

Efficiency in food and energy processes

New fleece material with special effect halves power consumption

Innovative filter fleece with lotus effect radically cuts energy costs

Herne, German, 15 April 2011 – GEA Air Treatment GmbH, of Herne, Germany, has brought onto the market a filter product based on the lotus effect. LoTex[®] is especially effective in separating droplets of moisture from air flow, by virtue of the fact that this especially processed filter fleece features greatly reduced wettability. Water, oils, and emulsions easily pearl off, instead of evaporating in the filter or resinifying there. These characteristics mean that relatively large amounts of liquids can be separated and – if desired – can be effectively re-used. A further benefit: since the pressure drops with Delbag LoTex[®] filters are appreciably less than those experienced in conventional demisters, power consumption for air filtration is halved. The advantages are double: cost reduction and protection of the environment.

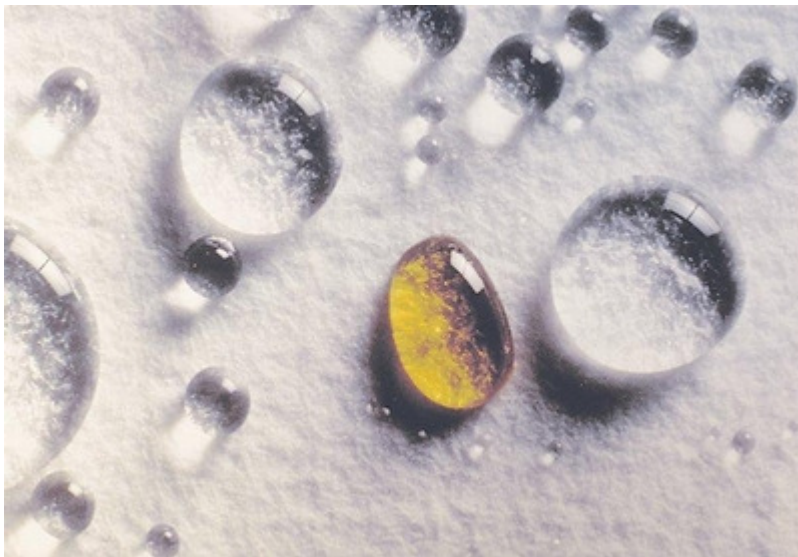
Normally, knitted material made of artificial fibers or stainless steel is used for separation of oil and emulsion mists. Unlike these demisters, Delbag LoTex[®] filter fleece is characterized by initial pressure drops that are lower than conventional systems by a factor of 2 to 3. The filtered liquids flow off faster, with the result that evaporation or resinification (which can clog knitted filter material) do not take place. Low operating costs result from reduced initial and final pressure drops. With air flow of 10,000 m³/h, annual operating periods of 5,000 hours, and fan efficiency of 0.6, the following values result:

	Demister filter	Delbag LoTex[®] Filter
Initial pressure drop at 1.5 m/s	550 Pa	250 Pa
Final pressure drop	1,250 Pa	700 Pa
Power consumption / year	19,190 kWh	9,675 kWh
CO₂ emission for power generation in a modern anthracite power plant (730 g/kWh)	14 t	7 t

Readers with questions can address their queries to:
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Picture: GEA_LoTex_Filter.jpg



Self-cleaning learned from nature: thanks to the lotus effect, oils and emulsions simply pearl off Delbag LoTex[®] filter mats, and can be further used.

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GEA Heat Exchangers / GEA Air Treatment

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