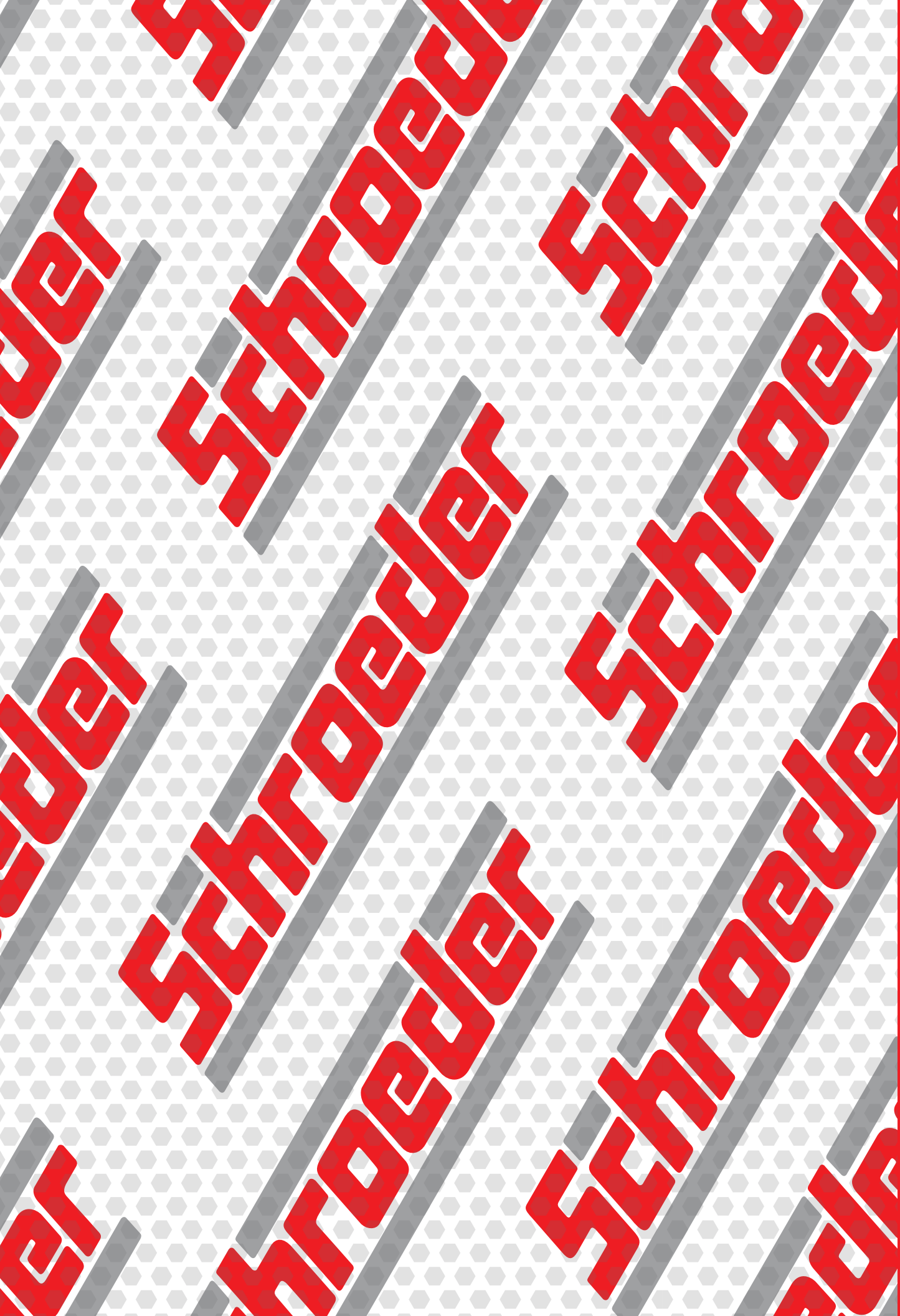
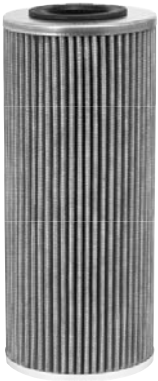


FILTER ELEMENTS



Schroeder Element Media

Z-Media



Schroeder
ORIGINAL ELEMENTS

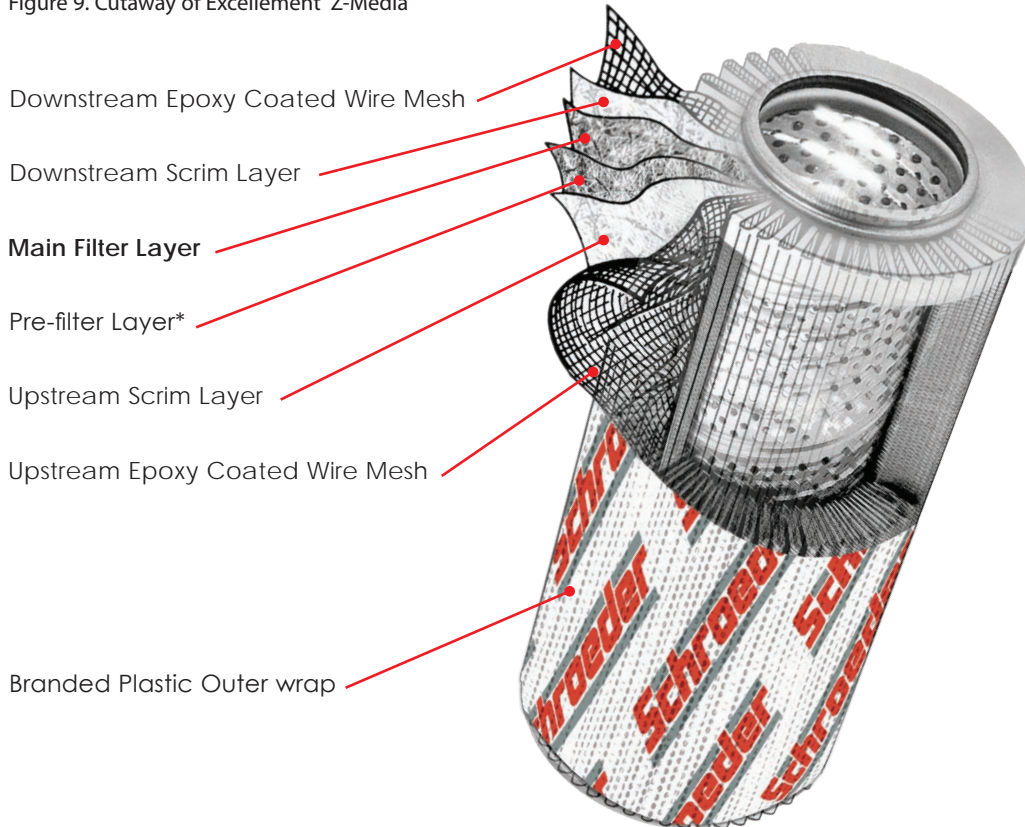


Z-Media® Elements (Synthetic)

The special class of micro-glass and other fibers used in Z-Media® are manufactured with utmost precision, to specific thicknesses and densities, and bonded with select resins to create material with extra fine passages. No other filter media can provide the benefits of Schroeder's Excellement® Z-Media®: maximum dirt-holding capacity, superior particle capture, excellent beta stability, minimum pressure drop, high flow rate and low operating cost.

The typical multiple layer construction (shown in Figure 9) has evolved from comprehensive laboratory testing to provide extended element life and system protection. Each successive layer performs a distinct and necessary function. The outermost layer is designed to maintain element integrity. Beyond this layer is a spun bonded scrim, offering coarse filtration and protection for the filtering layers within. Multiple sheets of fine filtering media follow, providing intricate passageways for the entrapment of dirt particles. Together, the various layers of filter media provide the ideal combination for peak filtration performance.

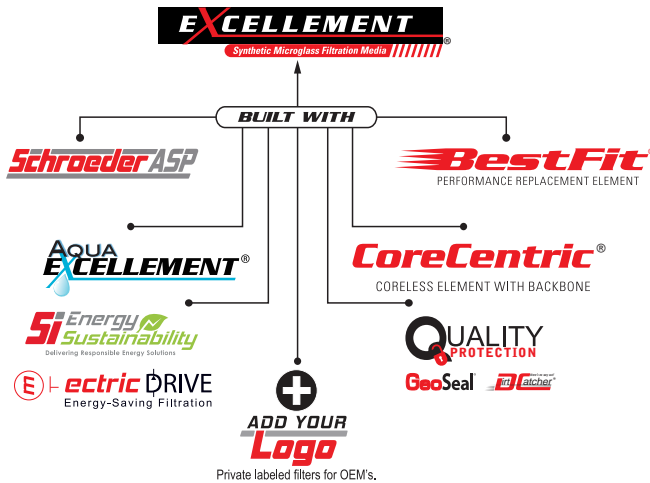
Figure 9. Cutaway of Excellement® Z-Media®



Schroeder's complete line of quality filtration elements—including Schroeder's original element designs, BestFit® replacement elements, CoreCentric® coreless elements and DirtCatcher®—are manufactured with Excellement® Z-Media®.

The better efficiencies, excellent stability, lower pressure drops, and higher dirt holding capacities provided by Excellement® Z-Media® mean cleaner oil, longer element life, and less downtime. They outlast, outperform, and excel in every measurable benchmark.

The Excellement® Z-Media® series of filter elements have been designed, tested, and proven to be the best performing elements available on the market today.



Features and Benefits

- Better flow characteristics: Lower pressure drop and improved flow stability
- Improved efficiency: Cleans oil in less time and improved reliability
- Higher dirt holding capacity: Longer element life, lower maintenance costs (labor) and decreased inventory costs (parts)
- Multi-layer construction: Each layer performs a distinct function
- Beta stability: Excellement® Z-Media® maintains efficiency as differential pressure increases

Excellement® Elements Have Improved Filtration Ratios

Schroeder Z-Media® elements are tested under cyclic flow conditions to verify flow fatigue characteristics. Extra strength and rigidity are engineered into every one of these filter elements through the use of epoxy-coated steel wire mesh and additional support layers. (ZX Series high crush strength capabilities are available for 3000 psi applications.)

A wide range of Schroeder Z-Media® elements enable you to achieve the desired cleanliness level for your system. Developed through comprehensive laboratory testing and field performance studies, these elements have been proven effective. Shown in Table 10 are cleanliness levels that can be achieved using Z-Media® filter elements in various applications.

Table 11 shows the ISO 16889 filtration ratios (Betas) for Schroeder Z-Media® elements Z1, Z3, Z5, Z10 and Z25. Figure 10 depicts the information in Table 11 graphically and provides corresponding % efficiencies. The numbers contained in the tables are simply specific data points from the plots for the respective media shown. The filtration ratio (Beta) is shown on the left side and the equivalent particle capture efficiency (%) is shown on the right for particle sizes shown across the bottom. The filtration ratio (in Table 13) indicates the particle size at which the filtration ratio for the element is greater than a given number.

Table 10. Typical Field Application Results

Application	Cleanliness* Level
Railroad Maintenance-of-Way Equipment	ISO 19/17/14
Power Generation Turbine Skid	ISO 17/15/13
Timber Harvesting Equipment	ISO 17/15/12
Plastic Injection Molding Machine	ISO 17/15/12
Paper Mill Lube System	ISO 16/14/11
Aircraft Test Stand	ISO 15/13/10
Hydraulic Production Test Stand	ISO 13/11/8

*Higher or lower levels can be obtained by selecting coarser or finer Schroeder Z-Media®, respectively.

Table 11. Z-Media® Filtration Ratios

Element Media	Filtration Ratio Per ISO 16889			
	$\beta_{x(c)} \geq 75$ (98.7%)	$\beta_{x(c)} \geq 100$ (99%)	$\beta_{x(c)} \geq 200$ (99.5%)	$\beta_{x(c)} \geq 1000$ (99.9%)
Z1	<4.0	<4.0	<4.0	4.2
Z3	<4.0	<4.0	<4.0	4.8
Z5	<4.0	4.2	4.8	6.3
Z10	6.8	7.1	8.0	10.0
Z25	16.3	17.1	19.0	24.0



Series ZX High Collapse Elements (Synthetic)

Schroeder Z-Media® elements are tested under cyclic flow conditions to verify flow fatigue characteristics. Extra strength and rigidity are engineered into every one of these filter elements through the use of epoxy-coated steel wire mesh and additional support layers. (ZX Series high crush strength capabilities are available for 3000 psi applications.)

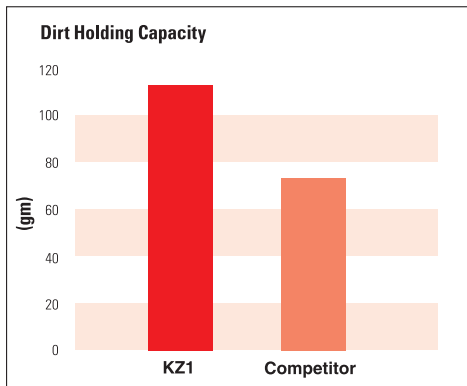
A wide range of Schroeder Z-Media® elements enable you to achieve the desired cleanliness level for your system. Developed through comprehensive laboratory testing and field performance studies, these elements have been proven effective. Shown in Table 10 are cleanliness levels that can be achieved using Z-Media® filter elements in various applications.



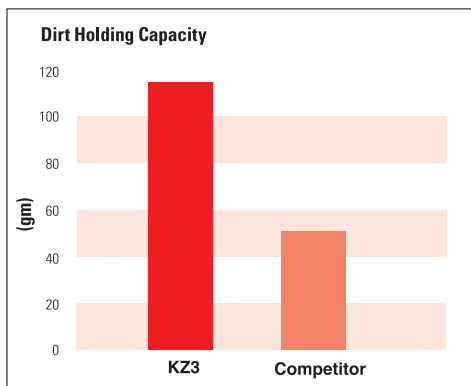
Excellement Elements Have High Dirt Holding Capacities

Dirt holding capacity (DHC), simply stated, is the amount of solid contamination that an element can hold before the filter housing reaches its terminal bypass setting. The higher the dirt holding capacity, the longer the element will last. This translates to fewer element purchases, less frequent equipment shutdowns, decreased maintenance time, and reduced inventory. In short, it means money saved.

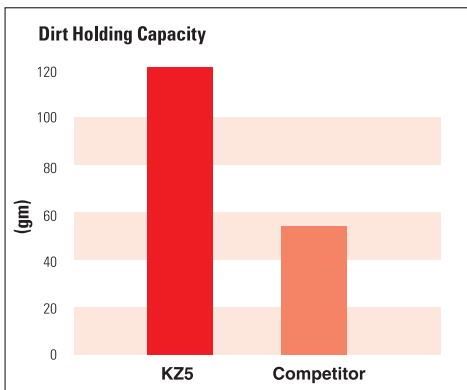
Figures 11(a) - 11(e). DHC Comparison for Z-Media® Elements and Competition



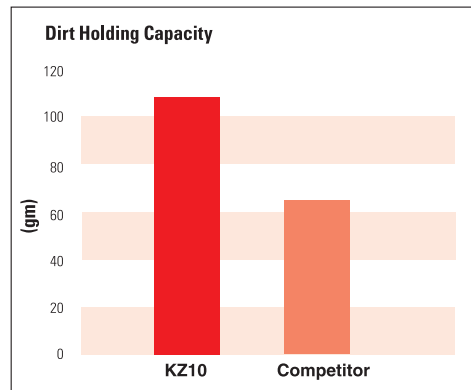
11(a)



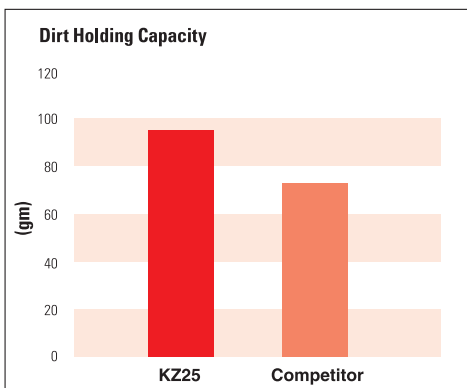
11(b)



11(c)



11(d)



11(e)

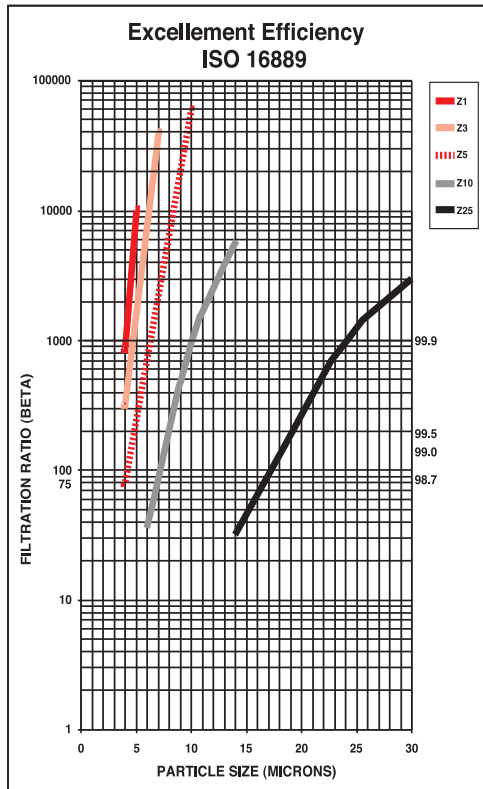
Type Medium	Element Size (Diameter x Length)				
	2" x 6" 6R	3" x 8" 8T	4" x 9" K	5" x 18" BB	6" x 39" Q
Z1	15	51	112	268	1485
Z3	15	52	115	275	1525
Z5	16	59	119	301	1536
Z10	14	55	108	272	1432
Z25	15	56	93	246	1299

The data shown represents the cumulative results of multi-pass tests in accordance with ISO 16889. Tests are conducted on a regular basis at Schroeder's own laboratory and at approved independent facilities.

Cost Per Gram Analysis/ Excellement® Efficiency®

A monetary value can be calculated for a filter element by considering its dirt holding capacity and efficiency in combination with its cost. To make this determination, first find out how much you're spending to clean your fluid to a desirable cleanliness level. Then figure out how much contamination (in grams) that the element is actually retaining. These two numbers will make it possible to calculate the grams of dirt per dollar spent.

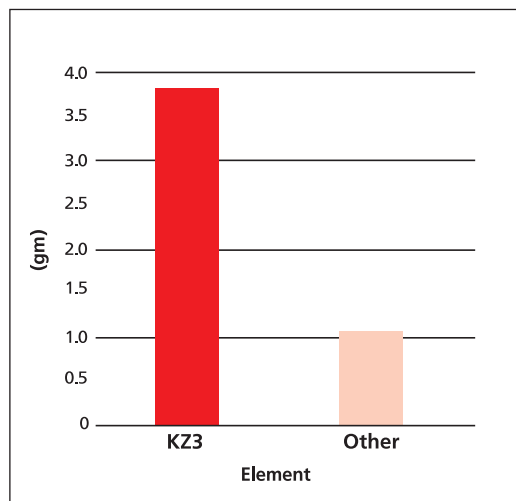
Figure 10. Z-Media® Excellement® Efficiency



It's one thing to clean the oil, but it's another to clean the oil and simultaneously provide maximum element life. With Excellement® Z-Media®, you don't need to sacrifice element life to achieve high efficiency.

We are confident that the high efficiencies, exceptional dirt holding capacities, and low pressure drops—combined with Schroeder's competitive prices—make elements made with Excellement® Z-Media® the best value in the market today.

Figure 12. Grams of Dirt Retained per Dollar Spent



Element Case Weights

In proportion to the high volume of filter elements we make and ship, one of the most frequently asked questions our order desk receives involves the weights of various cases of elements. In an effort to include this information in this edition of the catalog, we made the assumption that the various micron ratings within a media type weigh the same; i.e., a KZ1 weighs approximately the same as a KZ25. The following table represents our findings given the above assumption:

	Case Lot	Weight (lb.)		Case Lot	Weight (lb.)		Case Lot	Weight (lb.)			
A	paper	12	7	K	paper	12	17	8Z	paper	12	12
AZ	synthetic (Z)	12	8	KZ	synthetic (Z)	12	22	8ZZ	synthetic (Z)	12	13
BB	paper	6	29	KW	Water Removal	12	18	9V	synthetic (Z)	12	14
BBZ	synthetic (Z)	6	29	KK	paper	6	18	14V	synthetic (Z)	6	10
C	paper	12	7	KKZ	synthetic (Z)	6	20	14C	synthetic (Z)	6	11
CZ	synthetic (Z)	12	8	27K	paper	6	20	18L	synthetic (Z)	6	20
CC	paper	12	11	M	paper	12	33	39Q	paper	1	17
CCZ	synthetic (Z)	12	15	N	paper	12	4	39QPML	synthetic (Z)	1	18
FZX3	synthetic (Z)	12	3	NZ	synthetic (Z)	12	7	39QCL	synthetic (Z)	1	11
FZX10	synthetic (Z)	12	3	NN	paper	12	6	16Q	paper	1	8
6G	synthetic (Z)	12	8	NNZ	synthetic (Z)	12	9	16QPML	synthetic (Z)	1	15
9G	synthetic (Z)	12	13	6R	synthetic (Z)	12	10	16QCL	synthetic (Z)	1	3

GeoSeal®

GeoSeal® Elements

Far too often, customers make purchasing decisions based solely on price, only to be extremely disappointed with the poor quality delivered by low cost imitations. To make the matter worse, the customer often points an accusing finger at the filter housing manufacturer for poor performance, rather than the inadequate element they used as a replacement for the original Schroeder element.

GeoSeal® is a patented offering from Schroeder that provides a unique way for OEM's to retain replacement element business and to keep a filter's performance at the level that it was supplied. The idea is brilliantly simple: the critical sealing arrangement between a filter housing and its replacement element takes on a shape other than the standard circular arrangement. Specifically, the element grommet & mating bushing are given a new geometric shape. Figures 1 & 2 show the initial configuration being used.



Figure 1. Filter element with GeoSeal grommet.

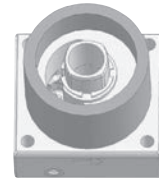


Figure 2. Filter housing (cut-away) with GeoSeal bushing.

Availability

Currently, the GeoSeal® design is available on the K-size element and in the following Schroeder filter series: KF30, KF50, KC50, KC65, MKF50, K9, 2K9, 3K9, KF3, KL3, MLF1, KF5, RT, ZT, and LRT

How To Order

To order the filter housing and element incorporated with the GeoSeal® design:

- "G" is added to the front of the housing model code (KF30, KF50, KC50, KC65, MKF50, KF3, KL3, MLF1, KF5, K9, 2K9, 3K9, RT, ZT, and LRT).
- "BG" is added to the element model code for RT (one end of the element has the GeoSeal®; the other end has an integrated bypass valve)

GeoSeal® Filters Selection Guide

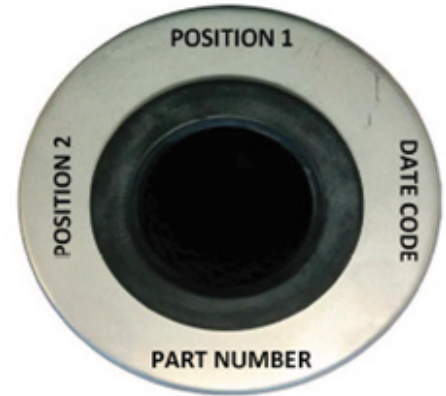
	Pressure psi (bar)	Flow gpm (L/min)	Element Length/Size	Page
High Pressure GeoSeal® Filters				
GKF30 GeoSeal®	3000 (210)	100/150 (380/570)	KG, KKG, 27KG	99
GKF50 GeoSeal®	5000 (345)	100/150 (380/570)	KG, KKG, 27KG	99
GKC50 GeoSeal®	5000 (345)	100/150 (380/570)	KG, KKG, 27KG	107
GMKF50 GeoSeal®	5000 (345)	200 (760)	KG, KKG, 27KG	111
GKC65 GeoSeal®	6500 (450)	100 (380)	KG, KKG, 27KG	115
Medium Pressure GeoSeal® Filters				
GKF5 GeoSeal®	500 (35)	100 (380)	KG	171
GK9 GeoSeal®	900 (60)	100 (380)	KG, KKG, 27KG	179
G2K9 GeoSeal®	900 (60)	100 (380)	KG, KKG, 27KG	183
G3K9 GeoSeal®	900 (60)	100 (380)	KG, KKG, 27KG	183
Low Pressure GeoSeal® Filters				
GKF3 GeoSeal®	300 (20)	100 (380)	KG, KKG, 27KG	225
GKL3 GeoSeal®	300 (20)	120 (455)	KG, KKG, 27KG, 18LG	229
GMLF1 GeoSeal®	300 (20)	200 (760)	KG	237
GZT GeoSeal®	100 (7)	40 (150)	8GTZ	257
GRT GeoSeal®	100 (7)	100 (380)	KBG, KKBG, 27KKBG	269
GLRT GeoSeal®	100 (7)	150 (570)	18LG	277

Private Labeled Elements

Schroeder offers a full line of branding solutions for air breathers, spin-ons, and replacement elements. Using the Element Private Label Form (L-2993), OEMs can obtain Schroeder elements with their very own custom logo (for Spin-on elements and air breathers, reference L-2994 on our website). Furnishing elements with custom branding enables OEMs to capture their aftermarket element business. Custom labeled products also protect against the use of unauthorized elements, thus reducing the potential of field warranty issues. Additionally, private branded products are proprietary and will not be shared with others without written consent from the OEM.

Steps for Establishing an Outer Wrap/End Cap Markings

1. Elements can be private labeled by marking the end caps, adding a private labeled plastic outerwrap, or both.
2. Customer name and part number will be etched on to one of the end caps with Schroeder date codes unless otherwise specified.
 - a. Logos can be laser etched onto the end cap if space allows on the desired element (a .DXF file of the logo is required).
3. When requesting a plastic outer wrap, the customer must supply all artwork in a vector file format (.AI or .EPS).
4. Once the artwork is received, a RIP file (used to print the wrap) will be created and a sample swatch will be provided for customer approval (average lead time is approximately 2 weeks).
5. The sample printed polyester swatch will be sent to the customer for approval. The sample swatch can be temporarily wrapped around a SBF-9600-8 element, but this must be requested.
6. Once the customer has approved the sample, element part numbers (specific to element size) can be established and structured. Cost, delivery and required minimum quantity may depend on element size and private labeling style.



Packaging Capabilities

Schroeder has the ability to brand both individual and master cartons as requested. We can apply the customer name, part number, logo (black and white - .jpg file), and other customer texts. Bar coding and customer pre-printed boxes can also be requested (set up fees and minimum order quantities are required for customer pre-printed boxes).

Extra Aftermarket Retention Advantages:

Incorporating a private labeling program has shown that upwards of 60% of aftermarket element business is retained. Instituting of a private branding program also protects against the use of inferior and/or unqualified replacement element substitutions.





Patent # 7384547



DirtCatcher® Elements

DirtCatcher® elements from Schroeder offer a superior alternative to inside-out filtration. The patented outer shell prevents contaminants from falling back into the system during element changes while still providing the excellent dirt retention of Excellement® media. DirtCatcher® elements are currently available in single and double length K, BB, and 18L size elements, and feature Excellement® media within.

Currently, DirtCatcher® elements can be purchased separately or as part of our RT, KF3, KF8, BFT, and LRT filter assemblies.

The DirtCatcher® solution provides peace of mind to those concerned with dirt escaping from elements during the removal process while delivering all the advantages of Schroeder original (outside-in flow) elements:

- Better Pressure Drop
- Greater Surface Area
- Better Pleat Stability

This design is only available from Schroeder. It goes without saying that DirtCatcher's unique design also allows OEM's to retain 100% of after-market business.



Anti-Stat Anti-Stat PREMIUM

Anti-Static Elements

During the production of hydraulic oils, “additive packages” are introduced into the base oils to give the fluids certain characteristics they need for the demanding conditions of today’s systems. The additives improve viscosity, reduce friction, prevent wear, and allow the fluid to tolerate high temperatures without oxidation.

Some oils are produced with toxic aromatics and heavy metals, with a high electrical conductivity, but because of their toxicity and potential threat to the environment, they no longer comply with current, international environmental standards. Other groups of oils are produced with the appropriate, approved additive packages, often labeled as highly refined or synthetic. They contain no toxins or carcinogens, and are free of heavy metals, but due to their metal-free nature, they have a lower electrical conductivity rating.

Low electrical conductivity means that any charges that are generated through the oil flow may not be dissipated quick enough, thus causing sparking. Ultimately, this can cause explosions in the reservoir or damage to vital hydraulic components, such as valves and filters.

The sparks can also interfere with or damage expensive electronic components, and form oil-ageing deposits, such as varnish. Varnish then settles on the oily surfaces of the vital components and has a detrimental effect on how well your machine functions. Potential consequences of varnish also includes seized valve spools, overheated solenoids, and extremely short filter element service life.

The Anti-Stat and Anti-Stat Premium elements were developed to greatly reduce or eliminate electrostatic discharging problems that can occur during filtration of hydraulic and lube fluids. By combining proven Excellement® media and ASP® technology, it is now possible to offer both high filtration efficiency and electrical conductivity.

Other key areas that can contribute to Electrostatic Discharge:

- Filter Media – media layer construction can influence high voltage charge
- Hydraulic Fluids – group II and III have low conductivity
- Temperature – higher voltage charge will generally exist with lower temperature

Anti-Stat versus Anti-Stat Premium Media

Since levels of ESD in a hydraulic system can vary, Schroeder Industries provides two expertly engineered anti-static element options for remediating static buildup in hydraulic equipment:



- Standard anti-static element option
- High filtration efficiency
- Prevents static buildup in fluids with medium conductivity levels and moderate levels of ESD
- Engineered for fluid conductivity levels of 100 pS/m and **higher**



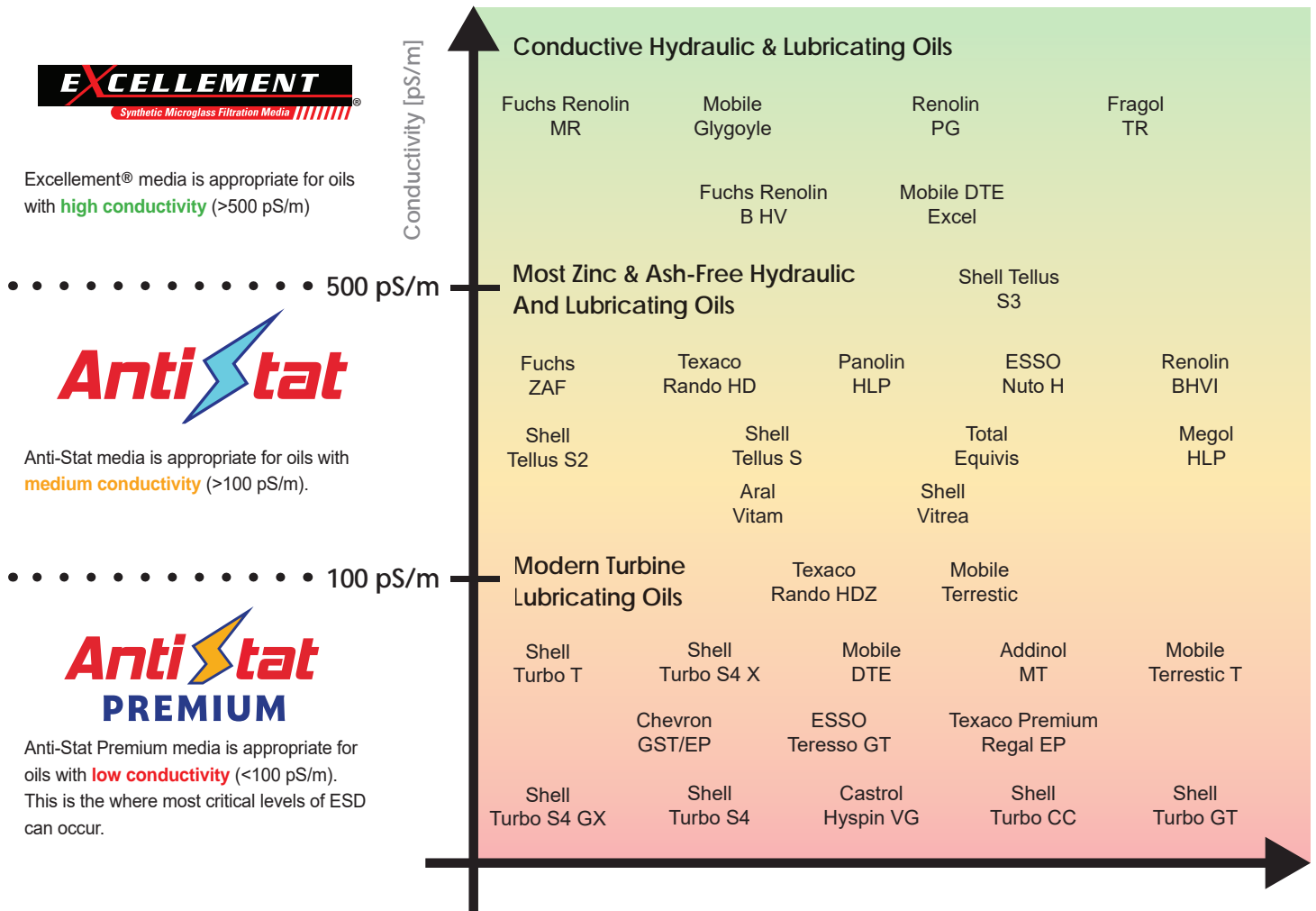
- Advanced anti-static element option
- High filtration efficiency
- Prevents static buildup in fluids with low conductivity levels and extreme levels of ESD
- Engineered for fluid conductivity levels of 100 pS/m and **lower**

Schroeder Element Media

Anti-Stat

Choosing The Right Anti-Static Elements For Your Application

Depending on the level of conductivity in your hydraulic fluid, different element options are best suited to High, Medium, or Low/Critical conductivity. Below is a selection of commonly used oil types, and the media Schroeder Industries recommends for each. Remember: **higher conductivity** means less static, and **lower conductivity** means more static.

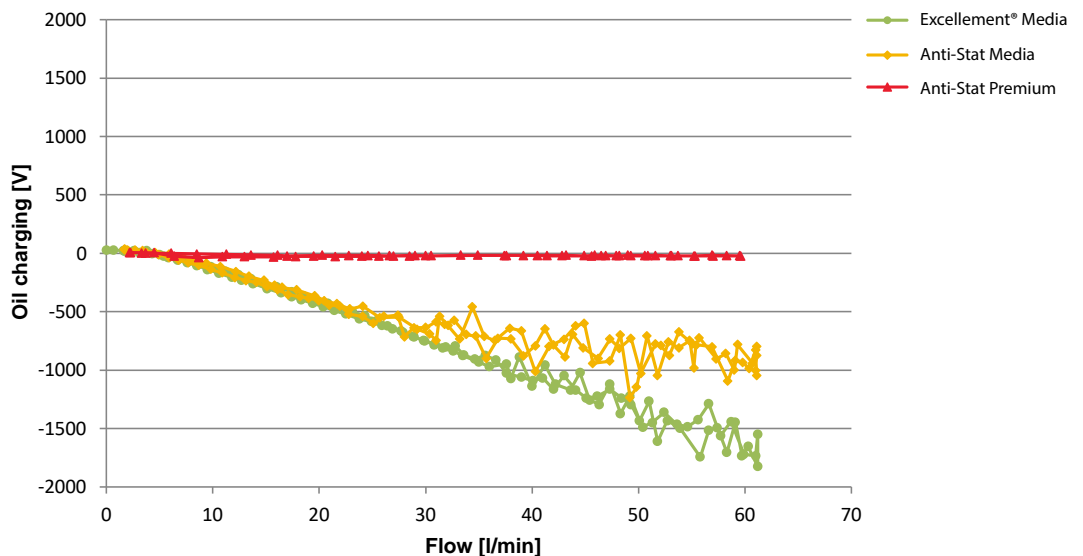


Media Comparison

As flow rate increases, the friction between the oil and filter element increases, which leads to static buildup. See how these three media types stack up in increasing flow rate scenarios:

Anti-Stat Premium entirely eliminates charging even as flow rate increases, compared to the moderate performance of Anti-Stat Media.

Electrostatic Charging: Excellement, Anti-Stat Media, Anti-Stat Premium





BestFit® High Performance Replacement Elements

Schroeder Industries manufactures over 2000 BestFit® performance replacement elements. In addition, Schroeder Industries produces all of the technical data to support the sale of these products. The BestFit® family consists of standard cartridge and spin-on replacements, CoreCentric® coreless elements, high collapse elements, and the melt-blown and spun-bonded process filtration elements. Most importantly, we offer the easiest way to determine the Schroeder equivalent of more than 42,000 competitive elements using the Schroeder online element search, accessible through our web site at www.schroederindustries.info.

Cross Reference Element Search Tool

Simply clicking on “BestFit® Element Cross Reference” on the Schroeder Industries home page (www.schroederindustries.com) allows you to match filter elements by entering either the manufacturer’s name or part number.

There are two ways to search on the Schroeder BestFit® cross reference page. The first way is to type a competitor element part number in the search bar. When searching by competitor part number, the search will activate as soon as three characters are entered (no spaces or symbols). The second way is to use the two drop down menus to find the competitor and part number you are trying to cross. When a cross has been located, the results table includes the corresponding BestFit® replacement element, dimensions (inside diameter, outside diameter and length), element style (e.g., cartridge or spin-on), media type (metal mesh, water removal, synthetic glass, or paper) and performance specifications, including beta ratios and dirt holding capacity. Also, a link to the left of the results table links to a generalized element drawing with all of the desired information on it. If there is an element that cannot be crossed, Schroeder Industries can work with you in finding a replacement solution to your element problem!

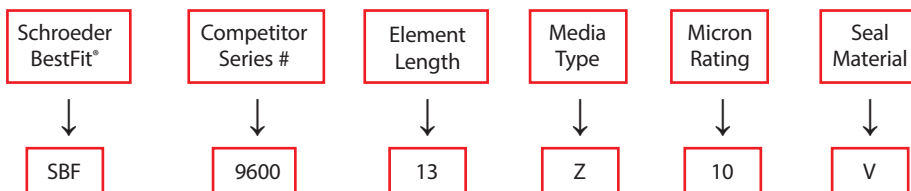


Schroeder BestFit® Elements include the following series:

QCLZ (8314 replacement)	SBF-0160R	SBF-0660R	SBF-170B	SBF-7500	SBF-9021	SBF-MF-100
QPML (8310 replacement)	SBF-0161D	SBF-0661D	SBF-2000	SBF-7507	SBF-9100	SBF-PXX
SBF-0030D	SBF-0240D	SBF-0850R	SBF-2544	SBF-8200	SBF-9400	SBF-PXW
SBF-0030R	SBF-0240R	SBF-0950R	SBF-2600R	SBF-8300	SBF-9600	SBF-RP83
SBF-0031D	SBF-0241D	SBF-1000	SBF-270	SBF-8400	SBF-9601	SBF-TXX
SBF-0060D	SBF-0280D	SBF-1001	SBF-270B	SBF-8500	SBF-9604	SBF-TXW
SBF-0060R	SBF-0281D	SBF-1002	SBF-370	SBF-8700	SBF-9650	SBF-UE210
SBF-0661D	SBF-0330D	SBF-1010	SBF-370B	SBF-8800	SBF-9651	SBF-UE219
SBF-0110D	SBF-0330R	SBF-1050	SBF-6000	SBF-8900	SBF-9800	SBF-UE310
SBF-0110R	SBF-0331D	SBF-1051	SBF-6400	SBF-8914	SBF-9801	SBF-UE319
SBF-0111D	SBF-0500R	SBF-1300R	SBF-6500	SBF-937	SBF-9901	SBF-UE610
SBF-0160D	SBF-0660D	SBF-170	SBF-7400	SBF-9020	SBF-BPE-7509	SBF-UE619

Schroeder BestFit® element model codes are determined by replicating the element model code it is replacing. An example of a breakdown of the model code is shown below:

Schroeder BestFit® Model Code: **SBF-9600-13Z10V**





CoreCentric®

CORELESS ELEMENT WITH BACKBONE

CoreCentric® Coreless Element

The CoreCentric® Coreless element is an environmentally friendly, all plastic element (no metal parts) that can be crushed, shredded or burned. These alternative methods of disposal will not only greatly reduce solid waste volumes, but also reduce disposal costs simultaneously.

CoreCentric® Coreless elements are designed to ensure optimum performance and ease of service. Built with Excellement® Z-Media®, CoreCentric® Coreless elements (QCL) fit in all Pall 8304 and 8314 housings and are available in the 8", 13", 16", and 39" lengths. Note: To ensure fast delivery, CoreCentric® elements are available with Viton® seals only.

CoreCentric® elements are designed with an integral patent design, cylindrical center core that provides column strength, added structural stability, and easy element removal. This core eliminates both the sticking and vertical sagging problems that can occur when using other manufacturer's coreless designs.

Schroeder's CoreCentric® elements are the only coreless element designed with backbone. We call it the "CORE ON CORE" element design.



Melt-Blown and Spun-Bonded Filter Elements For Process and Cutting Fluid Applications

Used in process and cutting fluid applications, melt-blown and spun-bonded elements are manufactured with either polypropylene or nylon filter media. Element fibers are blown onto and thermally bonded to a central support core with increasing fiber density towards the core, creating depth filtration. All layers are interlinked to offer maximum support while ensuring high void volume. The thermal bonding process minimizes media migration, providing consistent and reliable performance. They excel in dirt holding capacity and have low pressure drops. They also offer wide chemical compatibility, as well as being structurally sound and able to withstand high flow rates.

Melt-blown and spun-bonded elements fit most industrial housings incorporating the double open ended sealing arrangement, as well as standard polypropylene, PVC, and polycarbonate housings. In addition, these elements are available with end caps for most plug-in style O-ring fittings, making them ideally suited to more critical applications requiring the assurance of these double seals.

They have a wide range of applications including:

- Machine tool coolants
- Parts washing solvents
- Light oils
- Roll mill coolants
- Electrophoretic paints
- Fuels
- EDM fluids
- Etching solutions
- High water containing fluids
- Quench oils
- Plating solutions

For technical information on process filtration solutions, request catalog #L-2728.





Electric Drive Elements

The use of Schroeder's GREEN, Electric Drive (E-Drive) Media filtration technology guarantees safe and reliable equipment operation, all-while conserving the use of energy.

Part of Schroeder's Energy Saver initiative, filter elements made using the all-new E-Drive Media are characterized by a low pressure drop, making them suitable for low energy requirements compared to conventional hydraulic elements under the same ambient conditions.

In certain applications, the E-Drive Media can lower the pressure drop to a point where consumers may be able to size down their horsepower requirements on their current motor.

E-Drive filter elements are made using an all-new specialty formulated, high efficiency, low differential pressure media and are the perfect choice for use in electric hydraulic drive motor-pump units. Use them for conserving energy bills and wherever high viscosity fluids are employed – especially at low temperatures that produce a cold start behavior.



Downstream Epoxy Coated Wire Mesh

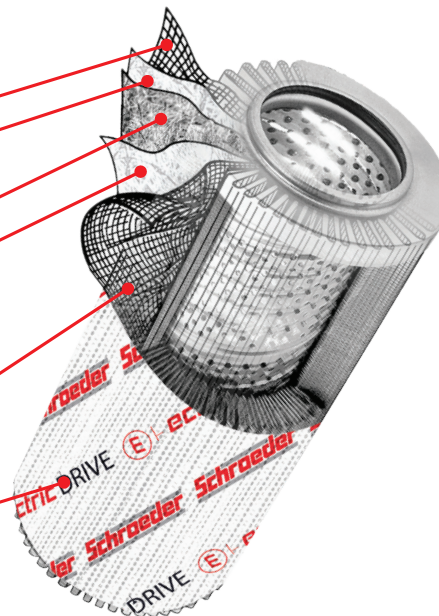
Downstream Scrim Layer

Specialty Low DP Filter Media

Upstream Scrim Layer

Upstream Epoxy Coated Wire Mesh

Branded Plastic Outer Wrap

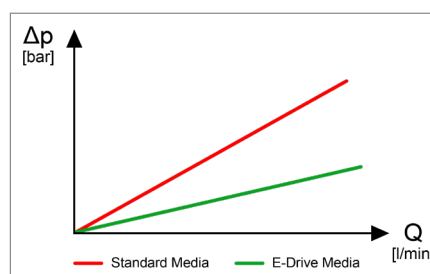


Technical Specs (evaluated in K-sized element):

Our testing demonstrates a great comparison of a 10-micron Electric Drive media element to one with the typical synthetic microglass media that is available on the market today.

- Element Collapse Rating: 145 psid (10 bar)
- Temperature Range: -22°F to 212°F (-30°C to 100°C)
- Flow Direction: Outside to Inside

Media Type	β_{200} [$\mu\text{m(c)}$]	Pressure Drop Factor [psid/gpm]
E-Drive Media (10 μ)	10.2	0.050
Typical Synthetic Media (10 μ)	10.6	0.156



Schroeder Element Media



E Media Elements (Cellulose)

Recognized as one of the industry's most cost effective media available in the marketplace, Schroeder E Media is an excellent choice for a wide variety of hydraulic system applications.

The E3 media is a specially designed mixture of cellulose and micro-glass, which provides both high dirt holding capacity and high particle capture efficiency, resulting in one of the industry's most cost effective cellulose media. Schroeder E10 media, used in the popular K10 element, is a standard for numerous industries, enabling continuous, trouble-free system operation.

Please note: The "E" identification for the media is not shown in the element model number. For example, our standard K3 and K10 elements are constructed with E media.

Table 14 shows the filtration ratios for Schroeder E media elements, while Figure 18 depicts this information graphically and provides corresponding % efficiencies for both the E3 and E10 media.

Table 14. E Media Efficiency Ratings per ISO 4572 without Antistatic Additive							
Element Media	Filtration Ratios (Beta)						
	$\beta_x \geq 75$ (98.7%)	$\beta_x \geq 100$ (99%)	$\beta_x \geq 200$ (99.5%)	β_3	β_5	β_{10}	β_{20}
E3	6.8	7.5	10.0	28	48	200	>1000
E10	15.5	16.2	18.0	—	1.3	10	400

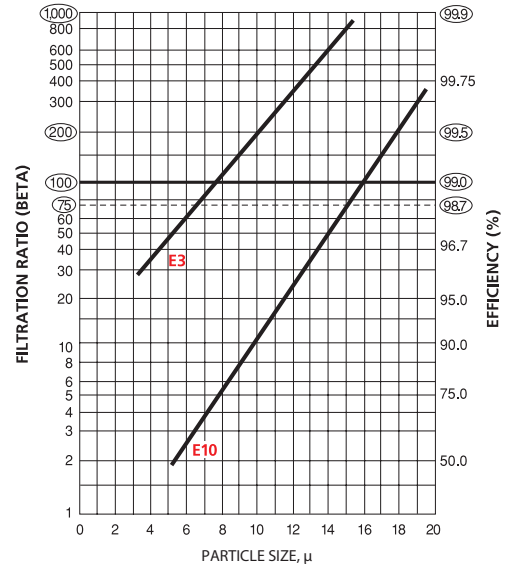
The cost effectiveness of E media becomes even more apparent when dirt holding capacity is considered (see Table 15). The dollars spent per gram of dirt retained with an E media element makes it an excellent choice for many contamination control programs.

Table 15. Typical Dirt Holding Capacities for E Media Elements (ACFTD capacity in grams)

Element Size	Media	
	E3	E10
N	8	7
NN	12	10
C	14	12
CC	30	25
A	16	13
K	54	44
9C	30	25
BB	162	132
18L	108	88
M	50	37
8Z	39	32
8T	39	32
P	—	37
9V	32	26
14V	51	41
6R	9	8

The data shown represents the cumulative results of E media multi-pass tests. Tests are conducted on a regular basis at Schroeder's own laboratory and at approved independent facilities. Tests are conducted without antistatic additive.

Figure 16. E Media Element Efficiencies Per ISO 4572



The data shown represents the cumulative results of E media multi-pass tests. Tests are conducted on a regular basis at Schroeder's own laboratory and at approved independent facilities. Tests are conducted without antistatic additive.



M Media Elements (Reusable Metal)

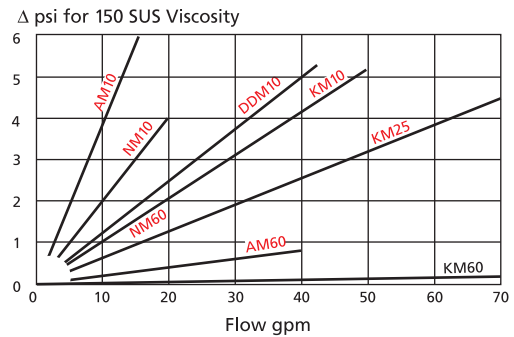
Schroeder offers a line of metal reusable elements to meet specific application needs. These rugged elements are constructed of high-strength woven stainless steel wire mesh. The wire mesh and center tube are epoxy-bonded to the end caps.

The element design incorporates shallow pleats which provide an efficient flow pattern with optimum pressure drop. In addition, the shallow pleat construction simplifies the cleaning process. These elements may be cleaned using a liquid solution (either Kleenite or Oakite) or by ultrasonics. Request Schroeder's #L-2094 Data Sheet for details regarding recommended cleaning procedures.

Schroeder metal elements are available in a variety of sizes for 10, 25, 60, 150, and 260 μ filtration and are shown in Table 16. The size and type of wire mesh used for each micron rating are shown in Table 17.

10 μ	200 x 1400 twilled Dutch weave
25 μ	165 x 1400 twilled Dutch weave
60 μ	50 x 250 plain Dutch weave
150 μ	100 x 100 square Dutch weave
260 μ	60 x 60 square Dutch weave

Figure 17. Typical Pressure Drop Performance Data for Schroeder Series M Media Elements



F-Pack Media

Today's demand for the use of fire-resistant fluids that assure safe and dependable operation in an electrohydraulic control system (EHC) demand peak performing media. The change-over to Schroeder "F" Pack media from a traditional, high performance, synthetic media results in lower, clean pressure drop and higher efficiency. Most importantly, the change eliminates cast-off, or shedding of synthetic fibers, which can result in servo valve failure.

Construction

- Total stainless steel, sintered depth style media
- Pleated media
- Sintered construction prevents shedding of media
- Outside/in flow

Performance

- Extremely efficient: $\beta_3=1000$ and $\beta_{10}=1000$
- Excellent choice for use with phosphate esters and Fyrquel[®] fluids
- Operating temperature -20°F to 350°F with use of Viton[®] seals
- Element collapse rating 3000 psid for use at high differential pressures

Schroeder Element Media



W Media Elements (Water Removal)

Water can cause a host of contamination problems in hydraulic and lubrication systems. It can exist in a system in a dissolved state or in a free state. In a dissolved state, the fluid is holding the water. In a free state, the water is above the specific saturation point of the fluid, and thus cannot dissolve or hold more water. A mild discoloration of the fluid generally indicates that a free water condition exists in the system.

Schroeder's uniquely designed water removal elements employ a quick-acting water-absorbent polymer, capable of holding over 400 times its own weight in water. These elements are ideal for in-line use, re-circulating filter systems, or in portable filtration carts.

Water retention is positive, even under high pressure, so there is no downstream unloading. However, water retention capacity is dependent on the type of fluid and additives present in a system, its viscosity and its flow rate. As a result, retention capacity may be diminished by some additives present in the system, by a high viscosity, or a high flow rate.

Table 18 shows water holding capacity and Table 19 shows the pressure drops for select W media elements. (On net page)

For best results, flow rates through a single KW element should be 10 gpm (38 L/min) or less.



Aqua-Excellement™ High Efficiency Particulate Water Removal Media

Schroeder offers Aqua-Excellement™ filter elements, which excel at removing both water and solid particulates from petroleum-based fluids. The filtering media incorporated into Aqua-Excellement™ elements is referred to as ZW and includes layers of Schroeder's high efficiency Excellement® Z-Media® for capturing particulate contaminations in combination with water removal capabilities. The high efficiencies, outstanding beta stabilities, and excellent dirt holding capacities that Excellement® customers have become accustomed to are present in the new ZW media. Paired together, these two types of media make a winning combination and are highly effective at filtering out water and solids simultaneously.

Aqua-Excellement™ elements are currently available in multiple sizes for both cartridge and spin on style. Equipped, with ZW media, Schroeder MFS/AMS series carts can be effectively utilized for on-site flushing applications for cleaning stagnant large volume reservoirs. When used on a kidney loop system installed on power units, the ZW media allows for smaller kidney loop system and lower dimensional clearance and weight. Other applications include mobile filtration systems and bulk transfer systems.

Schroeder Kidney Loop Systems and Mobile Filtration Carts can utilize the KZW cartridge elements ZW Spin-On Elements



ZW Spin-On Elements



NOTE: When using any K-size housing do not exceed 14 gpm

Shown below is a breakdown of the layers of the new K-size ZW cartridge element.

- Epoxy-coated steel wire fabric provides maximum support and rigidity.
- Spun-bonded scrim provides downstream media support and increased stability
- Water removal media
- Two layers of Z-Media provide maximum efficiency and dirt-holding capacity with minimal pressure drop
- Epoxy-coated steel wire fabric provides maximum support and rigidity.

Total water injection flow rate: 2.0 ml/min.

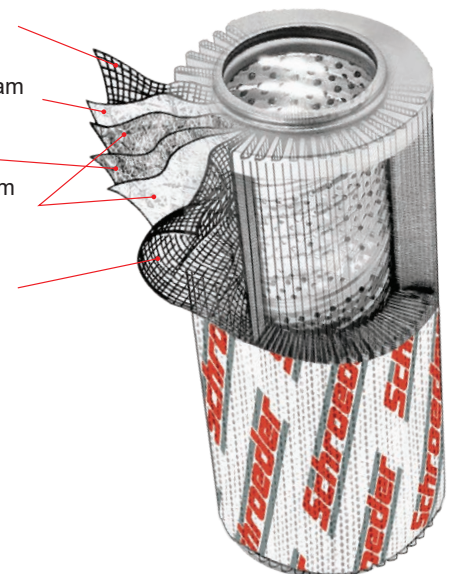


Table 18. Water Holding Capacity

Element Model No.	Flow gpm (L/min)	Capacity	
		mL	ounces
KW	20 (75)	150	5
KW	16 (60)	200	7
KW	10 (38)	320	11
KW	2 (7.5)	500	17
6RW	20 (75)	31	1
6RW	2 (7.5)	104	4
8TW	20 (75)	93	3
8TW	2 (7.5)	311	11
9VW	20 (75)	81	3
9VW	2 (7.5)	270	9
14VW	20 (75)	130	4.4
14VW	2 (7.5)	435	14.7
16QW	60 (225)	480	16
16QW	10 (38)	1350	45
39QW	140 (530)	1100	37
39QW	22 (83)	3100	105
MW	14 (53)	100	3.5
MW	1.5 (6)	350	12

Table 19. Pressure Drop

Element Model No.	Flow gpm (L/min)	ΔP psi (bar)
KW	20 (75)	2.5 (0.17)
14VW	20 (75)	2.5 (0.17)
16QW	65 (246)	2.5 (0.17)
39QW	150 (570)	2.5 (0.17)

Table 20. Maximum Recommended Flow Rate

Element Model No.	Maximum Recommended Flow Rate	
	gpm	L/min
KW	20	75.7
6RW	4	16
8TW	12	47
9VW	11	41
14VW	20	75
16QW	60	225
39QW	140	530
MW	16	6

Table 21. KZW Cartridge Element Dirt and Water Holding Capacities

Element Part Number	DHC (g)	Water Removal Capacity		Filtration Ratios (Beta)		
		2.5 gpm	10 gpm	β _x ≥ 200	β _x ≥ 1000	ΔP Factor
KZW1	61	197 mL / 6.66 oz	134 mL / 4.53 oz	<4.0	<4.0	0.43
KZW3/KKZW3	64/128			4.0	4.8	0.32
KZW5/KKZW5	63/126			5.1	6.4	0.28
KZW10/KKZW10	57/114			6.9	8.6	0.23
KZW25/KKZW25	79/158			15.4	18.5	0.14



Aqua-Excellement™ High Efficiency
Particulate Water Removal Media

Table 22. ZW Spin-On Element Dirt and Water Holding Capacities

Element Part Number	DHC (g)	Water Removal Capacity		Filtration Ratios (Beta)	
		2.5 gpm	10 gpm	β _x ≥ 200	β _x ≥ 1000
10MZW10	53	185 mL / 6.3 oz	126 mL / 4.3 oz	6.9	8.6

