such application in the U.S. was not installed until 1982. It wasn't until the first 2000s that DAF became more widely utilized in the U.S. Since that time, DAF Technology has become a mainstream clarification process for drinking water treatment plants, especially where algae is prevalent, as well as a popular

pretreatment process for seawater desalination systems to combat seawater or algae bloom occurrences throughout the planet .