

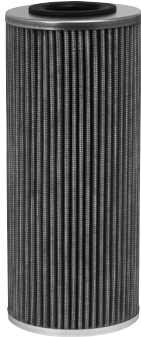
Schroeder Element Media



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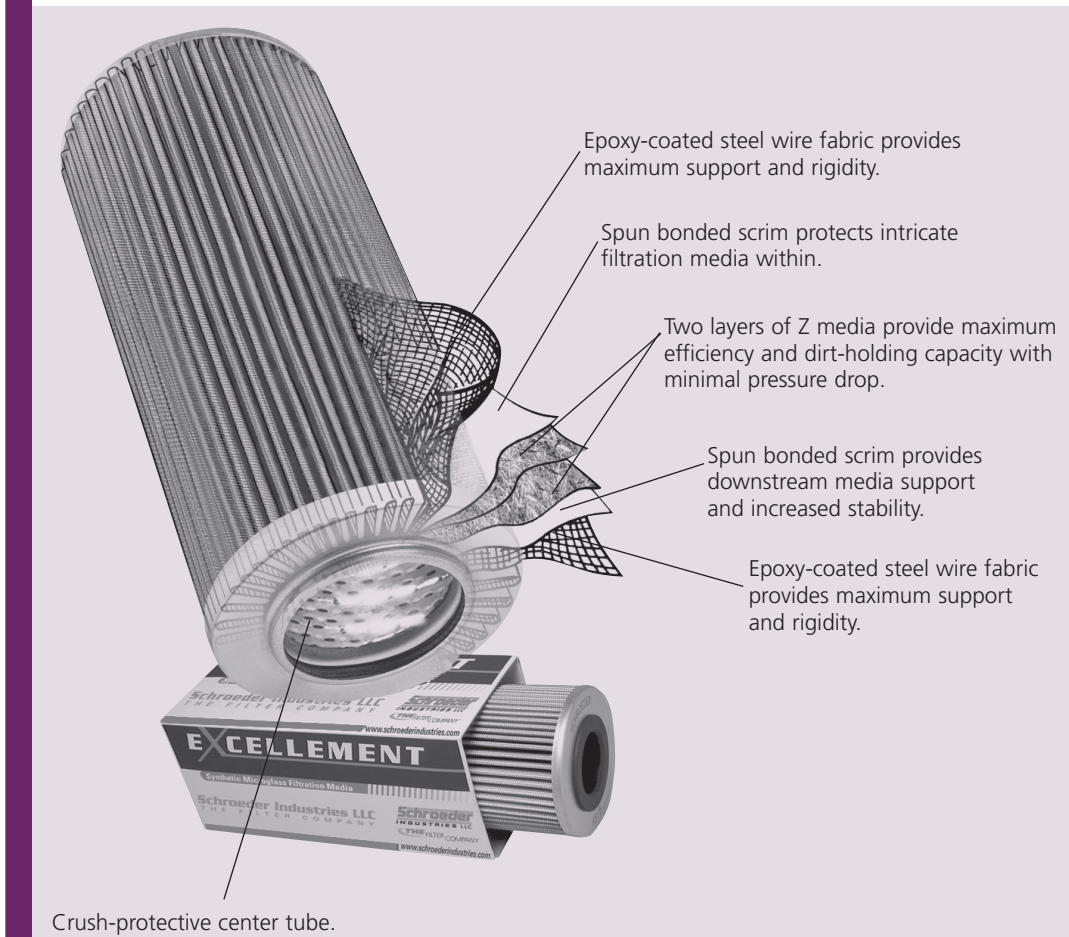
Z Media Elements (Synthetic)



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



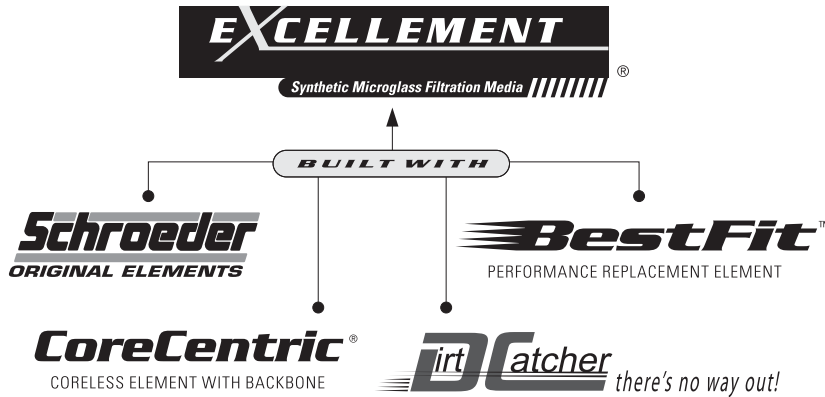
Schroeder's complete line of quality filtration elements — including Schroeder's original element designs, BestFit™ replacement elements, CoreCentric® coreless repair elements and DirtCatcher™ — are manufactured with Excellement (Z) media.

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.

- **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 and double layer of Excellement® (Z) media
- **Beta stability:** Excellement® (Z) media maintains efficiency as differential pressure increases

Features and Benefits



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 fabric 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 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.

Excellement® Elements Have Improved Filtration Ratios

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.

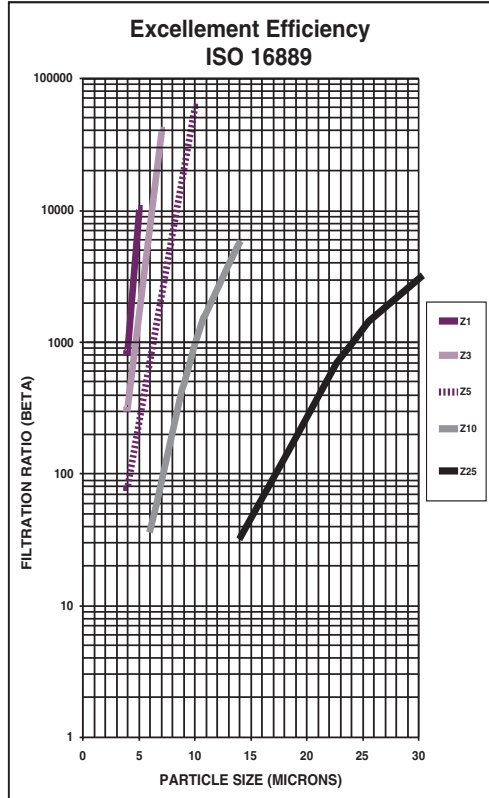
Table 11. Z Media Filtration Ratios

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

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**Excellement®
Efficiency**

Figure 10. Z Media Excellement Efficiency



Typical Dirt Holding Capacities for Z Media Elements

Element Size	Medium				
	Z1	Z3	Z5	Z10	Z25
N	12	12	12	11	11
NN	15	16	18	15	15
C	25	26	30	28	28
CC	57	58	64	62	63
A	25	26	30	28	28
K	112	115	119	108	93
BB	268	275	301	272	246
18L	200	205	228	203	184
8T	51	52	59	55	53
M	—	105	—	104	—
8Z	51	52	59	55	56
KT	—	—	—	56	—
9V	55	57	62	52	48
14V	102	105	115	104	94
9C	57	58	64	62	63
6R	15	15	17	14	25

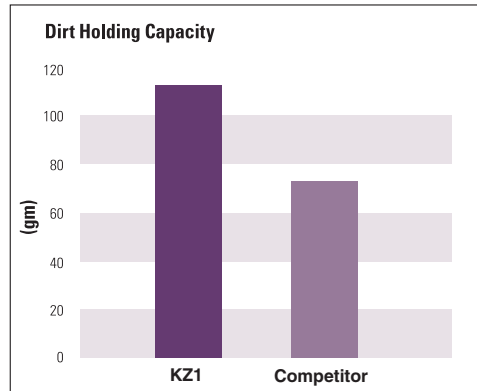
**Excellement
Elements Have
High Dirt
Holding
Capacities**



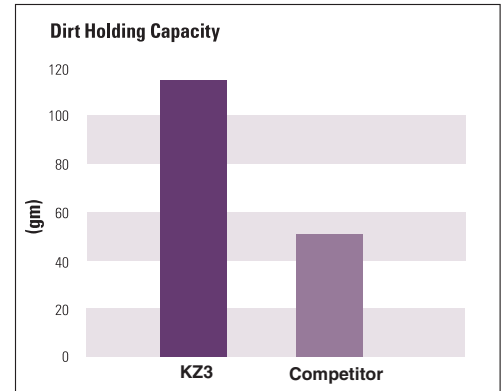
Dirt holding capacity (DHC), simply stated, is the amount of solid contamination that an element can hold before the filter housing reaches its terminal bypass setting. The higher the dirt holding capacity, the longer the element will last. This translates to fewer element purchases, less frequent equipment 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)

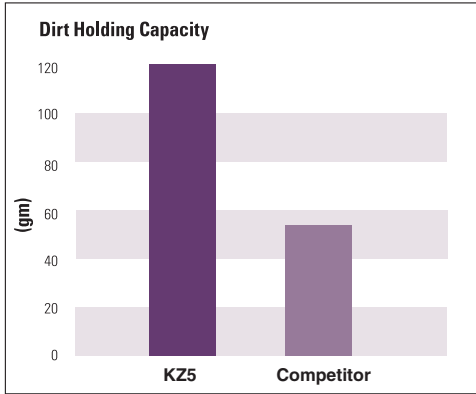


11(b)

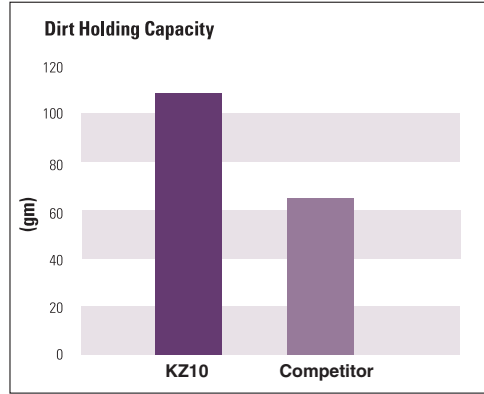


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11(c)



11(d)



11(e)

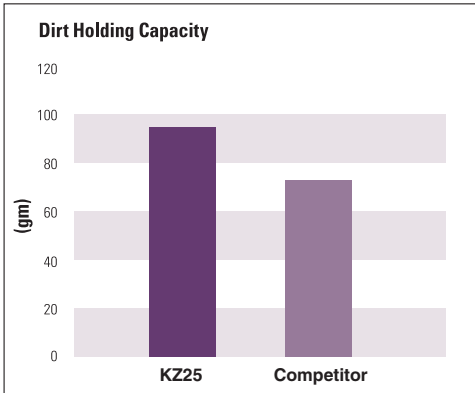


Table 12. Typical Dirt-Holding Capacities for Z Media Element (in grams)

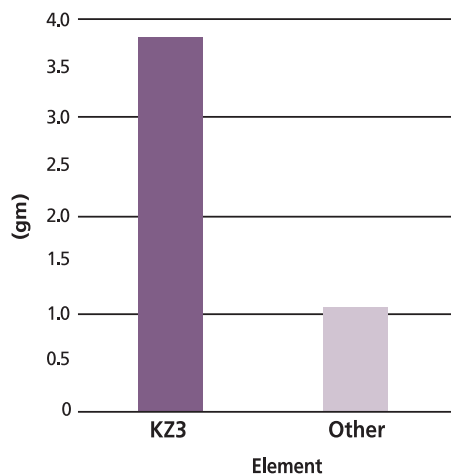
Type Medium	Element Size (Diameter x Length)				
	2" x 6"	3" x 8"	4" x 9"	5" x 18"	6" x 39"
Z1	15	51	112	268	1485
Z3	15	52	115	275	1525
Z5	16	59	119	301	1536
Z10	14	55	108	272	1432
Z25	15	56	93	246	1299

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.

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. 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 Held per Dollar Spent



Cost Per Gram Analysis



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