



We provide superior filtration solutions
to improve the quality of life

Freudenberg Filtration Technologies L.P.
Sustainability Initiatives
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December 1, 2010

Sustainability – Different Viewpoints

Wikipedia – “The capacity to endure”

United Nations – 1987 “meet present needs without compromising the ability of future generations to meet their needs”.

Walmart – “to be supplied 100% by renewable energy and create zero waste”

Others:

- Using systems and materials that won't deplete resources
- Energy savings
- Recycled materials
- Reduced Carbon Footprint

Freudenberg Guiding Principle - RESPONSIBILITY

A Commitment to Sustainability

1. Environmental Responsibility

Freudenberg Household Products –

- Silver LEED Certification April 2010
- One of a few in tri-state area to achieve that combines office, warehouse and production facility
- Reduction in Utilities (\$500K) & Waste (50%)



2. Social Responsibility



Tamil Nadu Region of India –

- Non-profit training center
- Courses for welders, plumbers, mechanics
- Young people earn a living while improving the region's infrastructure.

3. Product Responsibility

Product Initiatives –

- Recycle of PET bottles
- Natural fibers in Interlinings
- Lubricants that use natural oils

Freudenberg Filtration Technology Sustainability Initiatives

Product

PCR Materials

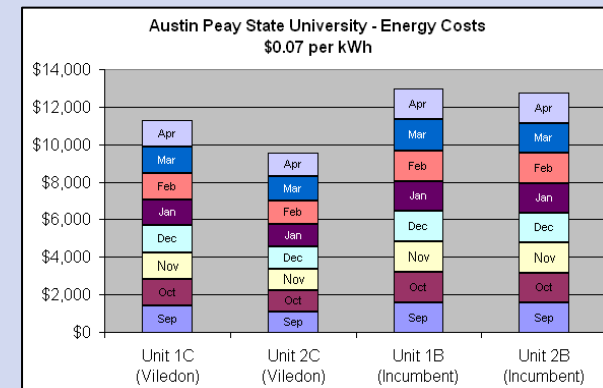


Performance

Energy Savings

Longer Life

Landfill Avoidance



Solutions

Vildeon[®] eee.Sy – The all-in-one
Inlet Air Mass Enhancement System



Product Initiatives



Coolant Media

- EnviroCLEAN
- Automotive Plants
- Strength Performance

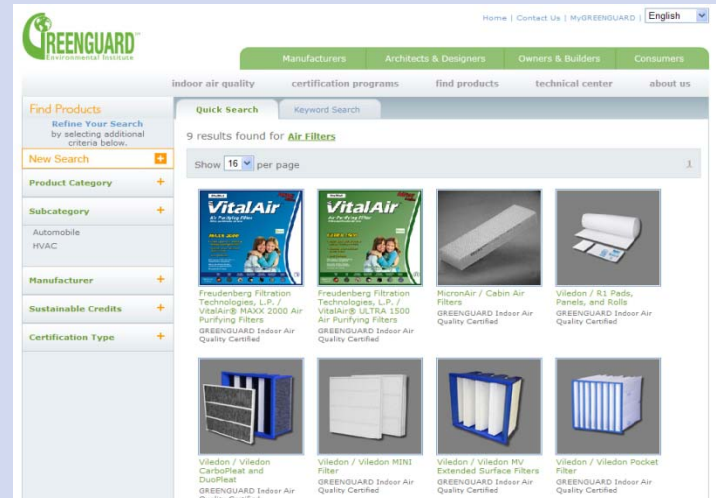


Pool Cartridge

- Newest Product Offering
- Launched November 2010
- Maintains performance



- 3rd party certification
- Assesses emissions of VOC's (i.e. formaldehyde)
- Evaluates product for mold/fungi growth (Viledon synthetic media is not a nutrient source for growth)



Performance Initiative - A Case Study in Energy Savings

Case Study Background

- Customer had interest in energy savings and sustainability
- Business and Aerospace Building, 3rd Floor
- Pursued side-by-side energy consumption comparison study

Incumbent's Product



- Two stages
 - 2" pleated pre-filter
 - 20"x24"x12" box filter

VS.

Viledon



- Single stage – no pre-filter
 - T60S 20"x24"x20" pocket filter
 - 4 pockets per filter



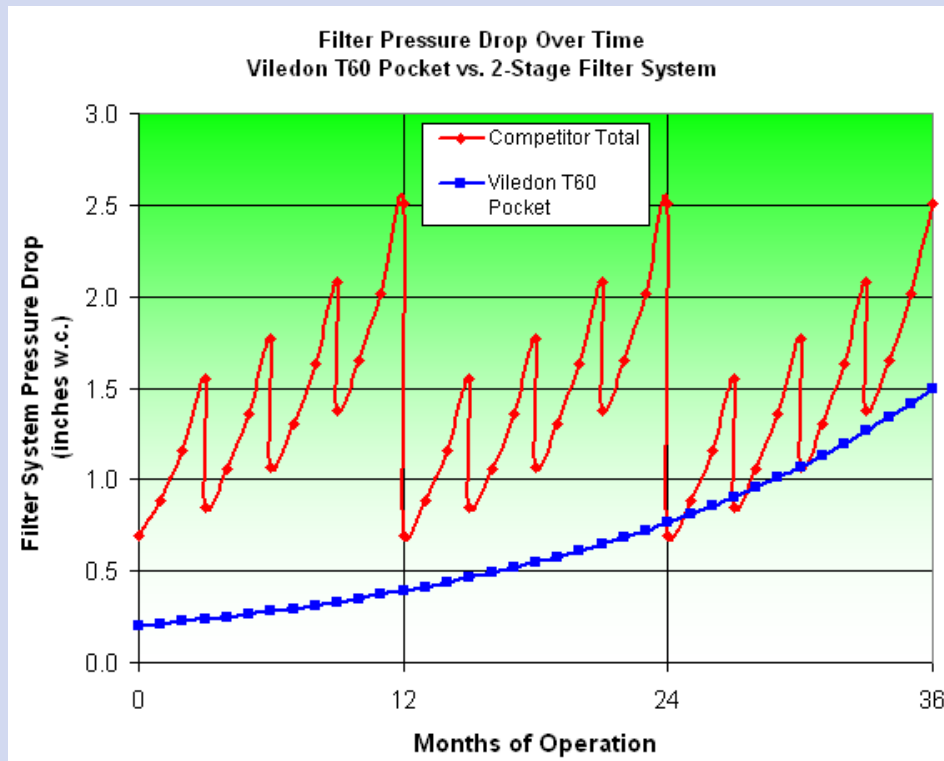
Business & Aerospace Bldg

Filter Installation

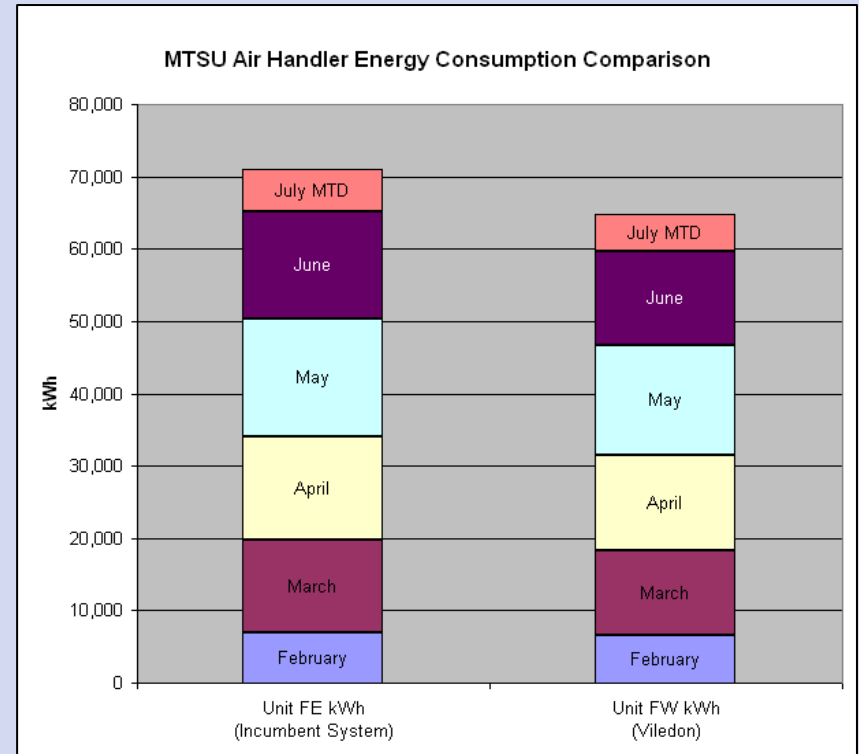
- Side access housing
- 4 rows of 20" tall tracks
- 5 columns of filters 24" wide
- Side-load gasketing

Performance Initiative - A Case Study in Energy Savings

Pressure Drop Comparison Across Filter Banks



Energy Monitoring Results



Sustainability Impact – In Addition to Energy Reduction

- Potential waste reduction on campus
 - Major reduction in filter usage
 - Pre-filters eliminated
 - 3x lifetime of Box / Cell filters
 - Substantial reduction in transportation & packaging

Item Description	Filter Manufacturer		
	Typical Competitor		Viledon
	2" Pleated	Box / Cell	T60S Pocket
Expected Life (months)	3	12	36
# of Filters Used over 3 Yrs (per filter spot)	12	3	1
Total # of Filters per Filter Bank	20	20	20
Total # of Filters Consumed over 3 Yrs	240	60	20

Filter Qty: 300 → 20
 93% potential reduction in usage over 3 yr period



Solution Initiative – viledon eee.sy



Viledon® eee.Sy stands for:

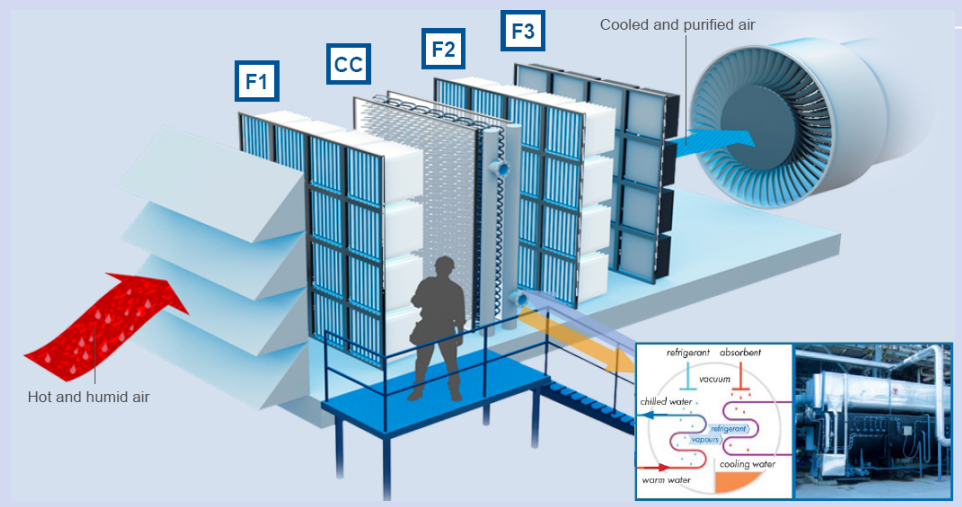
energy efficiency enhancement System

- **Viledon® eee.Sy** is a complete turnkey system for filtering and cooling the inlet air to improve the output of gas turbines, engines and compressors at challenging climate conditions
- **Viledon® eee.Sy** is an entirely unique, patented all-in-one concept for easy and quick integration into any existing turbine plant
- **Viledon® eee.Sy** takes turbine plants to a new level of economical and ecological performance

Addresses the challenges of operating a Gas Turbine in hot, humid climates

Solution Initiative – viledon eee.sy

Based on Vapor Absorption technology and multi-stage filtration , eee.Sy simultaneously filters and cools the air to optimum purity and temperature levels



Some Key Benefits

- Almost no electrical consumption
- Use the waste heat of the plant
- Use just water as chilled fluid circulated in the coil
- Improved capacity in hot season
- Reduced blade fouling

Previous capacity	Current capacity with Viledon® eee.Sy	Percentage capacity increase
27.5 MW	33.5 MW	21.82%
18.0 MW	22.0 MW	22.22%
19.0 MW	22.5 MW	18.42%
19.5 MW	23.0 MW	17.95%
18.0 MW	22.5 MW	25%

In Summary

Sustainability is linked to our Guiding Principle 'Responsibility'

Responsibility is addressed through environmental, social and product efforts

Our filtration activities include product, performance and solution concepts

Freudenberg will continue to develop initiatives in all areas