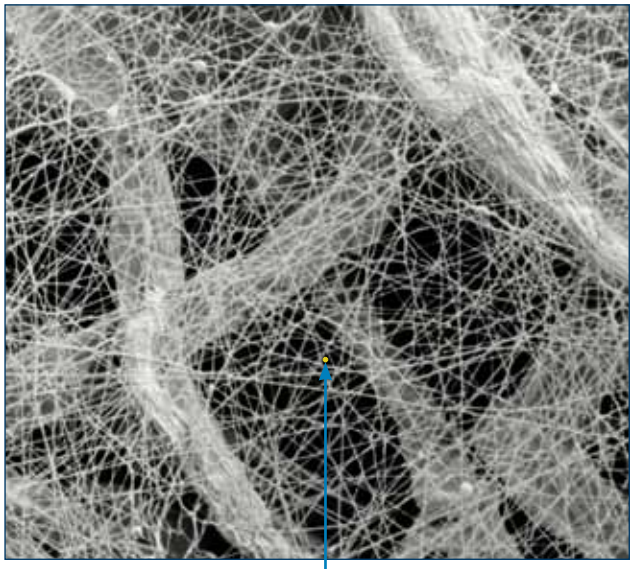
Proprietary Technology That Performs

Proven and proprietary Spider-Web® technology delivers longer filter life, cleaner air and greater cost savings than other types of filter media. Made with an electrospinning process that produces a very fine, continuous, resilient fiber of 0.2-0.3 micron in diameter, Spider-Web forms a permanent nanofiber web with very fine interfiber spaces that trap dust on the surface of the media.

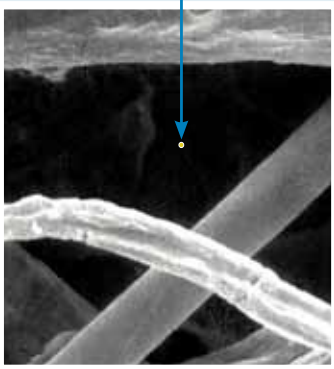
- Superior media, capturing submicron dust particles
- Longer filter life, better pulse cleaning, surface loading technology
- Lower pressure drop, optimal pulse cleaning, maximum turbine efficiency
- Filtration efficiencies to meet specific application needs



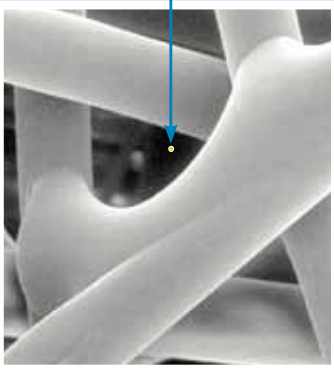
SPIDER-WEB TECHNOLOGY

1 Micron Particulate At 600X

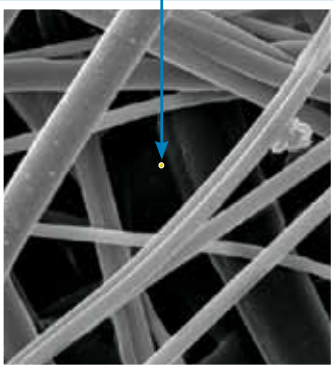
CELLULOSE



BLENDED



SPUNBOND



MELTBLOWN

1 micron = 1/25,400 of an inch

Engineered for Power

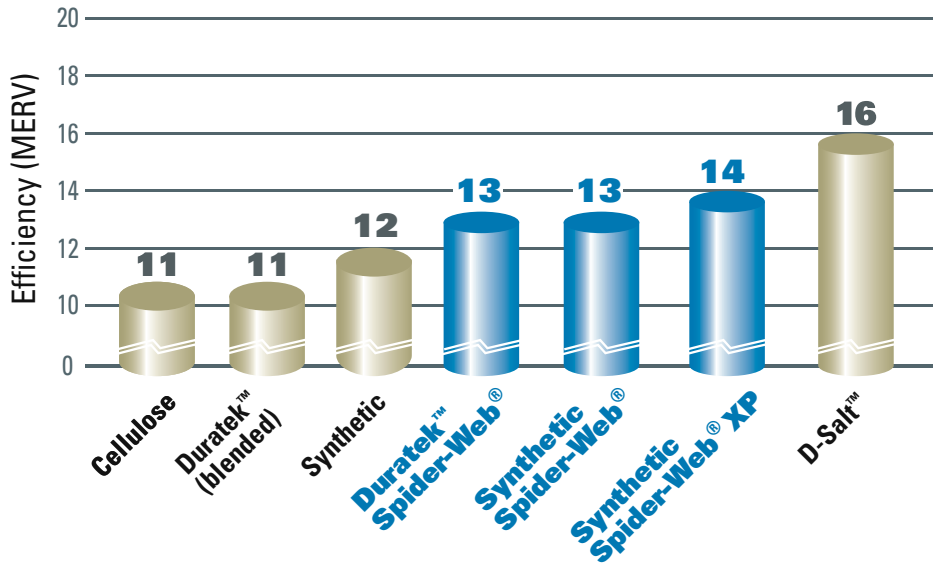
A filter must be rated at least a MERV 13 on the ASHRAE 20-point scale to effectively filter submicron dust particles. Donaldson® has perfected our standard MERV 13-rated Spider-Web filters, optimizing filtration and turbine efficiency without sacrificing filter life or increasing pressure drop.

For applications that require even higher efficiency, there's a Spider-Web filter to meet your needs.

CARTRIDGE FILTER	MERV	3-10 µm	1-3 µm	0.3-1 µm
D-Salt™	16	✓	✓	✓
Synthetic Spider-Web® XP	**14**	✓	✓	✓
Synthetic Spider-Web®	**13**	✓	✓	✓
Duratek™ Spider-Web®	**13**	✓	✓	✓
Synthetic	12	✓	✓	✗*
Duratek™ (blended)	11	✓	✓	✗*
Cellulose	11	✓	✓	✗*

* Spider-Web efficiently captures submicron dust particulate. Cellulose, blended, and synthetic media are not efficient enough to rate on submicron dust particulate. Typical cellulose and blended media are rated to capture 1-3 micron dust particles and some competitive blended media is only rated to capture larger 3-10 micron particulate.

HIGHER EFFICIENCY + LOWER ΔP = MORE POWER



Spider-Web MERV 13 and 14 efficiency has been certified by independent lab tests and tested per the ASHRAE 52.2, the most current industry accepted test method used to evaluate filter performance.

Why Low ΔP is Important

Generally accepted industry guidelines suggest that for each 4 "wg of pressure drop, a power plant can experience a loss in turbine output power of somewhere between 1% and 1.4%. Based on this guideline, if a base load system (running at about 8000 hours per year) experiences an incremental pressure drop of 25 mm wg (1 "wg), that pressure drop would translate into a loss of output of 0.25%.

As the leader in nanofiber media technology, Donaldson Spider-Web helps maintain lower average ΔP over the life of the filter while delivering higher filtration efficiency. Spider-Web filters keep performing and delivering higher turbine output throughout their lifespan.

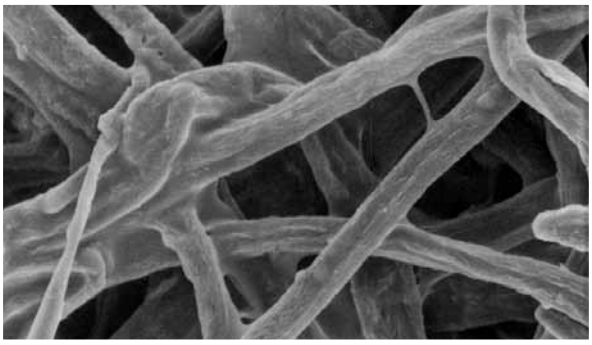
LOWER ΔP INCREASES POWER OUTPUT

	Commodity Element	Spider-Web® Nanofiber Media
Number of Element Pairs	528	528
Turbine Airflow (ACFM)	772,000	772,000
Average stabilized ΔP over 2 year period	3.5"	2.5"
Hours of operation	16,000	16,000
Power Output	175 MW	175 MW
MW-Hrs	2,800,000	2,800,000
MW-Hrs Lost due to ΔP increase	14,000	7,000
Spider-Web Savings	N/A	$700,000

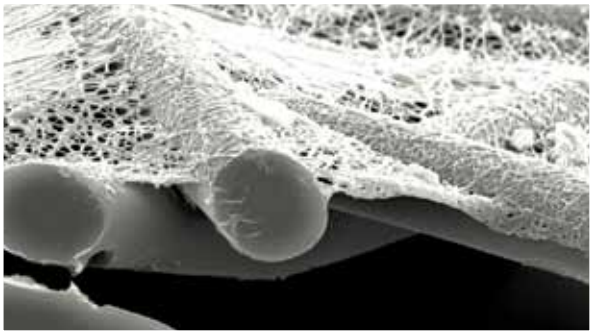
Assumes turbine output at ISO conditions, example is a base load system operating at 8,000 hrs/year @ $100/ MW-Hr. with an initial ΔP of 1.50".

3 Decades of Superior Turbine Protection

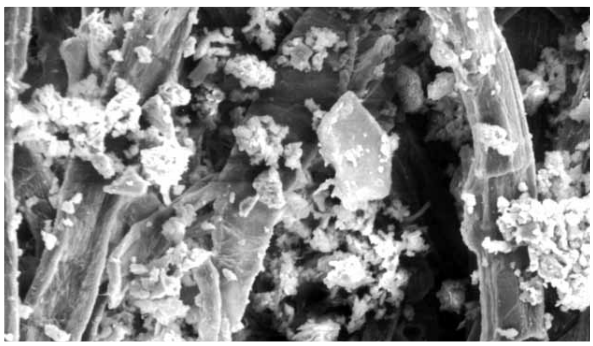
For more than three decades, Donaldson has advanced our Spider-Web technology to provide a complete line of filters that last up to twice as long as commodity filters. Pressure drop rises quickly with commodity filters, resulting in shorter filter life, reduced power output and increased maintenance cost. Spider-Web high efficiency filters provide superior gas turbine protection, lower operating pressure drop and longer filter life.



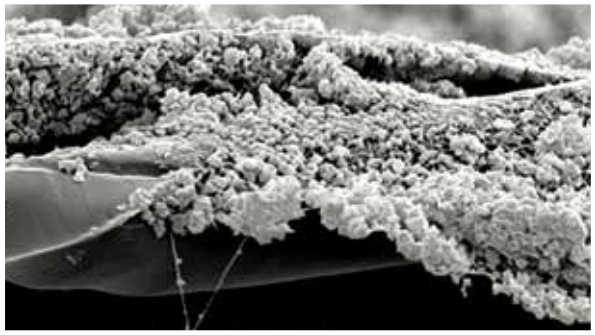
CLEAN COMMODITY FILTER



CLEAN SPIDER-WEB FILTER



LOADED COMMODITY FILTER



LOADED SPIDER-WEB FILTER

DIRTY TURBINE BLADE

CLEAN TURBINE BLADE

SPIDER-WEB FILTERS ARE ALSO AVAILABLE FOR THE FOLLOWING INLET SYSTEMS:

- AAF®
- Braden
- Camfil Farr
- GE/Altair
- Pneumafil
- VAW
- Plus many others

Donaldson
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SPIDER-WEB®

Filter Media Engineered for Power

Gas Turbine Systems