Flanders/FFI
FOREMOST IN AIR FILTRATION

Pre Pleat 40

MERV 8 Extended Surface Pleated Filters

Bulletin PB700-0607

ENVIRONMENTALLY FRIENDLY

General

The MERV 8 Pre Pleat 40 filter features a filtering medium that is more efficient and ecologically friendly. Made from recyclable materials, this medium achieves MERV 8 efficiency with low resistance to airflow. It is also unaffected by high humidity and is hydrophobic (non-moisture absorbing.)

Pre Pleat 40 filters can upgrade existing flat panels as well as MERV 6 and 7 pleated filters currently being used with little increase in resistance. Available in 1, 2 and 4 inch depths, standard and high capacity versions. All PrePleat 40 filters are 30-35% efficient by ASHRAE 52.1-92 and MERV 8 per ASHRAE 52.2-99.

These filters are suitable for variable air volume systems. Operating face velocity ranges for 1 in. and 2 in. filters are from 0 to 500 fpm, and 4 in. filters are from 0 to 625 fpm. Pre Pleat 40 filters are UL 900 Class 2 listed but are available with UL Class 1 listing.

Versatility

Most heating, air conditioning, or ventilating systems can be upgraded with the use of Pre Pleat 40 filters in place of existing flat panel types. The overall design of this product makes these filters the accepted choice in applications requiring high performance and extended service. The inherent strength of the filter allows for easy change out as it will not collapse, warp, or bend in normal service.

Pre Pleat 40 filters are available in a wide range of sizes and will fit most commercial and industrial installations with little or no system modification. Fasteners are available to adapt the filter to existing filter banks.

Installation Considerations

Pre Pleat 40 pleated filters are suitable as primary filters and can be installed in Astr Holding Frames, K-Trac Framing Modules, Surepleat Side Access Housings and similar existing hardware. They may be used as prefilters for Precision Pak, Super Flow® V, PrecisionCell and Rigid-Air filters in these framing systems and in Sureseal Side Access Housings.

PrePleat 40 “elements” and “rolls” are also offered. These are pleated sections of PrePleat 40 media in selected widths with the metal backing for use in a reusable metal frame.

Physical Data

Media: 100% Non-woven synthetic media manufactured from recyclable material

Media Support: Diamond-shaped expanded metal

Pleat Design: V-Pleat

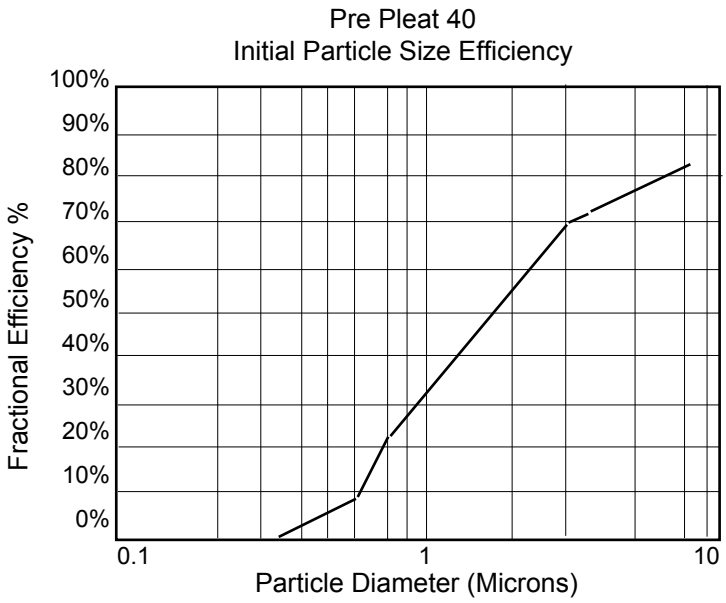
Pleat Count:

Economy Standard: 1”=13, 2”=10, 4”=9
High Capacity: 1”=15, 2”=15, 4”=13

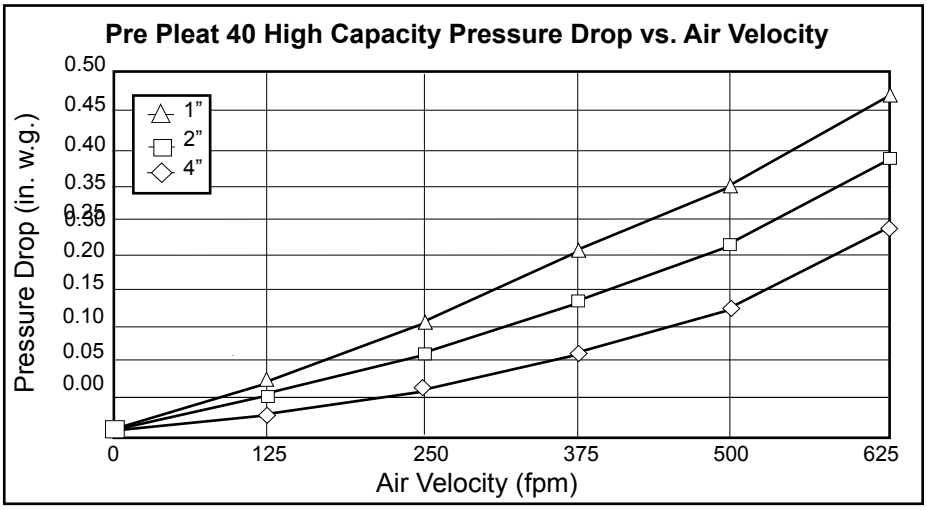
Frame: Moisture-resistant clay coated frame made with recyclable material

Important Features

- Ecologically advanced filtration medium made from recyclable materials
- Media maximizing V-pleat design
- Expanded metal grid prevents media flutter while in operation
- Diagonal and horizontal support members provide frame strength
- Filter media pack is sealed to eliminate air bypass
- Average efficiency is 30-35% per ASHRAE 52.1-92
- Average arrestance is 93%
- MERV 8 per ASHRAE 52.2-99



Size Range (micron)	Inital Fractional Efficiency (%)
0.35	1.0
0.475	3.0
0.625	9.6
0.85	23.3
1.15	33.8
1.45	42.3
1.9	51.7
2.6	63.4
3.5	71.5
4.75	74.9
6.25	78.03
8.5	83.0



The Pre Pleat 40 extended-surface pleated filter is manufactured with Recyclable Synthetic Fibers. It offers all-mechanical efficiency, non-electrostatically charged. The result is a MERV 8 filter media with low resistance to airflow. It is engineered to be manufactured with ecologically friendly components while delivering optimum performance.

Flanders extensive Research and Development led to the ultimate design in a 100% synthetic media matrix at the same cost of competitive MERV 6 and MERV 7 filters. Our unique MERV 8 filter media is so dynamic that during developmental testing, we were actually achieving MERV 9 efficiency levels at MERV 6 and MERV 7 air flow resistances, without electrostatic enhancement.

- **Media is manufactured from recyclable materials.**
- **100% synthetic, hydrophobic (non moisture absorbing) fibers.**
- **Synthetic fibers do not promote microbial growth as in Poly-Cotton media blends and contain no toxic dyes.**
- **Proprietary media matrix consisting of 4 layers in two deniers and 2 fiber geometries gives MERV 8 efficiencies right out of the box and will not diminish with time as electrostatic medias can.**
- **Die cut clay board frame is made from recyclable paperboard.**
- **Expanded wire backing support is made from 100% recycled scrap steel treated to resist corrosion.**

Some performance values shown in this publication may be averages or estimates intended to generally represent product styles. Contact factory for latest test data on specific Flanders Precisionaire models.

Performance Data

Capacities and Dimensions

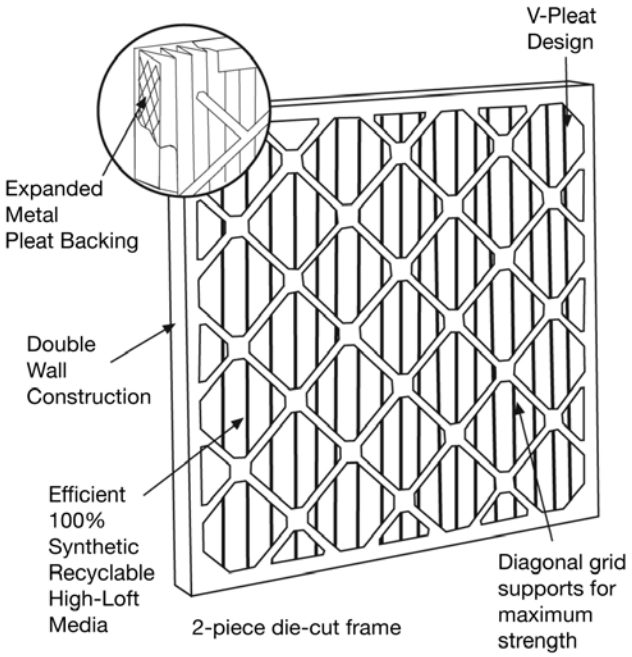
Nominal Depth (in.)	Nominal Size WxHxD (in.)	Standard Capacity						High Capacity					
		300 fpm		500 fpm		Media Area sq. ft.	Wt. Each (lbs.)	300 fpm		500 fpm		Media Area sq. ft.	Wt. Each (lbs.)
		cfm	PD	cfm	PD			cfm	PD	cfm	PD		
1	10 x 10 x 1	210	0.20	347	0.35	1.1	0.2	210	0.20	347	0.34	1.6	0.2
	10 x 20 x 1	417	0.20	694	0.35	2.1	0.3	417	0.20	694	0.34	3.0	0.4
	12 x 20 x 1	500	0.20	833	0.35	2.6	0.4	500	0.20	833	0.34	3.6	0.5
	12 x 24 x 1	600	0.20	1000	0.35	2.9	0.5	600	0.20	1000	0.34	4.3	0.6
	14 x 20 x 1	583	0.20	972	0.35	2.9	0.5	583	0.20	972	0.34	4.2	0.6
	14 x 25 x 1	729	0.20	1215	0.35	3.6	0.6	729	0.20	1215	0.34	5.3	0.7
	15 x 20 x 1	625	0.20	1042	0.35	3.0	0.6	625	0.20	1042	0.34	4.4	0.7
	16 x 20 x 1	667	0.20	1110	0.35	3.3	0.6	667	0.20	1110	0.34	4.9	0.7
	16 x 25 x 1	834	0.20	1390	0.35	4.1	0.7	834	0.20	1390	0.34	6.1	0.8
	18 x 24 x 1	900	0.20	1500	0.35	4.5	0.7	900	0.20	1500	0.34	6.8	1.0
	18 x 25 x 1	938	0.20	1562	0.35	4.7	0.7	938	0.20	1562	0.34	6.5	1.0
	20 x 20 x 1	834	0.20	1390	0.35	4.2	0.7	834	0.20	1390	0.34	6.7	0.8
	20 x 24 x 1	1000	0.20	1667	0.35	5.1	0.8	1000	0.20	1667	0.34	5.4	1.0
	20 x 25 x 1	1042	0.20	1735	0.35	5.3	0.8	1042	0.20	1735	0.34	7.3	1.0
	24 x 24 x 1	1200	0.20	2000	0.35	5.9	0.9	1200	0.20	2000	0.34	7.6	1.1
	25 x 25 x 1	1303	0.20	2170	0.35	6.6	1.0	1303	0.20	2170	0.35	8.9	1.1
2	10 x 20 x 2	417	0.16	694	0.28	4.1	0.6	417	0.16	694	0.27	6.4	0.8
	12 x 20 x 2	500	0.16	833	0.28	5.1	0.7	500	0.16	833	0.27	7.7	0.9
	12 x 24 x 2	600	0.16	1000	0.28	5.5	0.8	600	0.16	1000	0.27	8.7	1.0
	14 x 20 x 2	583	0.16	972	0.28	5.5	0.8	583	0.16	972	0.27	8.9	1.0
	14 x 25 x 2	729	0.16	1215	0.28	5.7	1.0	729	0.16	1215	0.27	11.2	1.2
	15 x 20 x 2	625	0.16	1042	0.28	7.1	0.8	625	0.16	1042	0.27	9.6	1.0
	16 x 20 x 2	667	0.16	1110	0.28	6.2	0.9	667	0.16	1110	0.27	10.0	1.1
	16 x 25 x 2	834	0.16	1390	0.28	6.7	1.1	834	0.16	1390	0.27	12.4	1.3
	18 x 24 x 2	900	0.16	1500	0.28	8.4	1.2	900	0.16	1500	0.27	13.8	1.5
	18 x 25 x 2	938	0.16	1563	0.28	8.7	1.3	938	0.16	1563	0.27	14.4	1.6
	20 x 20 x 2	834	0.16	1390	0.28	8.6	1.1	834	0.16	1390	0.27	12.4	1.3
	20 x 24 x 2	1000	0.16	1667	0.28	8.2	1.3	1000	0.16	1667	0.27	15.3	1.6
	20 x 25 x 2	1042	0.16	1735	0.28	10.0	1.3	1042	0.16	1735	0.27	15.5	1.6
	24 x 24 x 2	1200	0.16	2000	0.28	12.0	1.5	1200	0.16	2000	0.27	17.6	1.8
	25 x 25 x 2	1300	0.16	2170	0.28	12.7	1.6	1300	0.16	2170	0.27	19.2	1.9

Capacities and Dimensions

Nominal Depth (in.)	Nominal Size WxHxD (in.)	Standard Capacity						High Capacity					
		300 fpm		500 fpm		Media Area sq. ft.	Wt. Each (lbs.)	300 fpm		500 fpm		Media Area sq. ft.	Wt. Each (lbs.)
		cfm	PD	cfm	PD			cfm	PD	cfm	PD		
4	12 x 24 x 4	600	0.11	1000	0.23	10.2	1.5	600	0.10	1000	0.20	16.5	1.7
	16 x 20 x 4	667	0.11	1110	0.23	13.7	1.7	667	0.10	1110	0.20	18.0	1.8
	16 x 25 x 4	834	0.11	1390	0.23	17.2	2.0	834	0.10	1390	0.20	22.6	2.2
	18 x 24 x 4	900	0.11	1500	0.23	16.5	2.1	900	0.10	1500	0.20	24.2	2.3
	20 x 20 x 4	834	0.11	1390	0.23	16.9	2.0	834	0.10	1390	0.20	22.3	2.2
	20 x 24 x 4	1000	0.11	1665	0.23	17.6	2.3	1000	0.10	1665	0.20	24.0	2.5
	20 x 25 x 4	1042	0.11	1735	0.23	21.2	2.3	1042	0.10	1735	0.20	27.7	2.5
	24 x 24 x 4	1200	0.11	2000	0.23	22.5	2.5	1200	0.10	2000	0.20	28.8	3.0
	25 x 29 x 4	1500	0.11	2515	0.23	30.4	3.1	1500	0.10	2515	0.20	38.4	3.6
	28 x 30 x 4	1680	0.11	2915	0.23	31.2	3.5	1680	0.10	2915	0.20	42.6	4.2

Notes:

1. PD represents clean pressure drop in inches w.g. The recommended final pressure drop for all models is 1.0 in. w.g. System design may dictate a lower change-out point.
2. Actual filter face size for 12 x 24 and 24 x 24 filters is 5/8 in. under on height and width. Actual face size on all other sizes is 1/2 in. under on height and width.
3. Actual filter depth is 1/4 inch under for these nominal 1 inch, 2 inch and 4 inch deep filters. For capacities other than those shown, ratio the face velocities.
4. Performance tolerances conform to Section 7.4 of API Standard 850.
5. Performance values shown in this publication may be averages or estimates intended to generally represent product styles. Contact factory for latest actual test data on specific Flanders models.



Construction

Filter frames are constructed from two pieces of die-cut, moisture-resistant clay coated board. Components "telescope" into one another and provide double-wall construction and a precision fit. The frame includes diagonal and horizontal support members bonded to the media on the air entering and leaving sides for unsurpassed frame strength. Interlocking corners and positive media-to-frame seal reduces the possibility of air bypass.

The filter media is a reinforced non-woven media. It is continuously laminated to an expanded metal grid on the air leaving side to provide pleat stability throughout the life of the filters and prevent media flutter while in operation.

Flanders' unique V-Pleat wedge pleat allows for total media usage and provides maximum airflow and dust holding capacity.

Guide Specifications

1.0 General

1.1 Medium efficiency filters shall be Pre Pleat 40 extended surface pleated filters as manufactured by Flanders Precisionaire.

1.2 Filter sizes and capacities shall be as scheduled on the drawings.

1.3 Filters shall be UL 900 Class 2 listed.

2.0 Filter Construction

2.1 Filters shall be constructed of reinforced, non-woven synthetic media. Media shall be laminated to an expanded metal grid on the air leaving side and formed into V-configuration pleats.

2.2 Frame shall be recyclable, moisture-resistant clay-coated board with diagonal and horizontal support members on the upstream and downstream sides, and shall have interlocking corner tabs.

3.0 Performance

3.1 Initial and final resistances shall not exceed the scheduled values.

3.2 Media area must equal or exceed that of the specified filter.

3.3 The average atmospheric dust spot efficiency shall be 30-35% as determined by ASHRAE Standard 52.1-92 test methods.

3.4 The manufacturer shall guarantee performance as stated in the literature within tolerances as outlined in Section 7.4 of ARI Standard 850.

3.5 The filter shall be MERV 8 by ASHRAE Standard 52.2.

4.0 Certification by Manufacturer

4.1 Manufacturer shall issue a standard certificate of compliance certifying that the filter meets the materials, components, performance and construction characteristics stated herein.