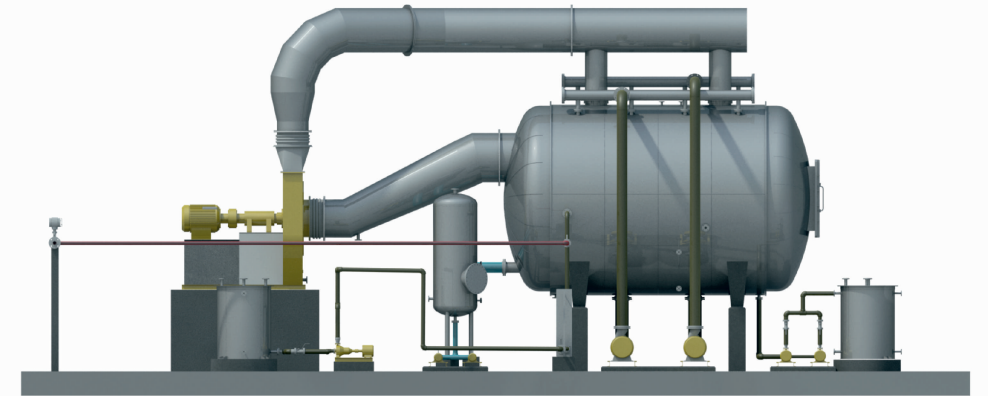
ENVISOL ARVIND
Preserving Environment, Preserving Life

POLYMERIC FILM EVAPORATION TECHNOLOGY (PFET)
(PATENTED DESIGN)

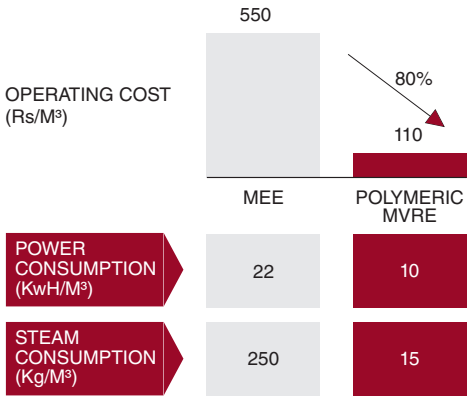


SUSTAINABLE ZERO LIQUID DISCHARGE AT LOWEST OPERATING COSTS USING OUR PATENTED POLYMERIC FILM BASED EVAPORATION TECHNOLOGY

Evaporation is the most efficient technology that works on almost all effluents but it has always been an energy intensive process. At Envisol, we break this stereotype and introduce to you the world's most economical, sustainable, highly effective and fully automated polymeric film evaporation technology based on mechanical vapour re-compression technique.

KEY ADVANTAGES OVER MEE

- Less prone to scale and corrosion in comparison to metals, easy cleaning process
- Can operate on low pH, higher organic load and coloured effluent
- Lowest operating costs; steam is used for covering the minimal energy loss and saves up to **80% energy** for ZLD systems as compared to other prevailing technologies



FEATURES

- PFET allows convenient retrofitting in existing schemes in order to derive maximum advantage over MEE
- Lowers the capex of boilers as PFET system requires a much lesser capacity boiler
- No need for major civil construction, only vessel foundation required
- Fully automated system with remote monitoring; no dedicated manpower required
- VFD system supplied to allow flexibility in operations and energy usage optimization
- Standard and high quality products used to increase the system longevity
- Available in standard capacities of 50, 100, 150, 200, 250, 300, 450 and 500 KLD systems. Bigger capacity systems available on request
- Area required for installing the system (in the range of 225 m^2 to 1350m^2)

500KLD PFET SYSTEM

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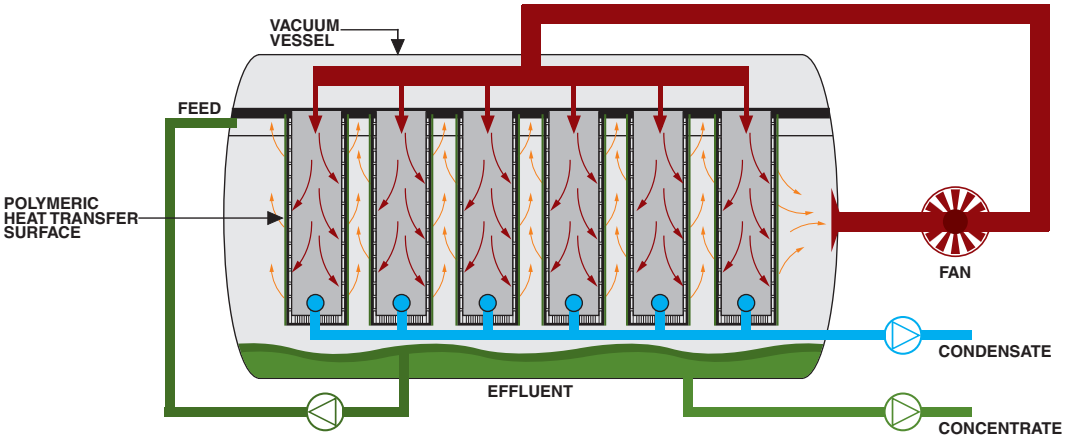


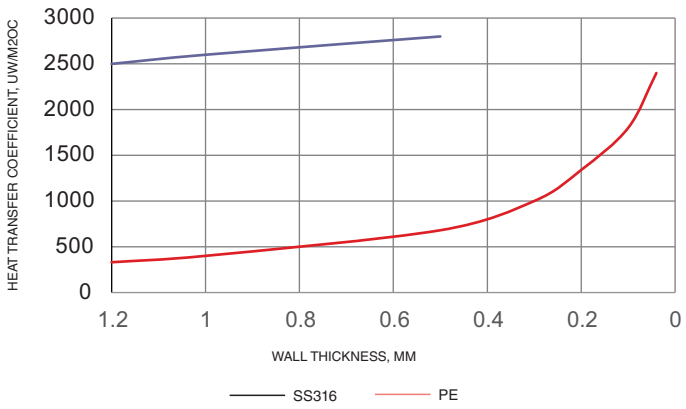
Works on the principle of mechanical vapour re-compression under vacuum. The energy source is the latent heat released when the vapour evaporated from the waste water is condensed

WORKING PRINCIPLE

- Pre heated effluent is distributed on the polymeric bags placed inside the evaporator vessel at approx. 190mbar in vacuum
- Steam / pressurized vapor is injected into the unique “S” shaped pattern through the veins of the polymeric bag
- This steam passes on the latent heat to the effluent on the outside surface of the polymeric bag, resulting in the evaporation of the effluent and its conversion to vapour
- The vapour is sucked by a high speed fan and compressed by 20mbar to increase the vapour temperature and injected back again into the “S” shaped veins of the polymeric bag
- On the other hand, the saturated vapour inside of the veins condenses after losing latent heat and is collected as pure condensate
- The process is again repeated using the re-circulation pump which draws the effluent again and distributes it on the polymeric bag

PATENTED POLYMERIC ELEMENT

UNLIKE METALLIC PHE'S, DESIRED HEAT TRANSFER IN POLYMERIC FILM IS ATTAINED BY DECREASING THE WALL THICKNESS



At 40 micron thickness, Envisol Polymeric film works at approx. △T of 2.5°C which is used to heat effluent at desired temperature of 60°C, to boil at 190mbar vacuum

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