

Solving Your Facility Challenges




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Air Filters Northwest, Inc.

PERMATRON

AIR FILTRATION SINCE 1957

PREVENT[®]

AIR INTAKE FILTER

BEFORE



AFTER



✓ Optimize Operating Efficiency

According to EPA research 0.042" of dirt on an air conditioning coil can reduce its efficiency by 21%.

✓ Reduce Energy Consumption

According to the DOE more than 120,000 chillers in the U.S. are expending more than 30% in additional energy through operational inefficiencies. Annual Operating Cost of 100 Ton Chiller can go from \$18,600 to \$48,300 as performance deteriorates. (www.energyinc.net)

✓ Extend Equipment Life/Reduce Repairs

More air conditioning units fail because they are not clean, rather than because of mechanical problems. Clogged air intakes restrict critical air flow and strain compressor motor. Proactive solutions reduce downtime.

✓ Reduce Maintenance/Labor Costs

A pre-filtration defense that captures debris before it enters the system -- easily cleaned with a broom or shop vac. Coil cleaning procedures can cost \$500-\$6,000 per cleaning on multiple units. Large facilities can average 200 coil-cleaning procedures annually. (RSES Journal)

✓ LEED Credits



Mechanical systems are the second largest user of energy in most buildings. Dirty coils use as much as 37% more energy -- 10 Ton A/C system provides only 7 Tons of cooling.

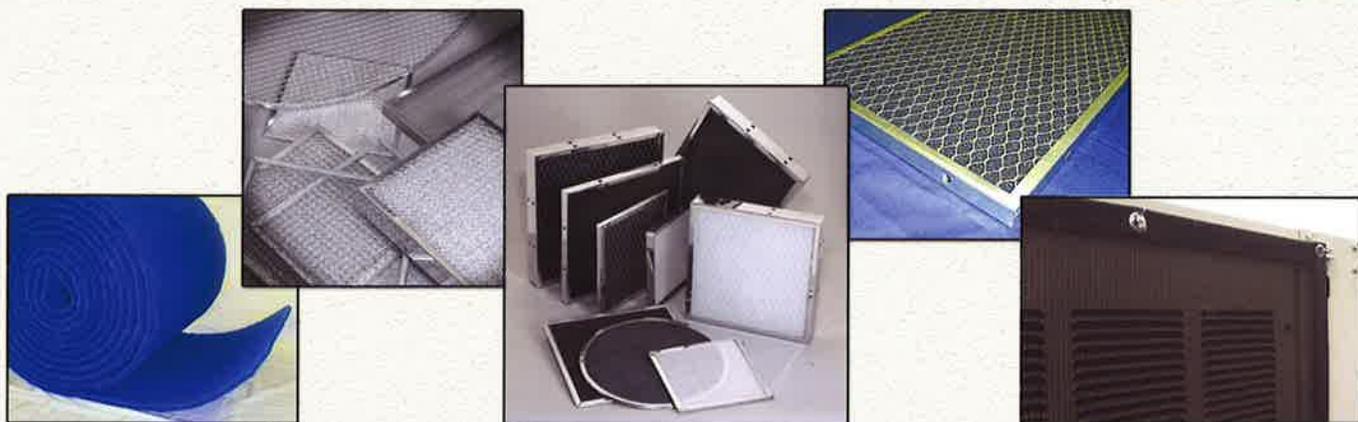
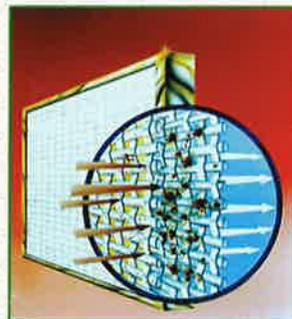
(Air Conditioning Heating & Refrigeration News)



WASHABLE FILTERS MEAN LEAST COST OVER USEFUL LIFE

Exclusive Accumulator Chamber® Design

Using a unitized filter bank design, our electrostatic filters contain multiple sets of media assembled with distinct separation to create our Accumulator Chamber® triple action filtration system. The prefilter/afterfilter assembly promotes free air flow with superior dust holding capacity while resisting face loading.

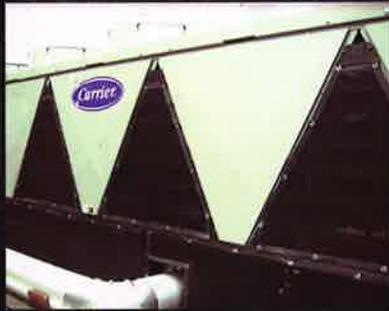


	FILTER MODEL	COMPONENTS	THICKNESS	INITIAL RESISTANCE TO AIR FLOW	ARRESTANCE EFFICIENCY	DUST HOLDING CAPACITY	WARRANTY
PREVENT EQUIPMENT PROTECTION	Model U1	PREVENT® EQUIPMENT PROTECTION FILTER 1 Layer Polypropylene Media Flexible Vinyl Edge	1/8"	0.02 in. w.g.	42%	67 grams	5 Years
	Model U2	PREVENT® EQUIPMENT PROTECTION FILTER 2 Layers Polypropylene Media Flexible Vinyl Edge	1/8"	0.05 in. w.g.	72%	100 grams	5 Years
	Model BHA	PREVENT® EQUIPMENT PROTECTION FILTER 1 Layer Polyvinyl Coated High Abrasion Media Flexible Vinyl Edge	1/8"	0.02 in. w.g.	N/A	N/A	5 Years
	Model R1	PREVENT® EQUIPMENT PROTECTION FILTER 1 Layer Polypropylene Media Rigid Galvanized Steel Frame	1/8"-3/8"	0.02 in. w.g.	42%	67 grams	5 Years
	Model R2	PREVENT® EQUIPMENT PROTECTION FILTER 2 Layers Polypropylene Media Rigid Galvanized Steel Frame	1/8"-3/8"	0.05 in. w.g.	72%	100 grams	5 Years
	WASHABLE COMMERCIAL	Model IN	WASHABLE ELECTROSTATIC FILTER Polypropylene Media & Wire Reinforcement Accumulator Chamber® Design Galvanized or Stainless Steel Frame	1/2", 1", 2"	1"-0.11 in. w.g.	78%	130 grams
Model HFA		WASHABLE ELECTROSTATIC FILTER Polypropylene & Non Woven Polyester Media Accumulator Chamber® Design Galvanized or Stainless Steel Frame	1/4", 1/2", 1", 2"	1"-0.20 in. w.g.	89%	120 grams	5 Years
Model FFA Model FFG		20 PPI WASHABLE FOAM FILTER Aluminum Frame & Mesh Reinforcement Galvanized Steel Frame & Mesh Reinforcement	1/4", 1/2", 1"	1"-0.13 in. w.g.	N/A	N/A	5 Years
Model PFLO1524 Model PFLO2025		POLYESTER RIGID PAD - HOGS HAIR ALTERNATIVE 15" x 24" Pad - Needs No Frame 20" x 25" Pad - Needs No Frame Bi-directional Air Flow - Cleans Easily With Water	1/2" 1"	0.03 in. w.g. 0.09 in. w.g.	69% 84%	359 grams 229 grams	Disposable Disposable FMVSS302
Model SME		SYNTHETIC MIST ELIMINATOR COALESCING FILTER Layers honeycombed, corrugated & tubular polypropylene Stainless Steel Frame & Wire Reinforcement	2"	N/A	N/A	N/A	5 Years
Model MME		MIST ELIMINATOR METAL MESH FILTER 12 Layers Bonded & Corrugated Aluminum 0.17-0.19 1 Piece Aluminum Frame Wire Reinforcement	1" 2"	0.05 in. w.g. 0.06 in. w.g.	N/A	N/A	5 Years
Model MMA		ALUMINUM METAL MESH FILTER 5 Layers of Corrugated Aluminum Mesh Wire Reinforcement Aluminum Roll Formed Frame	1/2", 1", 2"	1"-0.03 in. w.g. 2"-0.04 in. w.g.	N/A	N/A	5 Years
Model MMS		STAINLESS STEEL METAL MESH FILTER Maximum Temperature 900°	1", 2"	1"-0.07 in. w.g.	N/A	300 grams	5 Years
Model MMG		GALVANIZED STEEL METAL MESH FILTER Maximum Temperature 425°	1" 2"	0.05 in. w.g.	N/A	290 grams	5 Years
Model MMH		HEAVY DUTY ALUMINUM METAL MESH FILTER Maximum Temperature 275°	1" 2"	0.077 in. w.g.	N/A	585 grams	5 Years
Model RH	ALUMINUM RANGEHOOD/APPLIANCE FILTERS Multiple Layers Bonded Aluminum Media & Frame	1/8"-1/2"	0.06 in. w.g.	N/A	N/A	5 Years	

ALL MODELS U/L CLASSIFIED AS TO FLAMMABILITY



Office Building
Rooftop Economizers



Electronics Manufacturing Plant
Condensing unit with
Microchannel Coils



Office Building
Rooftop AC Unit



Willowcreek Church
Marley Cooling Tower



Glass Processing Plant
Cooling Towers

A Proactive Approach to Equipment Maintenance Begins with Proper Filtration

Well maintained equipment costs less to operate, promotes optimal life expectancy and energy efficiencies. Ensuring that your equipment delivers consistent high-level performance minimizes the need for unnecessary service calls and costly repairs.

These are just a handful of the product applications where Permatron air filtration products have made a difference and effectively solved facility challenges.

Complete product application case history articles can be obtained by calling our customer service department or visiting our website:

www.permatron.com
1-800-882-8012
sales@permatron.com



Physics Laboratories
HVACR Equipment



Cooling Equipment Air Intakes
Portable Chillers And
125 Ton Cooling Tower



Grocery Store Chain
Rooftop Condensing Units



Osram Sylvania Plant
Thermal Care Cooling Tower



Drilling Rig Air Intake



Marine & Corrosive Environment Air Filters

Marine environments can be very unforgiving places to operate costly equipment and maintain occupant safety and comfort. Extreme weather conditions and sea salt sprays often create a corrosive environment. Common complaints in the luxury boating/shipping industry include a build up of airborne dust particles, bacteria and molds.

DURALO™ : Contains all electrostatic polypropylene media. Woven media is manufactured from non porous filament, which will not absorb or retain moisture, and does not encourage the growth of mold, bacteria, viruses, yeast or fungi. Containing our exclusive Accumulator Chamber® construction, this filter is designed to work in applications requiring very low resistance to airflow or high velocity air flow. 1" or 2" thick stainless steel frame available.

DURAFOAM™ : Contains a combination of electrostatic polypropylene and urethane foam. Used for applications needed greater arrestance efficiency. Holds up well in wet environments including salt water, and can also be used for pond and water filters. ½" thick stainless steel or 1" thick black plastic or stainless steel frame available.

DURALOFT® : Contains rigid high loft PermaFlo® polyester media. Used for applications needing greater moisture condensation surface area. 1" thick black plastic or stainless steel frame or 2" thick stainless steel frame available.



- MODEL #DURALO-1"
- MODEL #DURALO-2"
- MODEL #DURAFOAM-1/2"
- MODEL #DURAFOAM-1"
- MODEL #DURALOFT-1"
- MODEL #DURALOFT-2"

- All three models are encased in a front and rear black polymer grid for added support
- All plastic filters are made to withstand corrosive environments, including thorough cleaning practices that include chlorine bleach
- 5 Year Warranty

	DURALOFT	DURALO	DURAFOAM
MERV Rating 1" or 2" THICK	5	N/A	6
Initial Air Flow Resistance ½" THICK	N/A	N/A	0.09" w.g.
Initial Air Flow Resistance 1" THICK	0.05" w.g.	0.05" w.g.	0.08" w.g.
Initial Air Flow Resistance 2" THICK	0.12" w.g.	0.06" w.g.	N/A



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MODEL IN

IN-1", IN-2", IN-1/2"

Available in galvanized, stainless steel, or aluminum frames



An electrostatic air filter that contains two 1/4" thick steel panels in a one or two inch thick steel outer frame. Each panel contains two layers of our custom woven industrial polypropylene media with a 3-dimensional waffle weave and expanded wire support both front and back for added durability. The polypropylene and wire support are pressed into the 1/4" thick steel panels, allowing the Model IN to be utilized in high velocity systems. The fiber thickness of these four layers of polypropylene media gives the Model IN an extended dust holding capacity. Model IN offers the exclusive Accumulator Chamber[®] that increases freedom of air flow and maximizes dust holding capacity.

Performance:

- Average Arrestance Efficiency: 78%
- Dust Holding Capacity: 130 gm.
- Initial Air Flow Resistance: 0.11" w.g.
- U/L Classified as to Flammability only
- 5 Year Warranty

Applications:

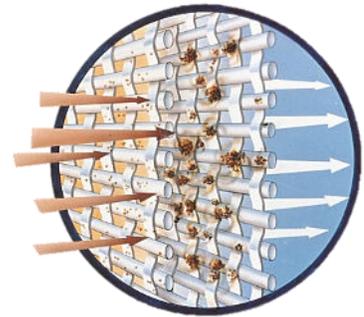
- Industrial applications where potential dirt load is high and where low resistance and clean ability are critical
- In locations where high velocity air is pushed through limited filtering surface areas (often found in older HVAC systems)

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The Exclusive Accumulator Chamber® Efficient by Design

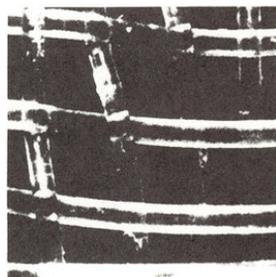
Since 1957, Permatron products have featured the unique Accumulator Chamber® construction for effective and efficient filtration. Years of experience, many thousands of filters and independent laboratory tests have proven that the engineering design of Permatron air filters enables them to outperform the competition.

Each one and two inch thick Permatron filter represents a miniature filter bank; there are in fact two filters in one. The outer steel frame holds two 1/4" panels also housed in steel frames. The three-frame construction, although lightweight, maintains strong support and assures that the media is firmly held in place even over long, hard use.

Between the two filter panels in an air space that is 1/2" wide on a one-inch filter, and 1 1/2" wide on a two-inch filter. This is our exclusive Accumulator Chamber.

Permatron woven filter media allows air to flow through, enhancing its electrostatic charge. This media never loses its charge, as it is an inherent property. The airborne particulates are attracted to the media fibers like iron filings to a magnet. The particulates, attracted to the fibers in the direction of air flow, build up on the fibers without face loading.

If an excess of particulates builds up (due to high concentrations in the air, or failure to clean the filter regularly) on the prefilter, they tend to break off, allowing air flow to sweep them through the prefilter into the Accumulator Chamber. Cross currents within the Accumulator Chamber cause further agglomeration and some settlement until the filter is rinsed. The afterfilter (back panel) attracts and holds particles that escape the prefilter or do not respond to an electrostatic charge.



Filters with woven plastic fabric are commercially available. Many claim electrostatic properties, which they may have, but to varying degrees. Other materials may include supporting wire and layers of non-woven media or foam. These materials are often stacked together in a frame. Filters with this stacked construction can certainly be effective, but may also exhibit key engineering disadvantages. Whereas the initial pressure drop is within acceptable levels, after six months to a year of usage, residual particulates can accumulate between the compressed layers. In this case, even a filter that has been cleaned according to the manufacturer's instructions may have developed an abnormally high pressure drop, or resistance to air flow, and this seriously impairs its effectiveness.

Engineers are primarily concerned with high pressure drop and the interference with air flow negatively associated with some air filters. High pressure drop and clean ability weigh heavily in the engineer's decision not to purchase such air filters.