

AWAS Emulsion Splitting and Flotation Plants



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AWAS[®]

for the sake of our nature

AWAS-ADF-A/B/C dissolved air flotation plants for weak emulsions

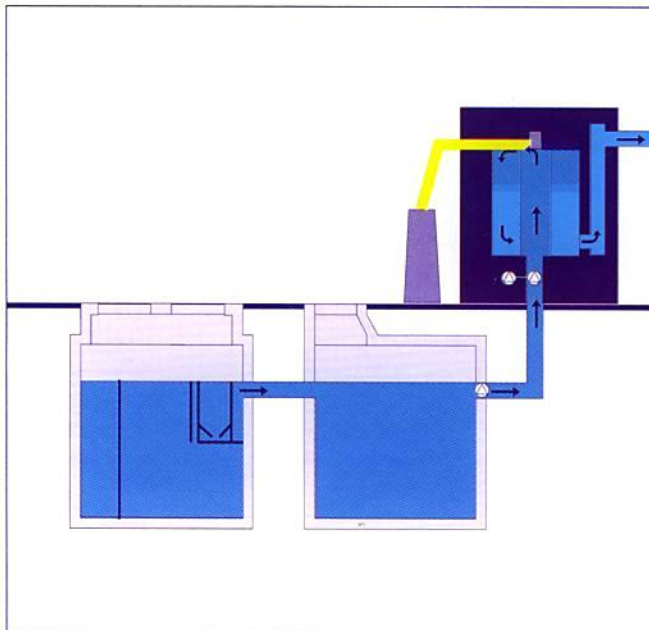
For all applications

Industry, craft and service companies create waste waters with various combinations of emulsions. Most of them are with organic and non-organic load. This, however, does not cause any problem to the wide range of AWAS emulsion splitting and flotation plants.

They are individually designed and take care of different stability and compositions of emulsions. The purified water can be discharged or recycled for specific applications.



AWAS ADF-B water recycling plant for car wash



AWAS-ADF operation principle, upstream AWAS-HI-2000 high performance separator

The ADF-flotation principle

The specific AWAS design allows low dosing of chemicals. Emulsions with oil, detergents and wax are quickly cracked. Microscopic air bubbles will lift the flocks to the surface of a reaction tank. A scraper wipes the sludge into a draining filter. Depending on the solidity of emulsions AWAS Flot plants will come as a single stage unit or with 2 floating steps which assures highest water quality.

The advantages:

- low chemical consumption
- little sludge
- reliable cracking
- outstanding water quality

Type	AWAS-ADF-A	AWAS-ADF-B	AWAS-ADF-C
Applications	workshops vehicle wash junkyards	vehicle wash	workshops
Effluents	weak emulsions light suspended solids, detergents, wax, oil	as for "A"	as for "A"
Solution	discharge to sewer 5-10 mg/l hydrocarbons pollution limits to sewer are easily met	recycling	treatment of different effluents pollution limits to sewer are met
Process principle	single stage dissolved air flotation plant	dissolved air flotation plant with 2 stages	combination of A and B
Capacities	600 - 15000 l/h	1000 - 15000 l/h	1000 - 3500 l/h

AWAS-ADF-D/I dissolved air flotation plants for solid emulsions

Cracking tough nuts

AWAS offers 2 types of specially designed flotation plants to crack highly loaded and solid emulsions from industrial fields :

AWAS ADF-D (workshops)

AWAS-ADF-I (industry)



AWAS ADF-B with sludge tank and pressure pump



The AWAS petrol station concept: fuel pumps, workshop, roll over wash and self service bays are all drained via the AWAS-RC system and one AWAS-HI-2000 separator. An AWAS-FLOT-B recycles car wash water

Type	AWAS-ADF-D	AWAS-ADF-I
Applications	gas stations with portal wash, self service bays, de-waxing, floor and fassade cleaning	tank cleaning, die casting, landfills slaughter houses, chemical and foodstuff industry, metal industry tanneries, glass polishing, fire training grounds
Effluents	wash water from self service bays, also in combination with roll over, de-waxing stations	process effluents and wash water from all kind of industries, containing organic and non-organic load, emulsions, heavy metals
Solution	wash water treatment, disposal or recycling 5-10 mg/l hydrocarbons pollution limits to sewer are met, discharge to an inland water is also possible	water treatment for disposal 5-10 mg/l hydrocarbons pollution limits to sewer are met discharge to an inland water is also possible
Process principle	single or double stage flotation plant with flocculant mixing station	as for „D“, with extended cracking pipeline and larger clearing surface, special flotation pump
Capacities	1000 - 15000 l/h	2000 - 15000 l/h

AWAS-BFA tank flotation plant for greater outputs of varying emulsions

Floating big

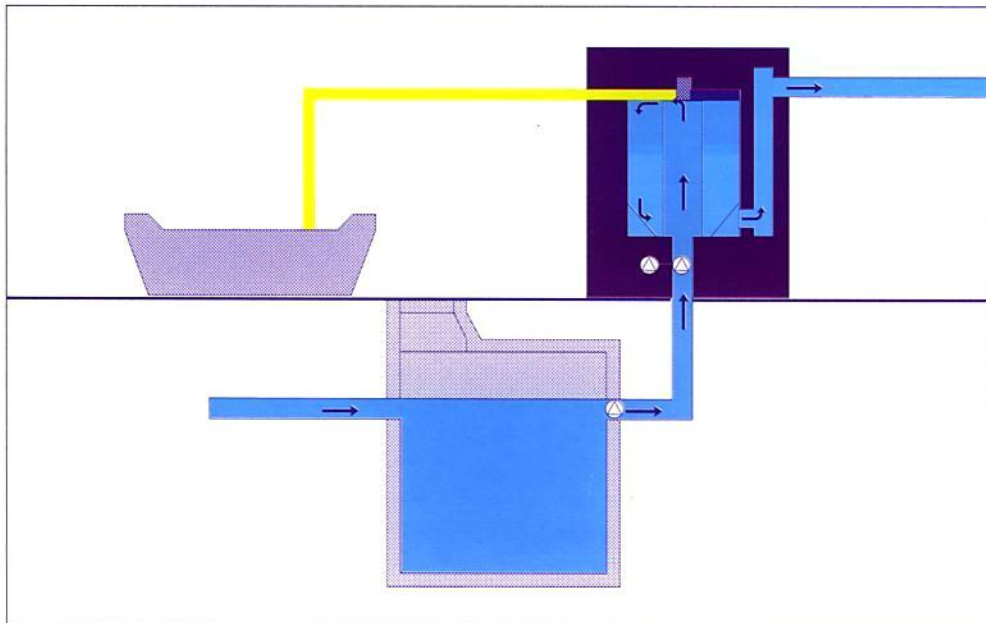
For larger outputs of wash waters with high organic load AWAS developed the BFA tank flotation plant for buried installation. However, it can also be installed above ground.

It is designed to recycle wash water to approx. 85% .

The investment pays back within a short time.



Cleaning work in an abattoir



AWAS-BFA operation principle

The BFA flotation principle

The AWAS-BFA basin flotation plant works ac. to the chemical-physical principle and a twin flotation. The emulsion will be cracked and saturated with compressed air before entering the reaction tank. Microscopic air bubbles will lift the flocks to the surface from where the accumulated sludge is wiped off by a scraper.

The purified water can be recycled for washing processes.

Type	AWAS-BFA
Application	slaughter houses, airports, disposal companies, tank cleaning
Effluent	larger outputs of varying emulsions, especially with high contents of organic load
Solution	discharge to the sewer or an inland water, 5-10 mg/l hydrocarbons, the pollution limits are met
Process principle	water recycling for wash processes
Capacities	12000 - 16000 l/h

AWAS-CH batch emulsion splitting plants for solid emulsions

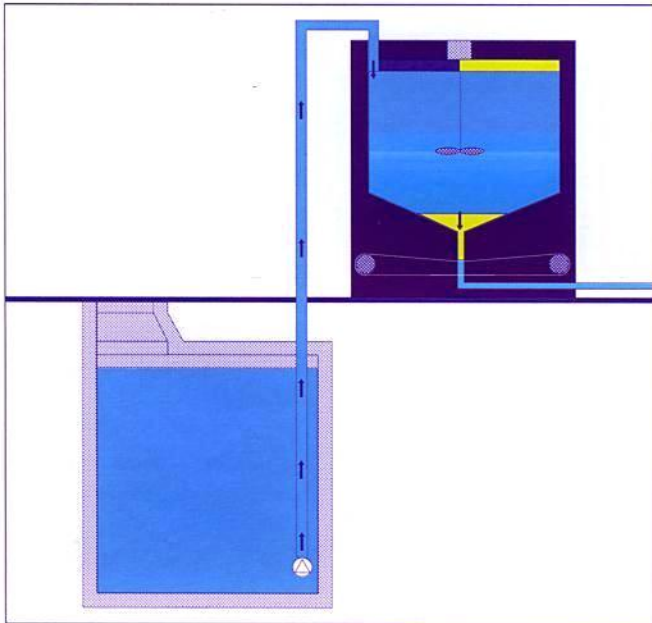
All emulsion will get cracked

The AWAS CH plants crack very solid and complicated emulsions. This is achieved by the dosage of several chemicals and adjustable reaction times. If needed, the batch system can be connected to an dissolved air injection in order to float also suspended solids.

For hazardous areas AWAS offers the CH in ex-proof version. AWAS uses liquid chemicals which assures to have low disposal costs by little sludge!



AWAS-CH application: metal industry



AWAS-CH-E/EF operation principle

The AWAS-CH principle

The reaction tank of the plant is filled up with waste water. Then the emulsion will be cracked. The pH-value is neutralised and the micro-flocks will grow. In order to have them settle quickly, a flocculant will be added. After an adjustable sedimentation time the purified water can be discharged to the sewer. The sludge will be pumped to a filter system for better draining. If the pH-value of the waste water changes constantly within a wide range, a pre-neutralisation can be installed upstream of the batch system.

Type	AWAS-CH-E	AWAS-CH-E/EF ex
Application	metal industry electric plating workshops tanneries die casting companies	for hazardous areas, i.e. coal mines
Solution	discharge to the sewer or an inland water, pollution limits are met	as for "E"
Process principle	sedimentation	as for "E"
Capacities	500 - 2000 l/h	500 - 2000 l/h

AWAS – for a clean and intact environment

Environmental protection has not only become a matter of public interest. Even industry acknowledges today the need of ecological thoughts and acts in order to achieve also an economical growth in the

future. Growing population, industrial expansion and an intensification of agriculture are creating an increase in worldwide environmental pollution. We are therefore obliged to set pollution limits

for waste water and air, the values of which are constantly being lowered. Not single plants, but an application tailored process technology is the key to overcome specific pollution problems. AWAS

can help you solving complicated waste water problems. Only global thinking accomplishes the correct selection and combination of single AWAS components for perfect results.



Water, the source of life – of vital power, but nevertheless sensitive and vulnerable – it needs our protection!

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AWAS – the individual program for waste water treatment, transportation and recycling

Products:

- interceptors (AWAS patent)
- emulsion splitting plants
- flotation plants
- neutralisation plants
- heavy metal reduction
- ultrafiltration plants
- ozone plants
- pump stations
- sewage plants
- water recycling plants
- AWAS-GLI, patented aeration system
- application tailored process solutions

Services:

- technical and commercial consulting
- project management
- construction and installation
- maintenance and service
- water analysis

Do you want to learn more about the AWAS program for a clean and intact environment?

Call us - don't hesitate.



for the sake of our nature

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