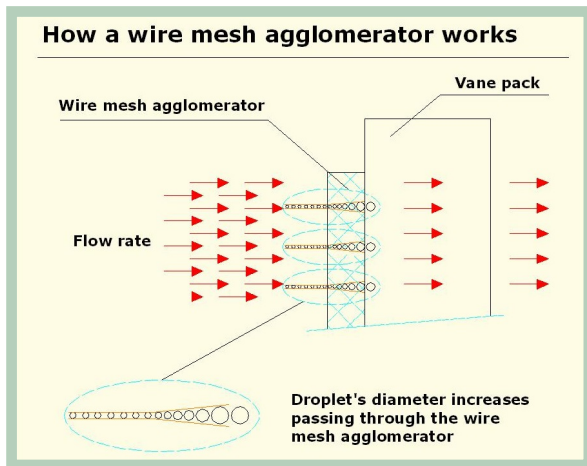


HIGH PERFORMANCES VANE PACKS

1) VANE PACK WITH MESH PAD AGGLOMERATOR



Sometimes:

- > The dimension of the droplets is too small to be intercepted by the vanes (for example 4/5 microns).
- > The flow speed is too high for a normal wire mesh demister and it is not possible to retain the droplets which are torn over the mesh.
- > The required efficiency is too high for a normal vane pack.
- > The diameter of the vessel is too small to install a properly sized wire mesh demister.

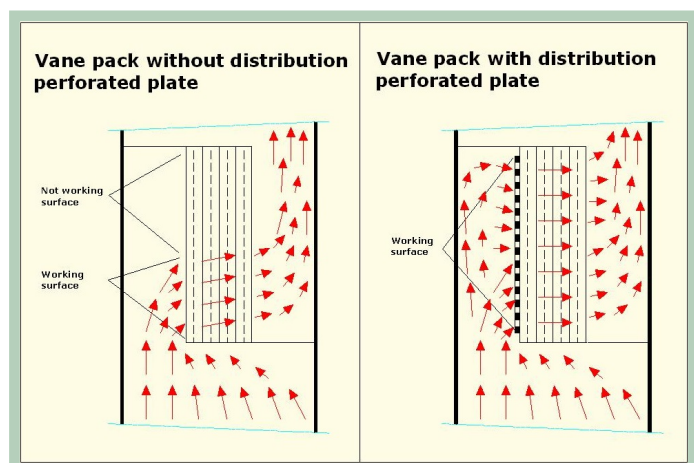
In this particular case, a properly sized wire mesh agglomerator must be applied before the window of the vane pack. As shown in the scheme below, the droplets, passing through the agglomerator, increase their dimension reaching the vane pack with the correct speed and diameter.

2) VANE PACK WITH PERFORATED DISTRIBUTION SHEET

When the diameter of the vessel is too small to allow a correct distribution of the flow, there is the risk that the gas passes through only a fraction of the available area of the vane pack window.

This bad distribution of the gas flow causes two problems:

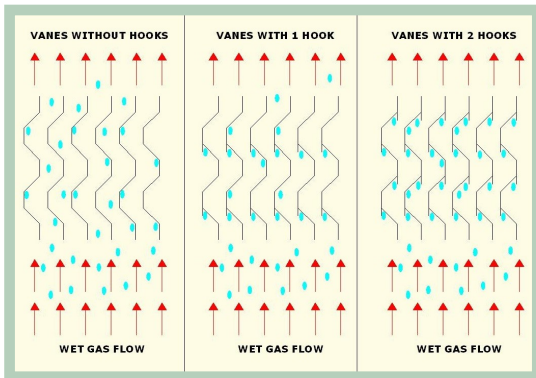
- > An excessive speed of the gas flow through the vane pack.
- > A lower efficiency of the process because many droplets can be captured by the vanes and torn over the mesh.



The problem can be solved applying a perforated distribution sheet that forces the distribution of the flow all over the available area of the vane pack window (see the scheme below).

STANDARD VANE PACK

Vane packs, with wire mesh separators, are the most widely used internals to separate liquid droplets carried by gaseous streams.



- > **Separation:** vane packs are composed of sets of vane profiles where the gas passes through and, changing direction, clashes on the vanes being captured by the hooks. Liquid droplets slide down along the vanes and are drained down by a tube into the liquid section of the vessel.
- > **Crossing speed:** in comparison with wire mesh separators, the crossing speed is usually higher allowing a reduction of the crossing area and of the vessel diameter.
- > **Performances:** however, the diameter of the smallest separated liquid droplet is bigger than in a wire mesh separator. For this reason vane packs are not recommended when a high separation performance is required.

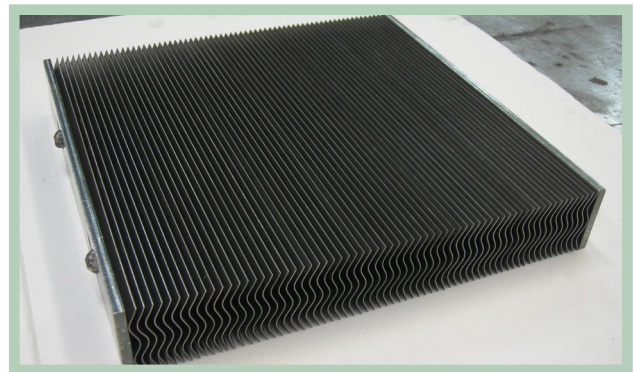
For this reason vane packs are not recommended when a high separation performance is required.

W BANK



The so called "W bank" is a particular kind of vane pack used when to shorten the length of the tank is a priority. Thanks to its particular "W" shape it's possible, with half length of the pack, to obtain an equivalent crossing area and to reduce the dimension of the vessel. The W bank maintains all the characteristics and qualities of normal vane packs and so it's possible to assemble packs with different styles of vanes or stick on a wire mesh agglomerator to increase the separation efficiency.

DRYER FOR CYCLONE



This kind of special vane pack is often used in "steam drums" positioned over cyclones to eliminate small liquid droplets drained by vapour stream. They can be made in different shapes and profiles to get the best performance in terms of droplet separation and pressure drop.