

Corrugated Plate Interceptors (CPI), Steel Tank Type (Skim-TKS)

Product Applications

Corrugated Plate Interceptors in Steel Tanks (Skim-TKS Separators) can be designed for above or below grade installation. Skim-TKS separators are applied for a wide variety of oily water at atmospheric pressure such as:

- Ballast water
- Oil surface drain water
- Refinery effluent
- Process water
- Desalter effluent
- Produced water

Material and Construction

All Skim-TKS Separators are of robust construction based upon conventional design procedures and are normally supplied as fully self-supporting skid mounted packages.

Depending on the properties of the liquid to be treated the material of the inclined plate packs can be:

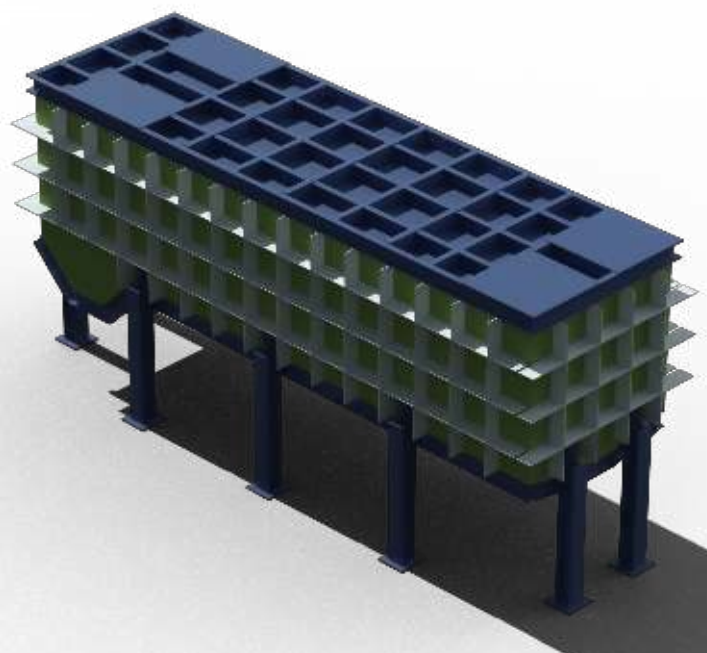
- Glass fibre reinforced polyester (GRP)
- Coated carbon steel
- Various grades of Austenitic Steel (SS304, SS316, DSS, SDSS)
- Teflon-coated steel

Depending on the concentration of suspended solids or free oil, the plate spacing and inclination can be varied to suit the specific process conditions. Thus, we are able to offer to our clients the technically optimised solution for each individual application.

Process Description

The oily water enters the corrugated plate interceptor via a specially designed slotted cross pipe that distributes the flow over the width of the separator tank. Due to the sudden decrease of flow velocity, a certain amount of solids that may be contained in the liquid will settle in the entrance compartment. Depending on the solids concentration, a sludge suction device may be included in the design for the intermittent removal of accumulated solids.

The oily water continues on its way towards the plate packs wall and enters the plate pack from the top on a counter-flow direction. In the laminar flow in each channel (i.e. the distance between two subsequent plates), the minute oil droplets rise by virtue of the fact that their density is lower than that of the carrier medium (i.e. water) and attach themselves to the underside of the upper plate.



The oil film that is thus constantly being formed at the underside of each plate creeps slowly upwards along the plates.

The build-up oily layer is assisted in its upward movement by the counter-current laminar flow.

At the top of each plate the oil film is concentrated (coalesced) by the plates and leaves the plate at the 'highest point' as a thick stream or rising chain of large globules.

The treated water flows through the overflow baffle between the plates towards the outlet; while, the oily layer is being held up above the plate pack section using a retention baffle, thus there is no interference between the separated oil and the clean water.

The separated oil collects as a layer on top of the liquid surface and can be removed intermittently via the adjustable oil skimmer.

Optional Requirements

The Skim-TKS Separator can be provided with the following main optional items:

- Automatic oil skimmer
- Any required alarms and gauges / indicators
- Sludge suction system
- Water & Oil Pumping systems
- Sludge hoppers with motorised augers
- Plate Packs Washing Device
- Sand Jetting Device

