



COMPANY PROFILE





OUR MISSION

AWS CORPORATION is set up to serve “you” best.
“YOU” are our valued customer.

AWS CORPORATION number one target is to satisfy
our customer’s needs.

We want to provide engineered solutions to our
customer’s problems in several fields of industrial
applications and pollution control.



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Products & Services

AWS offers a complete range of services & products as follows:

Equipment supply such as:

- Air pollution control systems
- Aerosol, spray and mist separation
- Oil mist separator
- Tower internals
- Sulphuric acid plant equipment

Basic & detail engineering

Supply of turn-key plants

Commissioning & start-up

Services such as:

- Pilot plants
 - PSD analysis
 - "Air Pollution Control Systems" and "Mist Eliminators"
- Inspections & process evaluation

After sales service:

- Equipment inspection
- Equipment maintenance



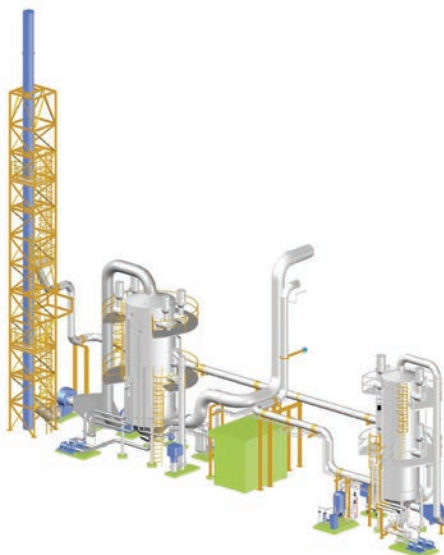
PRODUCT RANGE:

Air Pollution Control Systems

Wet Electrostatic Precipitator

The WESP allows the removal of following pollutants:

- HCl, HBr, HF, Hg, H₂S, NH₃
- SO₂, SO₃, SiO₂
- Oil mist, VOC's
- Aldehyds, Phenols
- PM 2,5, Dust, TAR, Sub-micron particulate, Heavy Metals
- NO_x, Dioxine



We can choose among different designs & configurations:

- Condensing tubular
- WESP Tubular WESP
- Honeycomb WESP
- Plastic & alloy WESP



PRODUCT RANGE:

Air Pollution Control Systems

Venturi Scrubber

Venturi Scrubbers offer efficient emission control for particulate and water soluble compounds.

Our expertise in wet scrubbing systems is particularly suitable for the removal of both coarse and fine particulates generally composed of nitrates, sulfates, organic carbon, heavy metals or carbon black.

The ability of venturi is to handle large inlet volumes at high temperatures.



Acid gas cleaning scrubber

Acid cleaning scrubbers are towers made of tray or packed bed.

They are designed to absorb and remove the alkaline or acid compounds of:

- Sulphur
- Nitrogen
- Toxic gases



PRODUCT RANGE:

Air Pollution Control Systems

NO_x control SCR system

The SCR system (Selective Catalytic Reduction) is used to remove NO_x from a gas stream by means of a ceramic catalyzer dosing Urea or Ammonia.

The SCR (Selective Catalytic Reduction) DeNO_x is normally assembled with the following components:

- DeNO_x SCR catalyst
- Reagent storage and dosing system
- Ammonia injection grid
- Heat exchanger
- Local control system (PLC)
- NO_x analyzer



NO_x control SNCR system

The SNCR system (Selective Non Catalytic Reduction) is used to remove NO_x from a gas stream by means of spraying nozzles dosing Urea or Ammonia in the combustion chamber.

The SNCR (Selective Non Catalytic Reduction) DeNO_x of AWS is normally assembled with the following components:

- Nozzles / lances injecting an Ammonia or Urea solution
- Reagent storage and dosing system
- Local control system (PLC)
- NO_x analyzer



PRODUCT RANGE:

Air Pollution Control Systems

Odour abatement system

Our technology is used to abate Nitrogen or Sulphur-based compounds causing unpleasant odours as well as volatile organic compounds (VOC) originating from a very wide range of industrial processes.



Evaporative cooling system

The evaporative cooling system is used to cool down a gas stream by means of a customized spraying system injecting water. Brand new design or retro-fit of an existing unit. In-duct cooling is in some cases also possible. Cool from 1.200°C, down to 80°C.



VOC removal system

This system offers efficient emissions control for Volatile Organic Compounds (VOC) and odor emissions. Autotherm regenerative oxidizer is the optimal solution in case of large waste gas quantity with low VOC concentration. The high heat efficiency (>96%) allows the autothermicity of the process.



Spray dryer absorber for SO₂, HCl & HF removal

The Spray dryer absorber system is used to cool down a gas stream by means of a customized spraying system injecting an alkaline solution. Similar to evaporative gas cooling, except for the reagent that absorbs and neutralizes acid gases.

PRODUCT RANGE:

Aerosol, spray and mist separation

FIBERWIND™ mist eliminators

This type of mist eliminators are specifically made to remove mainly submicron liquid or soluble solid particles from an air or gas stream.

Typical applications are:

- Sulphuric acid plants
- Detergents plants
- Ammonium nitrate plants
- PVC wall covering
- Artificial leather production
- Fertilizer plants
- Plastic manufacturing
- Lubricating oil vent systems
- Asphalt units
- Pulp and paper Production
- Nitric acid plants
- Compressed air and gas
- Ammonia scrubbers
- Phosphoric acid plants
- Chlorine plants



BM Type (Brownian Movement)

The collection efficiency is:
100% for all particles > 3 micron
99.5% or more, for all particles ≤ 3 micron.

IM Type (Impaction Movement)

The collection efficiency is:
100% or all particles > 3 micron
90-97% for all particles ≤ 3 micron.

PRODUCT RANGE:

Aerosol, spray and mist separation

TIDEVANE™ mist eliminator

AWS TIDEVANE™ mist eliminators are specifically made to remove liquid droplets together with solid particles from an air or gas stream.

AWS TIDEVANE™ mist eliminators are made of zig-zag baffles.

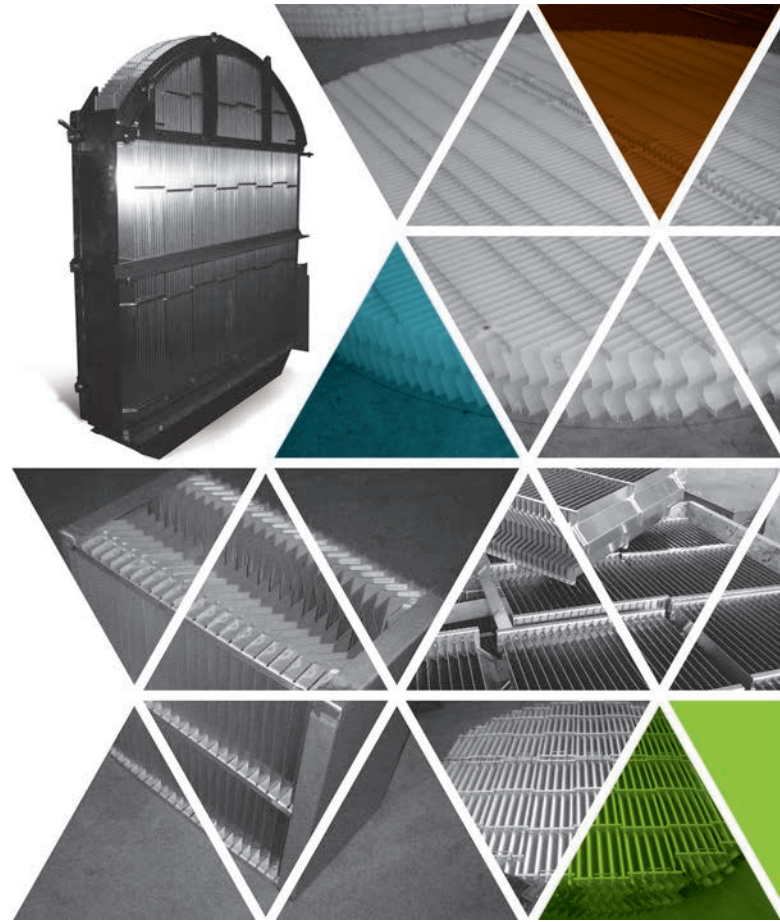
Typical applications are:

- Vacuum evaporators
- Concentrators
- Cooling towers
- Scrubbers
- Packed towers
- Cooler-condensers
- High pressure separators
- Knock out drums

WFGD (Wet Flue Gas Desulphurization)

In order for an FGD System to operate continuously and stay within guaranteed levels of particulate emissions, a mist elimination system must be installed at the outlet of an absorber. This is necessary because, as flue gas passes through the spray zone, it carries out of the absorber the fine droplets produced by the recycle sprays.

Materials: PP

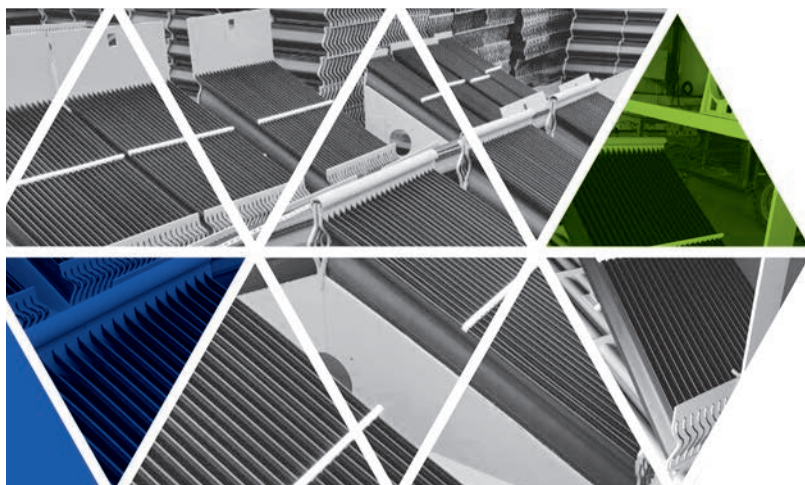


AIR INTAKE (Marine & Gas Turbine)

AWS TIDEVANE™ intake moisture separator systems are designed to handle visible moisture entrainment and heavy sprays from air streams entering into turbines, ships' engine rooms, ventilation air intakes and similar marine and offshore applications.

Materials:

- 316L SS
- Aluminium



PRODUCT RANGE:

Aerosol, spray and mist separation

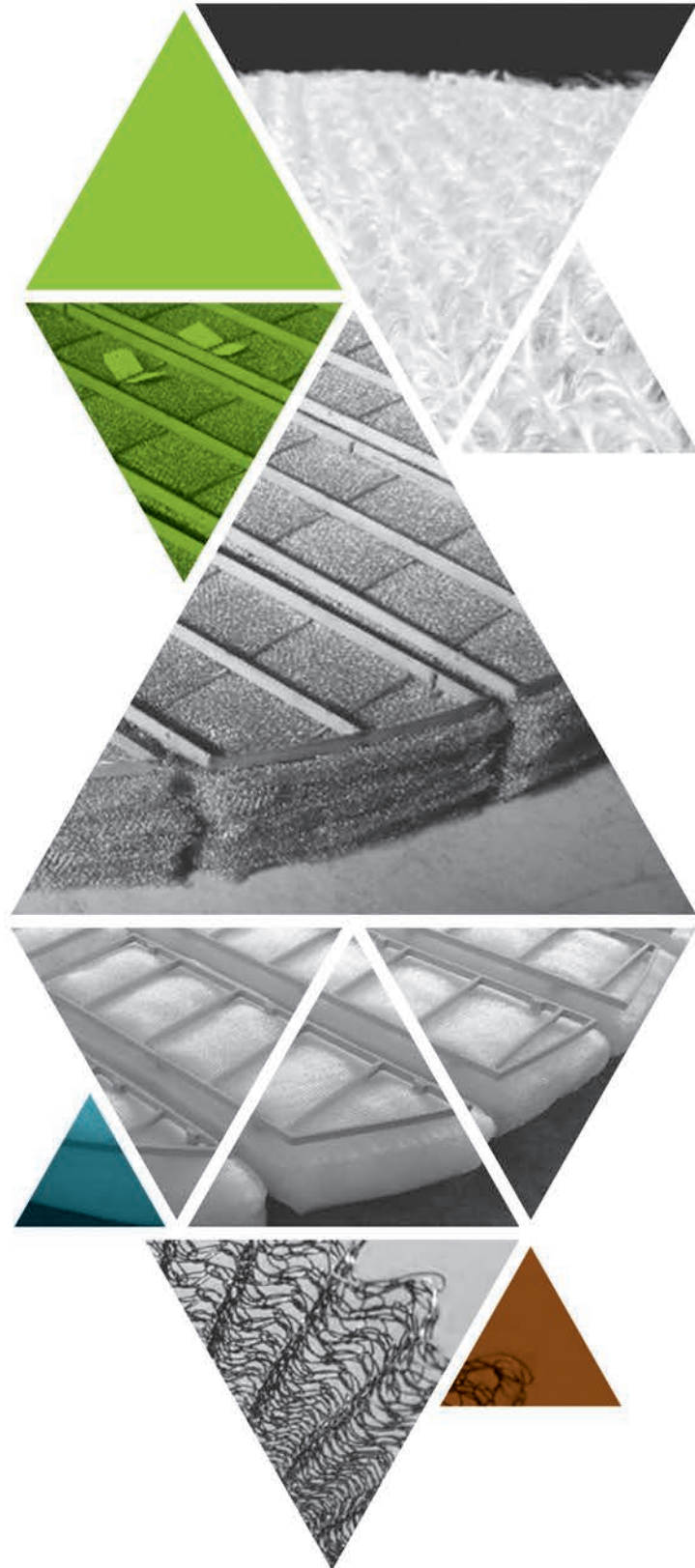
Meshpad mist eliminator

The most widely applicable type of mist eliminator is made of metal or plastic wire with typical diameter of 0,15 to 0,3 micron.

Such mesh can efficiently capture mist droplets as small as 2-3 micron.

Typical applications are:

- Vacuum evaporators
- Concentrators
- Cooling towers
- Scrubbers
- Packed towers
- Cooler-condensers
- High pressure separators
- Knock out drums



Coalescers Liquid-Liquid separators

AWS liquid-liquid separation technology can solve a wide range of separation problems involving immiscible liquids.

PRODUCT RANGE:

Oil mist separator

This type of mist eliminator has been designed to remove oil mist originated from the lubricating systems of compressors and turbines.

MAIN ADVANTAGES

- Broad range of environmental applications
- Flexible configuration
- Modular construction for:
 - Efficient use of space and power
 - Easy integration with turbines/compressors systems
- High efficiency removal with constant performances
- Low maintenance and operating costs
- Flexible up-scaling



PRODUCT RANGE:

Tower Internals

Liquid distributor

AWS distributors provide continuous and precise distribution of liquid throughout the tower packing which ensures optimum absorption efficiency, minimum mist generation and maximum service life of downstream equipment.



Random packing

- Stainless steel
- Hastelloy
- Titanium
- Nickel
- Copper
- Aluminum
- Plastic

Support grids

Support plates are provided to physically support the cumulative weight of the random and structured packing as well as operating liquid hold up.

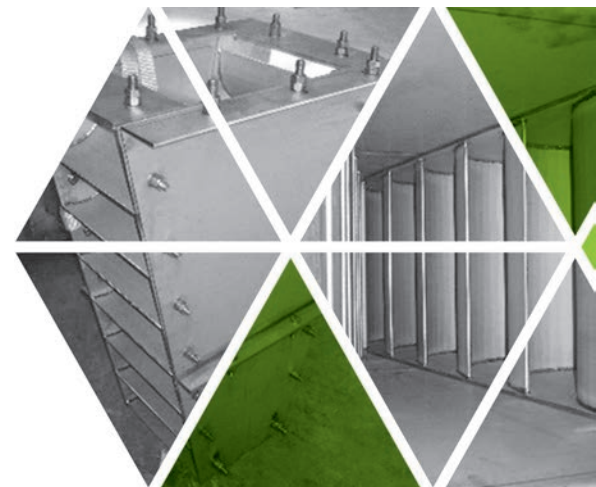
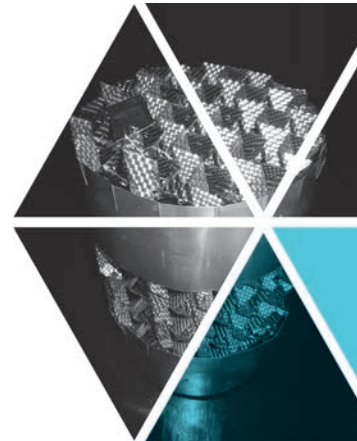
Structured packing

- Carbon steel
- Stainless steel alloys
- Aluminum
- Titanium
- Nickel alloys
- Copper alloys
- Zirconium
- Plastic

Gas distribution inlet devices

The Inlet Device ensures a further distribution which is necessary in order to prevent any chance of channeling problems in many types of equipment such as:

- Scrubbing, absorption, stripping or distillation columns
- Evaporators
- Knock-out drums
- Feed inlet separators
- 2-phase and 3-phase separators
- Gas dehydration plants
- Compression systems and suction drums



PRODUCT RANGE:

Sulphuric Acid Equipment

Acid distributor

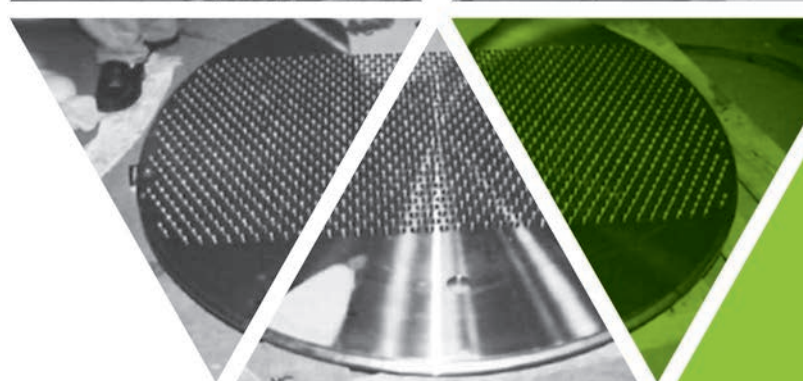
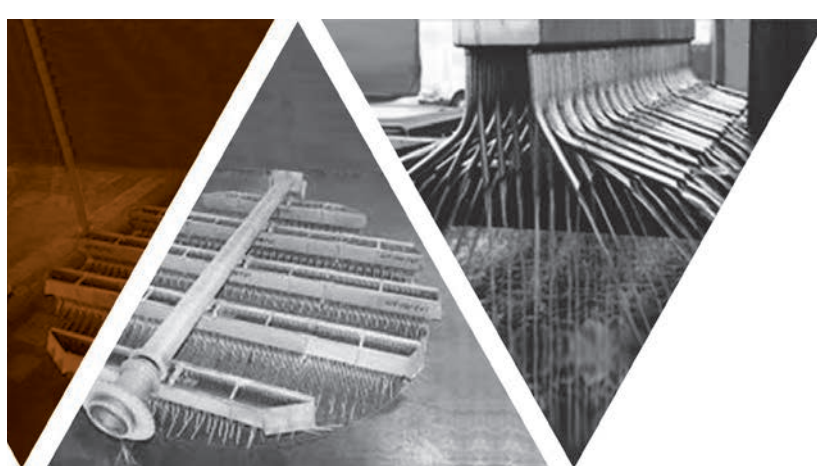
Acid distributor is designed to achieve the best liquid distribution to guarantee the most efficient contact between the gas stream & the sprayed acid.

- Cast iron distributor
- Silicon alloy distributor
- Distributor manufactured according to the following configurations:
 - Pipe type
 - Through & downcomer type

Acid cooler

Acid cooler is designed to achieve good heat transfer and to cool down the sulphuric acid up to proper service temperature.

- Silicon alloy acid cooler
- Anodically protected acid cooler



Gas-gas heat exchanger

The transfer of large quantities of heat from one gas stream to another using large gas/gas heat exchange equipment is an essential feature of the contact process for the manufacturing of sulphuric acid.

- Minimize differential thermal stress
- High efficiency & low pressure drop

Materials:

- Stainless steel
- Carbon steel

Ceramic packing

AWS supplies all types of ceramic packing, that are used in sulphuric acid drying, absorption & final tower to optimize the liquid/gas contact.

- High efficiency surface area
- Low pressure drop
- Structured and Random Type



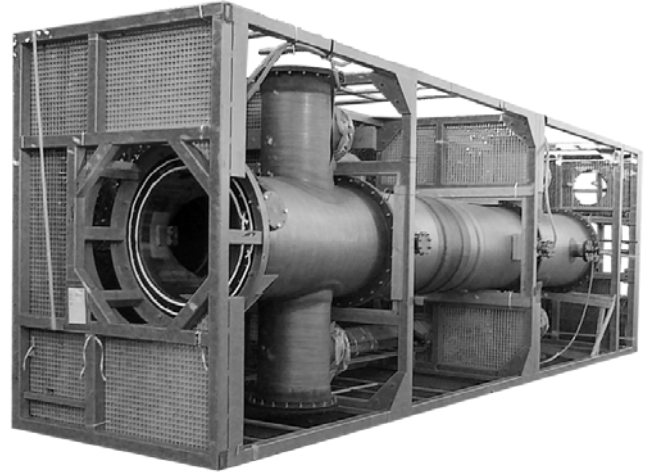
PRODUCT RANGE:

Services

Pilot plants

AWS has the following pilot testing plants available for rent on request, including our support on site:

- WESP
- FIBERWIND™ Plant



Particle Size Distribution (PSD) analysis

AWS offers an on site measurement service with high qualified and experienced people.

Selected impactors utilize the mechanism of inertial impaction to deposit particles onto impaction surfaces, and used for gravimetric particle size distribution analysis.

Instrumentation for analysis are:

- Electrical Low Pressure Cascade Impactor (ELPI™)
- Light-scattering spectrometer system (Welas®)

Air Pollution Control System & Mist Eliminators

Inspections & process evaluation

Aging plants, preventative maintenance, emergency repairs, process changes and new regulations applied, require qualified companies with in-house expert personnel to support the clients providing the following services:

- proven solutions in compliance with new operating requirements
- a complete line of replacement parts, each carefully chosen for its quality, performance and value
- cost-effective maintenance strategies, from routine repairs, upgrades of various parts, outage planning, project management to cost containment plans.





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