Pall Corporation

PALL PROFILE® A/S 1401 Series Filter Elements

1401 Style Depth Filters constructed of polyphenylene sulfide (PPS) medium

- Proprietary Depth Construction with an Absolute Rated Downstream Section, and a Continuously Profiled Pore Size Upstream Section
- PPS Medium is Chemically Inert for Use in Aggressive Service
- Tin Plated Carbon Steel Cores Provide Excellent Mechanical Strength
- Outside to Inside Flow
- 3.7" (9.4 cm) Diameter, 37" (94 cm) Long Element Provides Long Service Life
- Knife-edge Seal Elements Retrofit Existing 1401 Housings when Used with Specially Designed 1401 Housing Adapter

Performance Specifications

Filter Grades:

Liquid	60 Micron
Gas	10 Micron[1]

Maximum Temperature Rating:
30 psid (2.0 bard) @ 400˚F (205˚C)
40 psid (2.8 bard) @ 200˚F (93˚C)

Maximum Operating Temperature:
400˚F (205˚C) in most fluids excluding strong acids and bases[2]. Soak test in process fluid recommended for all temperatures in excess of 250˚F (121˚C).

[1] - Gas rating translated from determined liquid rating based on experience.
[2] - Users should check compatibility of specific process fluids prior to use.

Product Specifications

Materials of Construction

Filter Media:	Polyphenylene Sulfide (PPS)
Center Core:	Tin Plated Carbon Steel

Dimensions (nominal):

Outside Diameter:	3.7" (9.4 cm)
Inside Diameter:	2.25" (5.7 cm)
Length:	36.8" (93.5 cm)

Filter Media Characteristics:
The fibers in Profile A/S 1401 Series filters are continuous for practical purposes.

Surfactants, Binders:
No binder resin or surfactants are used in the manufacture of these filters. Fibers are “bonded” by intertwining during the manufacturing process.

Toxicity:
The filter media meets the specifications for biological tests listed in the current revision of USP for Class VI plastics at 121˚C.

Features and Benefits:

The depth style Profile A/S 1401 Series element offers the following benefits versus commonly utilized pleated paper 1401 style filters.

Feature	Advantage	Customer Benefit
No potting agents utilized	No potting agents used to attach filter end caps as is done with 1401 style pleated paper elements	Wider temperature and chemical compatibility
Depth style media	Greater ability to remove soft deformable contaminants	Enhanced fluid quality
Fine Fibers Utilized	Medium void volume > 80% vs < 50% for paper medium	Long filter life

Particle Retention

	Removal Rating Liquid Service Micron at 99.9% Efficiency[3]	Typical Clean Pressure Drop Aqueous Service[4]	
Cartridge Designation	Beta 1000 99.9%	PSI/GPM	MBAR/LPM
R1401FPS600	60	.0016	.0289

3 - Ratings determined using oil F2 Test (ISO Coarse Test Dust in MIL-H-5606; single pass mode).

4 - Pressure drop in PSI per GPM water for a single element. Multiply this value by the required flow to determine the total aqueous pressure drop. Next, for fluids other than water, multiply by viscosity in centipoise. If this calculated pressure drop is excessive, then divide this value by the number of filters required to reduce this pressure drop to an acceptable level.

Housing Information

A full line of standard and custom Pall MCC1401 housings, designed and built to the ASME code, are available. Refer to *Table 2* for more information.

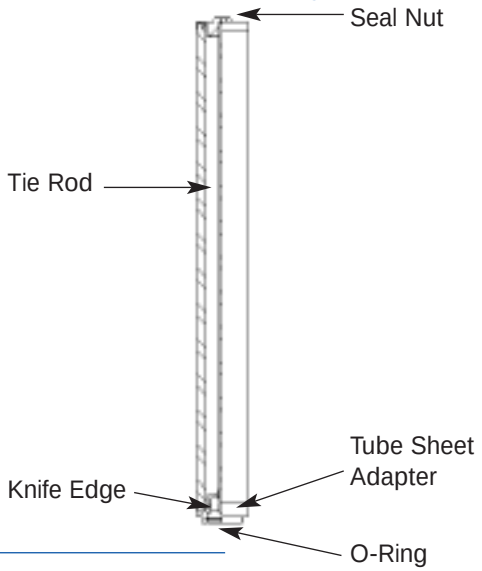
A Pall supplied retrofit tie rod assembly is required to utilize Profile A/S 1401 style elements in existing 1401 style housings. This assembly allows for use of a knife edge seal style element in a housing that normally accepts end capped filters with internal O-rings.

The retrofit assembly consists of a top and bottom seat cup and tie rod. The bottom O-ring to knife-edge seal cup is placed over the housing riser pipe. The Profile A/S 1401 Series element is placed over each tie rod. The elements are sealed in place by screwing the top metal seal nut onto the top of the tie rod. When fully engaged, the tie rod/seal nut assembly forms a knife-edge sealing surface at both the top and bottom of the element.

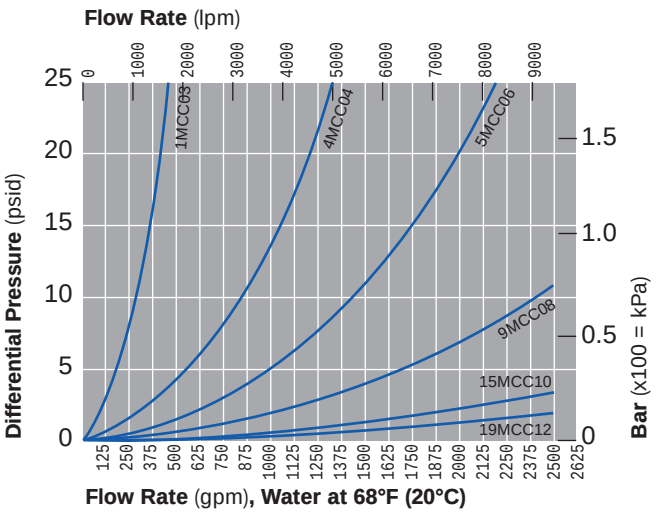
Table 2. Standard MCC1401 Housings - Carbon Steel, Rated 285 psig/19.6 bar, and 100˚F/37˚C

Part Number	Number of Filters	Nominal Vessel Diameter in/mm	Inlet/Outlet Flange Size in/mm	Housing Height in/mm	Housing Weight (empty) lb/kg	Housing Weight (full) lb/kg
1MCC0603F1285	1	6.625/168.3	3/76.2	54.25/1378	200/91	250/113
4MCC1004F1285	4	10.75/273.1	4/101.6	59/1498.6	440/199	585/265
5MCC1206F1285	5	12.75/323.9	6/152.4	64/1625.6	680/308	925/419
9MCC1608F1285	9	16/406	8/203.2	84/2133.6	1070/485	1570/712
15MCC2010F1285	15	20/508	10/254	93/2362.2	2000/907	2750/1247
19MCC2412F1285	19	24/609.6	12/304.8	110/2794	2300/1043	3500/1587

Retrofit Tie Rod Assembly



MCC1401 Housings - Aqueous Pressure Drop



To calculate the actual housing pressure drop, multiply this aqueous pressure drop by the fluid's specific gravity. This value must be added to the filter pressure drop to calculate the overall pressure drop of the filter system.

Pall Corporation

25 Harbor Park Drive
Port Washington, New York 11050

888.873.7255 toll free
516.484.3600 phone
516.484.0364 fax
www.pall.com

Visit us on the Web at www.pall.com

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