

demEAUmed Technologies

Plimmer® Technology

Eight categories of innovative technologies together with a monitoring, control and decision support system are integrated and demonstrated in a real life situation within the European project demEAUmed "demonstrating integrated innovative technologies for an optimal and safe closed water cycle in Mediterranean tourist facilities." This factsheet presents one of these eight technologies; the **Plimmer®** technology.

Description

Plimmer® is a non-Membrane technology which treats ground/surface water to drinkable standards.

It requires very low pressure and results in low power consumption. It reduces water wastage since water is not pushed into a membrane under high pressure.

This technology has 12 patents in terms of number of electrodes, coating on electrodes and electronics required to handle the process and no chemicals are required for treating water. Electrodes require just 1.6 V charge to operate – providing an option to run on alternative energy sources (e.g. solar).

Depending from model of Plimmer® salt reduction vary from 65% to 95%.

The values refer to a conductivity input of 400us. Salt removal percentage decreases with increasing the conductivity of the water inlet and vary with the types of salts dissolved in it.



Applicability

Plimmer® system provides a largely accessible method of desalinating water in domestic, commercial and industrial contexts. It perfectly removes substances that dissociate in ions which present in raw water. Common target pollutants/substances are:

- Temporary hardness,
- Permanent hardness,
- Sodium chloride,
- Sodium sulfate,
- Nitrates,
- Nitrites,
- Ammonia,
- Metals; such as Fe, Mg (if they present as ions),
- Arsenic (if it presents as ion) and
- Hexavalent Chromium.

Design Criteria

Size can be

33 cm (w) X38 cm (l) X28 cm (h)

57 cm (w) X37 cm (l) X47 cm (h)

For demEAUmed:

33 cm (w) X38 cm (l) X28 cm (h)

Location

Packed Plimmer® units must be stored in a dry environment (free from condensation) and protected from the weather. The allowable storage temperature range is 5°-50°C.

Flow

For all size the drain is around 20% of income water.

Operation and Maintenance

Plimmer® systems do not require difficult maintenance procedures. It automatically injects maintenance solution to avoid fouling inside the cell. Its web-platform allows remote monitoring and control, making the technology easily controllable. It also allows the user to control water quality without having direct access to the machine.

Advantages of Plimmer®

- Eco-friendly treatment process: Citric

Acid is an organic acid extracted from lemon trees which also provides the electrodes a longer useful life.

- Low Carbon Footprint: It ensures 30% less energy required to desalinate water.
- Improved Water Footprint: It recovers 80% - 90% of fresh water.
- Automatic Operation.

Costs issues

Capital expenditure is similar to a standard Reverse Osmosis units. It is very low where the Return On Investment (ROI) is expected in less than a year.

Contact:

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Please find further information and updates on demEAUmed project, its technologies and DSS at: www.demeaumed.eu



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