

General

Precision Pak extended surface bag filters are designed for use in most commercial or industrial HVAC systems where medium to high efficiency filtration is required. Precision Pak filters are available in two media types: lofted fiberglass and micro-fine synthetic media with average efficiency ranges of 55%, 65%, 85%, and 95% per ASHRAE Standard 52.1 test methods. Offered MERV 10-15 according to ASHRAE Std. 52.2. Operating face velocities up to 625 fpm are available for all models. Precision Pak filters in depths up to 22" are suited for variable air volume systems. Filters with greater depth are not recommended.

Precision Pak filters are UL 900 Class 2 listed as a standard and are also available in UL Class I in both synthetic and glass media.

Installation Considerations

Precision Pak bag filters may be installed in Flanders PF-1 Frames, K-Trac Filter Framing Modules, Sureseal Side Access Housings, or in similar existing hardware.

PF-1 Frames are riveted together to form a bank and may be installed for upstream or downstream service. K-Trac Filter Framing Modules are especially suitable for medium to large built-up filter banks. Smaller systems and systems with minimum upstream access space are best served using Sureseal Side Access Housings.

Physical Data

Media: Lofted fiberglass or micro-fine synthetic

Media Backer: Non-woven polyester

Pocket Sealant: Thermoplastic resin

Pocket Retainer: Corrosion-resistant steel

Header: 13/16" wide corrosion-resistant steel

Operating Limits: 100% RH and 180° F

Actual Header Face Size: Nominal size less 5/8" (e.g., a nominal 24" x 24" filter header is actually 23-3/8" x 23-3/8")

Important Features

- Low initial pressure drop provides longer life.
- Stitched pockets provide aerodynamics for optimal inflation.
- Wide range of cartridge depths, efficiencies and operating capacities are available.
- Edges have an over lock stitch.
- Available in lofted fiberglass or synthetic media.
- 100% stake-through pocket retainers.
- UL 900 Class 1 or 2 available.
- MERV 10-15.



95% Synthetic Media MERV 15

| Nominal Depth (Inches) | Number Of Pockets | Nom. Width (inch) | Nom Height (inch) | Media Area (sq. ft) | 375 FPM | | 500 FPM | | 625 FPM | |
|------------------------|-------------------|-------------------|-------------------|---------------------|---------|------|---------|------|---------|------|
| | | | | | cfm | PD | cfm | PD | cfm | PD |
| 15 | 12 | 24 | 24 | 65 | 1500 | 0.40 | 2000 | 0.55 | 2500 | 0.75 |
| 15 | 6 | 12 | 24 | 33 | 750 | 0.40 | 1000 | 0.55 | 1250 | 0.75 |
| 22 | 6 | 24 | 24 | 48 | 1500 | 0.42 | 2000 | 0.60 | 2500 | 0.79 |
| 22 | 3 | 12 | 24 | 24 | 750 | 0.42 | 1000 | 0.60 | 1250 | 0.79 |
| 22 | 8 | 24 | 24 | 64 | 1500 | 0.36 | 2000 | 0.51 | 2500 | 0.67 |
| 22 | 4 | 12 | 24 | 32 | 750 | 0.36 | 1000 | 0.51 | 1250 | 0.67 |
| 22 | 10 | 24 | 24 | 79 | 1500 | 0.34 | 2000 | 0.48 | 2500 | 0.64 |
| 22 | 5 | 12 | 24 | 40 | 750 | 0.34 | 1000 | 0.48 | 1250 | 0.64 |
| 30 | 6 | 24 | 24 | 65 | 1500 | 0.36 | 2000 | 0.52 | 2500 | 0.73 |
| 30 | 3 | 12 | 24 | 33 | 750 | 0.36 | 1000 | 0.52 | 1250 | 0.73 |
| 30 | 8 | 24 | 24 | 87 | 1500 | 0.25 | 2000 | 0.37 | 2500 | 0.52 |
| 30 | 4 | 12 | 24 | 43 | 750 | 0.25 | 1000 | 0.37 | 1250 | 0.52 |
| 30 | 10 | 24 | 24 | 108 | 1500 | 0.24 | 2000 | 0.35 | 2500 | 0.49 |
| 30 | 5 | 12 | 24 | 54 | 750 | 0.24 | 1000 | 0.35 | 1250 | 0.49 |
| 36 | 6 | 24 | 24 | 78 | 1500 | 0.32 | 2000 | 0.47 | 2500 | 0.66 |
| 36 | 3 | 12 | 24 | 39 | 750 | 0.32 | 1000 | 0.47 | 1250 | 0.66 |
| 36 | 8 | 24 | 24 | 104 | 1500 | 0.23 | 2000 | 0.33 | 2500 | 0.47 |
| 36 | 4 | 12 | 24 | 52 | 750 | 0.23 | 1000 | 0.33 | 1250 | 0.47 |

85% Synthetic Media MERV 13

| Nominal Depth (Inches) | Number Of Pockets | Nom. Width (inch) | Nom Height (inch) | Media Area (sq. ft) | 375 FPM | | 500 FPM | | 625 FPM | |
|------------------------|-------------------|-------------------|-------------------|---------------------|---------|------|---------|------|---------|------|
| | | | | | cfm | PD | cfm | PD | cfm | PD |
| 15 | 12 | 24 | 24 | 65 | 1500 | 0.30 | 2000 | 0.44 | 2500 | 0.59 |
| 15 | 6 | 12 | 24 | 33 | 750 | 0.30 | 1000 | 0.44 | 1250 | 0.59 |
| 22 | 6 | 24 | 24 | 48 | 1500 | 0.32 | 2000 | 0.47 | 2500 | 0.63 |
| 22 | 3 | 12 | 24 | 24 | 750 | 0.32 | 1000 | 0.47 | 1250 | 0.63 |
| 22 | 8 | 24 | 24 | 64 | 1500 | 0.24 | 2000 | 0.36 | 2500 | 0.51 |
| 22 | 4 | 12 | 24 | 32 | 750 | 0.24 | 1000 | 0.36 | 1250 | 0.51 |
| 22 | 10 | 24 | 24 | 79 | 1500 | 0.22 | 2000 | 0.34 | 2500 | 0.48 |
| 22 | 5 | 12 | 24 | 40 | 750 | 0.22 | 1000 | 0.34 | 1250 | 0.48 |
| 30 | 6 | 24 | 24 | 65 | 1500 | 0.30 | 2000 | 0.42 | 2500 | 0.57 |
| 30 | 3 | 12 | 24 | 33 | 750 | 0.30 | 1000 | 0.42 | 1250 | 0.57 |
| 30 | 8 | 24 | 24 | 87 | 1500 | 0.22 | 2000 | 0.33 | 2500 | 0.46 |
| 30 | 4 | 12 | 24 | 43 | 750 | 0.22 | 1000 | 0.33 | 1250 | 0.46 |
| 30 | 10 | 24 | 24 | 108 | 1500 | 0.20 | 2000 | 0.31 | 2500 | 0.43 |
| 30 | 5 | 12 | 24 | 54 | 750 | 0.20 | 1000 | 0.31 | 1250 | 0.43 |
| 36 | 6 | 24 | 24 | 78 | 1500 | 0.27 | 2000 | 0.38 | 2500 | 0.51 |
| 36 | 3 | 12 | 24 | 39 | 750 | 0.27 | 1000 | 0.38 | 1250 | 0.51 |
| 36 | 8 | 24 | 24 | 104 | 1500 | 0.20 | 2000 | 0.30 | 2500 | 0.41 |
| 36 | 4 | 12 | 24 | 52 | 750 | 0.20 | 1000 | 0.30 | 1250 | 0.41 |

How to Select a Precision Pak Filter

- Determine the ASHRAE efficiency desired.
- Determine the face velocity needed to fit the system.
- Select the shortest depth possible with a pressure drop that is acceptable.
- Select the most economical filter based on the number of pockets per 24" x 24" size.

60-65% Synthetic Media MERV 11

| Nominal Depth (Inches) | Number Of Pockets | Nom. Width (inch) | Nom Height (inch) | Media Area (sq. ft) | 375 FPM | | 500 FPM | | 625 FPM | |
|------------------------|-------------------|-------------------|-------------------|---------------------|---------|------|---------|------|---------|------|
| | | | | | cfm | PD | cfm | PD | cfm | PD |
| 15 | 12 | 24 | 24 | 65 | 1500 | 0.18 | 2000 | 0.28 | 2500 | 0.39 |
| 15 | 6 | 12 | 24 | 33 | 750 | 0.18 | 1000 | 0.28 | 1250 | 0.39 |
| 22 | 6 | 24 | 24 | 48 | 1500 | 0.19 | 2000 | 0.30 | 2500 | 0.41 |
| 22 | 3 | 12 | 24 | 24 | 750 | 0.19 | 1000 | 0.30 | 1250 | 0.41 |
| 22 | 8 | 24 | 24 | 64 | 1500 | 0.16 | 2000 | 0.25 | 2500 | 0.37 |
| 22 | 4 | 12 | 24 | 32 | 750 | 0.16 | 1000 | 0.25 | 1250 | 0.37 |
| 22 | 10 | 24 | 24 | 79 | 1500 | 0.15 | 2000 | 0.24 | 2500 | 0.34 |
| 22 | 5 | 12 | 24 | 40 | 750 | 0.15 | 1000 | 0.24 | 1250 | 0.34 |
| 30 | 6 | 24 | 24 | 65 | 1500 | 0.18 | 2000 | 0.29 | 2500 | 0.39 |
| 30 | 3 | 12 | 24 | 33 | 750 | 0.18 | 1000 | 0.29 | 1250 | 0.39 |
| 30 | 8 | 24 | 24 | 87 | 1500 | 0.15 | 2000 | 0.23 | 2500 | 0.34 |
| 30 | 4 | 12 | 24 | 43 | 750 | 0.15 | 1000 | 0.23 | 1250 | 0.34 |
| 30 | 10 | 24 | 24 | 108 | 1500 | 0.14 | 2000 | 0.22 | 2500 | 0.32 |
| 30 | 5 | 12 | 24 | 54 | 750 | 0.14 | 1000 | 0.22 | 1250 | 0.32 |
| 36 | 6 | 24 | 24 | 78 | 1500 | 0.18 | 2000 | 0.26 | 2500 | 0.36 |
| 36 | 3 | 12 | 24 | 39 | 750 | 0.18 | 1000 | 0.26 | 1250 | 0.36 |
| 36 | 8 | 24 | 24 | 104 | 1500 | 0.14 | 2000 | 0.22 | 2500 | 0.31 |
| 36 | 4 | 12 | 24 | 52 | 750 | 0.14 | 1000 | 0.22 | 1250 | 0.31 |

50-55% Synthetic Media MERV 10

| Nominal Depth (Inches) | Number Of Pockets | Nom. Width (inch) | Nom Height (inch) | Media Area (sq. ft) | 375 FPM | | 500 FPM | | 625 FPM | |
|------------------------|-------------------|-------------------|-------------------|---------------------|---------|------|---------|------|---------|------|
| | | | | | cfm | PD | cfm | PD | cfm | PD |
| 15 | 12 | 24 | 24 | 65 | 1500 | 0.18 | 2000 | 0.28 | 2500 | 0.35 |
| 15 | 6 | 12 | 24 | 33 | 750 | 0.18 | 1000 | 0.28 | 1250 | 0.35 |
| 22 | 6 | 24 | 24 | 48 | 1500 | 0.19 | 2000 | 0.30 | 2500 | 0.37 |
| 22 | 3 | 12 | 24 | 24 | 750 | 0.19 | 1000 | 0.30 | 1250 | 0.37 |
| 22 | 8 | 24 | 24 | 64 | 1500 | 0.16 | 2000 | 0.25 | 2500 | 0.33 |
| 22 | 4 | 12 | 24 | 32 | 750 | 0.16 | 1000 | 0.25 | 1250 | 0.33 |
| 22 | 10 | 24 | 24 | 79 | 1500 | 0.15 | 2000 | 0.24 | 2500 | 0.31 |
| 22 | 5 | 12 | 24 | 40 | 750 | 0.15 | 1000 | 0.24 | 1250 | 0.31 |
| 30 | 6 | 24 | 24 | 65 | 1500 | 0.16 | 2000 | 0.26 | 2500 | 0.35 |
| 30 | 3 | 12 | 24 | 33 | 750 | 0.16 | 1000 | 0.26 | 1250 | 0.35 |
| 30 | 8 | 24 | 24 | 87 | 1500 | 0.14 | 2000 | 0.21 | 2500 | 0.31 |
| 30 | 4 | 12 | 24 | 43 | 750 | 0.14 | 1000 | 0.21 | 1250 | 0.31 |
| 30 | 10 | 24 | 24 | 108 | 1500 | 0.14 | 2000 | 0.20 | 2500 | 0.29 |
| 30 | 5 | 12 | 24 | 54 | 750 | 0.14 | 1000 | 0.20 | 1250 | 0.29 |
| 36 | 6 | 24 | 24 | 78 | 1500 | 0.15 | 2000 | 0.24 | 2500 | 0.32 |
| 36 | 3 | 12 | 24 | 39 | 750 | 0.15 | 1000 | 0.24 | 1250 | 0.32 |
| 36 | 8 | 24 | 24 | 104 | 1500 | 0.14 | 2000 | 0.20 | 2500 | 0.29 |
| 36 | 4 | 12 | 24 | 52 | 750 | 0.14 | 1000 | 0.20 | 1250 | 0.29 |

Notes:

1. PD represents clean pressure drop in inches w.g. for synthetic media filters.
 2. The recommended final pressure drop for all models is 1.0 inch w.g.
 3. Gross media area is approximately 7% more than the net area listed.
 4. Values shown may be averages or estimates typical of products styles.
- Contact factory for test data on specific models.

Application Guidelines

Precision Pak filters should be installed with pockets vertical wherever possible. It is acceptable to install 24" x 12" face size filters with pockets horizontal if necessary to meet the size requirements of the filter banks.

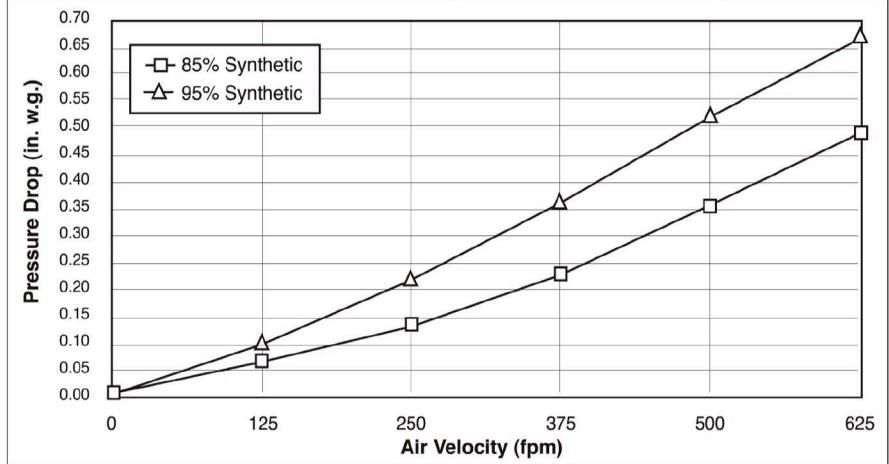
Gasketed Headers

Precision Pak filters installed in Flanders K-Trac Filter Framing Modules or Sureseal Side Access Housings require polyfoam gaskets on opposite header sides to prevent air bypass. To specify Precision Pak filters with gasketed headers, add suffix "SA" (side access), "GU" (upstream), "GD" (downstream) and "GS" (sides) to the model number.

Prefilters

Properly selected bag filters without prefilters will generally require change out annually in typical HVAC applications. Because of the frequent maintenance expense and increase in fan kW input using prefilters, they are often recommended with 85% and 95% efficient Precision Pak final filters. However, the energy cost to operate a prefilter seldom warrants their use with 55% or 65% filters.

**Precision Pak 8 Pkt 22"
Pressure Drop vs. Air Velocity**



Guide Specifications

1.0 General

- 1.1 Medium and high efficiency self-supporting filters shall be Precision Pak extended surface type as manufactured by Flanders.
- 1.2 Filter sizes, efficiencies and capacities shall be as scheduled on the drawings.

2.0 Filter Construction

- 2.1 Filters shall be constructed of lofted fiberglass or micro-fine synthetic media encased in a thin non-woven polyester backer mat.
- 2.2 Open area on the filter face for air passage shall be not less than 90%.
- 2.3 Flexible internal support stitching shall maintain individual pockets in a controlled form under all rated air flow conditions. Stitching shall be sealed with thermoplastic sealant. Edges shall be finished with over lock stitch to prevent air unraveling.

- 2.4 Pockets shall be 100% stake-through crimped to prevent media pullout.
- 2.5 Pockets shall be bonded to corrosion-resistant steel casings and assembled into a corrosion-resistant steel header.
- 2.6 Filters shall be UL 900 Class 2 or Class 1 listed.

3.0 Performance

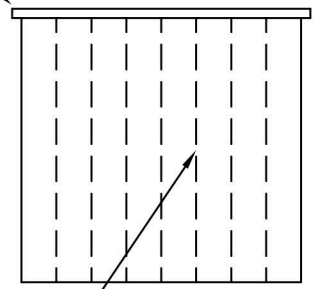
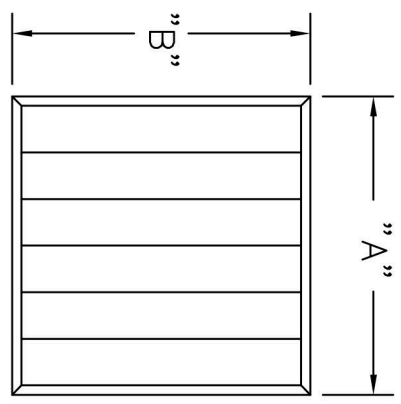
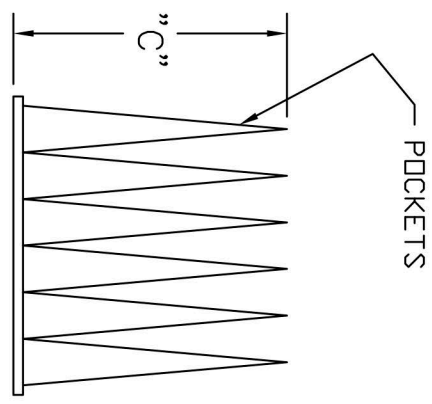
- 3.1 Initial and final resistances shall not exceed the scheduled values.
- 3.2 Media area must equal or exceed that of the specified filter.
- 3.3 The average efficiency shall be as determined by the ASHRAE Standard 52.1 and 52.2 test methods.
- 3.4 The manufacturer shall guarantee performance as stated in its literature within tolerances as out-lined in Section 7.4 of ARI Standard 850.



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REPRESENTED BY:



| PAP-55 MODEL NUMBER | NOMINAL SIZE | NO. OF POCKETS | MEDIA AREA (SQ. FT.) | ACTUAL DIMENSION | | | AIR FLOW CAPACITY (CFM) | INITIAL RES. SYNTHETIC GLASS | INITIAL RES. GLASS |
|------------------------|-----------------|-------------------|----------------------------|------------------|---------|-----|-------------------------------|---------------------------------------|--------------------------|
| | | | | "A" | "B" | "C" | | | |
| PAP1255*-4415** | 24 X 24 X 15 | 12 | 65 | 23 3/8" | 23 3/8" | 15" | 2000 | 0.28 | 0.30 |
| PAP655*-4422** | 24 X 24 X 22 | 6 | 48 | 23 3/8" | 23 3/8" | 22" | 2000 | 0.30 | 0.33 |
| PAP855*-4422** | 24 X 24 X 22 | 8 | 64 | 23 3/8" | 23 3/8" | 22" | 2000 | 0.25 | 0.28 |
| PAP1055*-4422** | 24 X 24 X 22 | 10 | 79 | 23 3/8" | 23 3/8" | 22" | 2000 | 0.24 | 0.26 |
| PAP655*-4430** | 24 X 24 X 30 | 6 | 65 | 23 3/8" | 23 3/8" | 30" | 2000 | 0.29 | 0.32 |
| PAP855*-4430** | 24 X 24 X 30 | 8 | 87 | 23 3/8" | 23 3/8" | 30" | 2000 | 0.23 | 0.25 |
| PAP1055*-4430** | 24 X 24 X 30 | 10 | 108 | 23 3/8" | 23 3/8" | 30" | 2000 | 0.22 | 0.24 |
| PAP655*-4436** | 24 X 24 X 36 | 6 | 78 | 23 3/8" | 23 3/8" | 36" | 2000 | 0.26 | 0.29 |
| PAP855*-4436** | 24 X 24 X 36 | 8 | 104 | 23 3/8" | 23 3/8" | 36" | 2000 | 0.22 | 0.24 |
| PAP655*-2415** | 12 X 24 X 15 | 6 | 33 | 11 3/8" | 23 3/8" | 15" | 1000 | 0.28 | 0.30 |
| PAP355*-2422** | 12 X 24 X 22 | 3 | 24 | 11 3/8" | 23 3/8" | 22" | 1000 | 0.30 | 0.33 |
| PAP455*-2422** | 12 X 24 X 22 | 4 | 32 | 11 3/8" | 23 3/8" | 22" | 1000 | 0.25 | 0.28 |
| PAP555*-2422** | 12 X 24 X 22 | 5 | 40 | 11 3/8" | 23 3/8" | 22" | 1000 | 0.24 | 0.26 |
| PAP355*-2430** | 12 X 24 X 30 | 3 | 33 | 11 3/8" | 23 3/8" | 30" | 1000 | 0.29 | 0.32 |
| PAP455*-2430** | 12 X 24 X 30 | 4 | 43 | 11 3/8" | 23 3/8" | 30" | 1000 | 0.23 | 0.25 |
| PAP555*-2430** | 12 X 24 X 30 | 5 | 54 | 11 3/8" | 23 3/8" | 30" | 1000 | 0.22 | 0.24 |
| PAP355*-2436** | 12 X 24 X 36 | 3 | 39 | 11 3/8" | 23 3/8" | 36" | 1000 | 0.26 | 0.29 |
| PAP455*-2436** | 12 X 24 X 36 | 4 | 52 | 11 3/8" | 23 3/8" | 36" | 1000 | 0.22 | 0.24 |

* MEDIA MATERIAL:

** OPTIONS:

- G=GLASS MICRO-FIBER
- S=SYNTHETIC POLYPROPYLENE
- 1=CLASS 1 (GLASS ONLY)
- CLASS 2 (NO CODE)
- M=DIL MIST CONSTRUCTION
- L=POCKET SUPPORT LDDPS
- GU=GASKET UPSTREAM
- GD=GASKET DOWNSTREAM
- GS=GASKET SIDES
- H=1 1/8" HEADER OPTION
- 7/8" HEADER (NO CODE)

- NOTES:
- MEDIA-MICROFIBER GLASS DR 100% POLYPROPYLENE SYNTHETIC.
 - FILTER TO BE RATED AT 50%-55% EFFICIENT IN ACCORDANCE WITH ASHRAE STANDARD 52.1. PARTICLE EFFICIENCY TO BE MEASURED WITH AMBIENT AEROSOL LASER PARTICLE COUNTER AT 2,000 CFM.
 - HEADER MATERIAL: ELECTRO-GALVANIZED WITH "J"-STYLE MEDIA RETAINERS, MECHANICALLY FASTENED TO HEADER.
 - CLASSIFIED AS CLASS 1 GLASS MEDIA ONLY, CLASS 2 IN EITHER GLASS OR SYNTHETIC MEDIA.
 - SIDE CLIPS TO HOLD RETAINERS TO HEADER DO NOT EXTEND PAST PERIMETER.

| | | | |
|------------------------|--------------------------|--------------------------|--|
| CUSTOMER _____ | CUSTOMER ORDER NO. _____ | FLANDERS ORDER NO. _____ | TITLE: FLANDERS PRECISION PAK TYPE PAP BAG FILTER 50-55% |
| FLANDERS PRECISIONAIRE | DRAWING NO. FPP50-55% | REV. _____ | |

