



FREYLIT OIL WATER SEPARATORS

ACCORDING EUROPEAN NORM EN858

SINCE 1983 FREYLIT HAS BEEN PRODUCING AND INSTALLING A WIDE RANGE OF OIL WATER SEPARATORS

Over the past 25 years FREYLIT has equipped more than 90% of all Service Stations in Austria with FREYLIT Oil Water Separators.

SPECIAL FEATURES and SPECIAL CHARACTERISTICS of FREYLIT OIL WATER SEPARATORS

COMPARED to OTHER METHODS and COMPETITORS :

VARIOUS TECHNOLOGIES

COMPETITORS

INCLINED PLATES

Most of FREYLIT'S competitors use parallel inclined plates as coalescing media

Some manufacturers of 45 degree inclined plates state : If sediment and mud entering the tank with the water the sediment simply slides down each 45 degree plate to the bottom of the tank, however this is not correct .

In oily water environments, bacteria and algae always grows on the surface of the plates and over time, the algae and bacteria growth makes the space between each plate smaller and smaller so sediment and mud cannot slide to the bottom of the tank but instead sticks to the algae and bacteria on the plates.

This causes back pressure and the oil droplets are therefore forced to flow faster across the 45 degree straight plates.

Since the smaller space is creating back pressure, the oily water flows quicker through the plates and the plates do not have sufficient time to separate efficiently and the oil outlet concentrations therefore increase considerably.

As half of the total surface of any inclined parallel plate media is always angled upward, rising oil droplets rarely impact the plates.

In other words, half of surface area of any inclined plate media never supports oil droplet coalescing. It is difficult to see when the inclined plates have to be cleaned ,unless the entire separator is dammed then you know it is time to clean the inclined plates .

FREYLIT by comparison to INCLINED PLATES

With FREYLIT horizontal **wave plate pack separators** on the other hand, the oily water always goes through the corrugated plates colliding with each wave section of the corrugated plates and so the separation efficiencies are always maintained even with increased back pressure due to algae and bacteria growth.

Due to the fact that corrugated plates are stacked on top of each other and the resulting shape (tapered at the corrugation ridges and extended at the corrugation peaks and valleys) the oil-containing water moves along the corrugated plates at varying speed.

This results in additional particle collisions (possibility to coalesce) of bigger (slower) and smaller (faster) oil droplets.

As droplets become bigger, on account of these particle collisions, they accelerate their upward movement, so that they are consequently trapped by the corrugated plates

FREYLIT coalescent plates are arranged in horizontal position in order to fully utilize the complete surface area of each coalescent plate

A weir is installed across the corrugated plates and divides the separator into two chambers and allows indication as to when exactly the corrugated plates need to be cleaned .
When water flows through the separator, the water level before and behind the weir should be equal. However, if the water level before the weir is 10 cm higher than after the weir this shows that the that the corrugated plates are dirty and have to be cleaned .

COALESCENCE MAT

Some manufacturers use coalescence mats as coalescing material
These coalescence mats separate oil droplets out of the water but they only work only with the use of clean water and clean oil.

In the areas of operation of oil separators (according to EN858) it is always **dirty** water with oil.
As the coalescence mats have very fine pores. they are susceptible to dirt clogging them .

Through this dirt, the coalescence mat will be clogged up within a very short time (3-4 weeks) and must be taken out of the and cleaned.

If cleaning of the coalescence mats does not take place on a regular basis, the mats not only become clogged up forcing the water to “By Pass” the mats, but **NO** oil-water separation takes place any longer.

Since there is no indication as to when the mats have become clogged, oil water separation no longer takes place and the oil will be discharged without any separation, over the mats and directly to the sewer .

FREYLIT by comparison to COALESCENCE MAT

The horizontal corrugated wave coalescent plates are stacked on top of each other with a **distance of 12 mm**.

The coalescent plates have to be cleaned after a period of **3 -5 years** (depending on the pollution charge)

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THE GREATEST ADVANTAGE OF FREYLIT OIL WATER SEPARATORS

FREYLIT has the only OIL WATER SEPARATOR system which can do the following

The distance between the plates inside the FREYLIT Oil Water Separator according European Norm EN858 is **12mm**.

The efficiency of the Separator can be increased 4- times by changing the distance between the plates from 12mm to 6mm.

FREYLIT can do this WITHOUT having to change the tank or make any additional civil works.

This can be done by taking the plate packs out of the tank, disassembling the plates and reversing them by 180°.This work can be done in a very short time only.

By turning the plates by 180° another distance holders, which are also part of the underside of the plates, rest into place and the distance between the plates becomes 6mm.

This will increase the oil separation efficiency 4- times.

During the past 23 years the Norms for oil separators where changed 3 times.

Should in the future a higher oil separation efficiency be required, you are ready to comply with the higher standards with a minimum of effort or cost.

MORE ADVANTAGES OF FREYLIT OIL WATER SEPARATORS

- 1) **The know-how** of our oil water separators are the **horizontal corrugated wave plates** which are stacked on top of each other by distance holders.
- 2) **Material:** PP Oleophilic Polypropylene and
POM Oleophilic Polyoxymethylenhomopolymer
POM will be used if the temperature of the oil water mixture is higher than 70° Celsius
- 3) **LIFETIME** MINIMUM 20 Years with proper maintenance

- 4) **FREYLIT has 27 years experience with applications , dimensioning and delivery of OIL WATER SEPARATORS**