EVALED™ AC
Vacuum evaporators powered by hot/cold water
EVALED™ AC evaporators

EVALED™ AC Solution represents the range of hot/cold water evaporators utilizing low cost energy sources, such as the ones from cogeneration plants.
VWS Italia, in co-operation with respected materials research centres, selects the most suitable materials for the safe management of aggressive liquids. The resistance to corrosion is the main features of every EVALED™ evaporators, essential when dealing with extremely concentrated liquids.

**Austenitic stainless steel AISI 316L**  
(Number: 1.4435 - X2 CrNiMo 18-14-3)  
Austenitic weakly bound structure, non-hardening, non-magnetic. The low percentage of Carbon in this alloy reduces the risk of intergranular corrosion at high temperatures.  
**Uses:** alkaline liquids, acid liquids (pH>4) with a low percentage of chlorides, oil emulsions, liquids from flexographic printing.

**Superduplex stainless steel**  
(Number: 1.4410 - X2 CrNiMo 25-7-4)  
Austenitic-ferritic structure, magnetic. The high percentage of Chrome gives excellent resistance to localised corrosion.  
**Uses:** acid liquids (pH>3) with high chloride and metals content, galvanic waste waters, landfill leachate.

**Nickel alloy**  
(Number: 2.4819 - NiMo 16 Cr15 W)  
High flexibility Cr-Ni-Mo steel. The low Carbon content ensures resistance to the formation of carbides at zones exposed to thermal variation. It has excellent resistance to localised corrosion, both in oxidising and reducing environments, even at high temperatures.  
**Uses:** very acid liquids (pH>2) with high content of chlorides, fluorides and metals, anodising waste waters, special applications.
The capacity of EW evaporators varies from 20,000 l (5,300 gal) to 60,000 l (15,800 gal) of distillate per day. Water boils at 40°C (104°F) and at a vacuum of approximately 5kPa. The distillate can be recycled and the concentrate is a pumpable fluid. The evaporation process is controlled by a PLC so that the evaporator requires a minimum of supervision and automatically manages the functions of waste water feed and discharge of concentrate and distillate.

**SPECIFICATIONS**

The capacity of EW evaporators varies from 20,000 l (5,300 gal) to 60,000 l (15,800 gal) of distillate per day. Water boils at 40°C (104°F) and at a vacuum of approximately 5kPa. The distillate can be recycled and the concentrate is a pumpable fluid. The evaporation process is controlled by a PLC so that the evaporator requires a minimum of supervision and automatically manages the functions of waste water feed and discharge of concentrate and distillate.

**Single Effect**

**EW 20000**
- **Capacity**: 20,000 l - 5,300 gal distillate / 24h
- **Heating water flow-rate (90°C/194°F)**: 17 m³
- **Cooling water flow-rate (25°C/77°F)**: 73 m³
- **Construction**: pre-assembled single module on a stainless steel frame

**EW 40000**
- **Capacity**: 40,000 l - 10,600 gal distillate / 24h
- **Heating water flow-rate (90°C/194°F)**: 34 m³
- **Cooling water flow-rate (25°C/77°F)**: 146 m³
- **Construction**: pre-assembled single module on a stainless steel frame

**Double Effect**

**EW 30000**
- **Capacity**: 30,000 l - 7,900 gal distillate / 24h
- **Heating water flow-rate (90°C/194°F)**: 14 m³
- **Cooling water flow-rate (25°C/77°F)**: 60 m³
- **Construction**: pre-assembled double module on a stainless steel frame

**EW 60000**
- **Capacity**: 60,000 l - 15,800 gal distillate / 24h
- **Heating water flow-rate (90°C/194°F)**: 27 m³
- **Cooling water flow-rate (25°C/77°F)**: 120 m³
- **Construction**: pre-assembled double module on a stainless steel frame

EW is particularly suitable for:
- landfills and waste disposal
- food industry
- mechanical industry
- biogas plants digester
- steel and aluminium industry
- chemical industry
- power
EVALED™ RW Series

RW is the hot/cold water evaporator with stirred and scraped heat exchanger surface that transfers heat by heating jacket containing circulating hot water. This series is designed to treat waste water containing a high concentration of suspended and dissolved solids. That is the reason why within the boiling chamber waste water is stirred continuously by an Archimedes screw type scraper, preventing any fouling of the heat exchange surface. The evaporator produces a distillate recyclable since free of dissolved salts and a solid or semi-solid concentrate with a water content less than 15%.

The RW evaporators are designed to work both continuously and by batch, by using a pump to discharge the concentrate or by stopping the evaporation process by opening the front door and leaving the screw working. With the addition of an optional intermediate heat exchanger RW evaporators can also utilize steam as a heat source.

**RW series is particularly suitable where:**
- it is necessary to minimize the concentrate to dispose of
- the waste water has a high content of dissolved or suspended solids

**RW series is the best solution for:**
- landfills and waste disposal
- galvanic industry
- food industry
- mechanical industry
- chemical industry
- printing
- power

**SPECIFICATIONS**

The capacity of RW evaporators varies from 3,000 l - 790 gal to 12,000 l - 3,200 gal of distillate per day. Water boils at 40°C (104°F) and at a vacuum of approximately 5kPa. The evaporation process is controlled by a PLC so that the evaporator requires a minimum of supervision and automatically manages the functions of waste water feed and discharge of concentrate and distillate.

**RW 3000**
- **Capacity**: 3,000 l - 790 gal distillate / 24h
- **Heating water flow-rate (90°C/194°F)**: 2.9 m³
- **Cooling water flow-rate (25°C/77°F)**: 8.6 m³
- **Construction**: pre-assembled single module on a stainless steel frame

**RW 6000**
- **Capacity**: 6,000 l - 1,600 gal distillate / 24h
- **Heating water flow-rate (90°C/194°F)**: 6 m³
- **Cooling water flow-rate (25°C/77°F)**: 18 m³
- **Construction**: pre-assembled single module on a stainless steel frame

**RW 12000**
- **Capacity**: 12,000 l - 3,200 gal distillate / 24h
- **Heating water flow-rate (90°C/194°F)**: 12 m³
- **Cooling water flow-rate (25°C/77°F)**: 36 m³
- **Construction**: pre-assembled single module on a stainless steel frame
Process diagram

- Tank
- Pump
- Condensate
- Ejector Distillate
- Outlet
- Hot water outlet
- Hot water inlet
- Vapour
- Feed Inlet
- Discharge
- Heating Jacket
- Heat exchanger
- Cold water inlet
- Cold water outlet
- Distillate Outlet
- Pump
- Tank