Filter Life Expectation Testing

For more than 45 years the filtration industry has connected the name “Braden” to experience and trusted engineering for air filtration solutions.

Beginning with a rich history of filtration science and technology Braden Filtration understands the operational challenges users experience and offers a variety of laboratory and field assessments to assist customers in maximizing performance.

If you have gone hours, months or years with a set of filters feel free to review the following information and consider what filter life and expectation testing may offer for your operation.

Most air filter manufacturers have the capability to perform a variety of mechanical evaluations such as Mullen burst tests and airflow restriction. And it is not uncommon to offer no charge filter testing.

If you have periodically sent filters for testing and are satisfied with current filter performance, unless you question the accuracy or completeness of your current supplier stay with that testing as the data is more readily comparative.

When Does it make Sense to go to an independent Lab?

- You are not satisfied with current life.
- You are looking to upgrade
- Feel you lack knowledge of filtration or historical performance

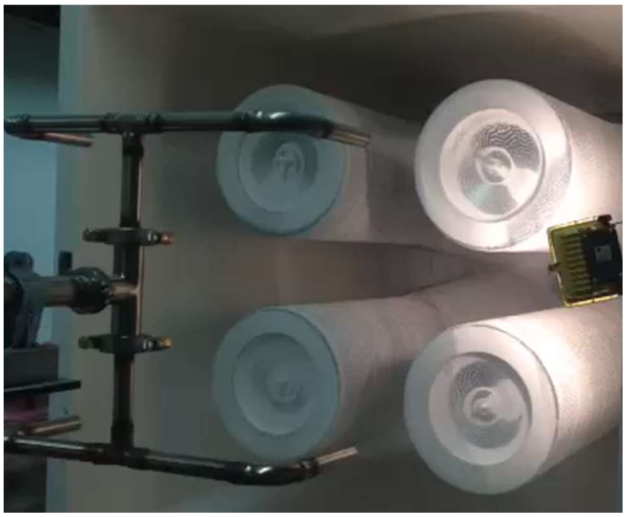
If you are interested in options for filter performance improvement, then using an independent test lab will verify the same mechanical information but also confirm if the filter is performing up to published standards. This is sometimes a more difficult thing to receive from a vendor that has a personal interest in the evaluation and results.

An informed Testing Process

- **Characterization** – Confirmation of filter type and construction including: Dimensions, Metal Construction, Media Type, Media Area, Photographic Identification, as received filter weight, SEM Analysis
- **Mechanical Properties** – Mullen Burst Testing, Frazer permeability (as received, after Vacuum), comparison with new and unused.
- **Performance Data** -Air flow resistance curve as received, initial fractional efficiency (MERV Estimate)
- **Test Summary and Conclusions** – Commentary on the results of the test with a summary of observations, data or concerns, recommendations

Filter Life Expectation Testing

As with any decision, more accurate information leads to a better and more informed decision. If your objective is simply to determine what level of additional life a set of filters may be able to achieve, your process is simple.



Certifications

Blue Heaven Technologies
2820 S. English Station Road - Louisville, KY 40299

DATE: 10-Dec-18 TEST NO. 18-589-3

EN 779:2012 Test Report

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Filter Description	Manufacturer	Braden Filtration, LLC
	Filter Model	TriCel S-F9D
	Part Number	FE175018
	Filter Type	Single Header
	Nominal Face Dimensions (in)	23.4" x 23.4" x 11.8"
	Nominal Face Dimensions (mm)	594 mm x 594 mm x 300 mm
	Est. Gross Media Area (ft² / m²)	190.87 / 17.73
	Media Type	Synthetic/Glass
	Adhesive/Amount	Urethane
Test Conditions	Dust Type	ASHRAE
	Aerosol	DEHS
	Test Air Flow Rate (cfm / m³/h)	2520 / 4284
	Test Air Temp (°F / °C)	51 / 10.6
	Relative Humidity (%)	39
	Barometric Pressure (In. Hg.)	29.52
Test Results	Initial Resistance ("w.g. / Pa)	0.45 / 113
	Final Resistance ("w.g. / Pa)	1.8 / 450
	Initial Efficiency at .4 microns (%)	73%
	Average Efficiency at .4 microns (%)	95%
	Initial Arrestance (%)	>99
	Untreated / Discharged Efficiency of Media (%)	73 / 73
	Average Arrestance (%)	>99
	Dust HoldingCapacity (grams)	268
	Classification (final dp in pascals)	F9 at 450 Pa

The above standards are typically provided by suppliers to the turbine OEMs to certify the initial performance and encourage suppliers to maintain that high level of quality that turbine OEMs expect.

These same minimum levels are helpful to compare from one supplier to another to assist users when evaluating options based upon reaching specific performance expectations.

Select a formal testing format

- ASHRAE 52.2- 2012
- EN779-2012

Filter testing standards are used to establish initial flow resistance, efficiency and dust holding capacity.

Compare your “used Filter” results against those of original certifications. Understand the limitations and performance expectations for your filter

Quality In, Quality Out

The better the data you provide, the more relevant the comparisons and conclusions might be. Most of the information called out for in the required information is important. The most important being:

- Operating data of the turbine including maximum airflow,
- Design components of the filter house
- Atmospheric influences.
- Typical run hours

The success of a filter “life extension” or “life expectation” testing program greatly depends upon the specific objectives of the user. Either effort drives a learning experience about filtration in general and normally delivers a better understanding on operational issues and actions that need to be considered.

For more information regarding filter analysis or how to address specific performance issues, contact: sales@bradenfiltration.com