

## Schumatherm™ Filter elements

### Description

Schumatherm filter elements are manufactured from high-quality porous fireclay ceramic. This material is distinguished by its excellent chemical and thermal resistance. Therefore Schumatherm ceramic filters or tiles can be used for a large variety of applications as long as special process conditions do not require other process specific materials.

One main application for Schumatherm filter cylinders is the use as support material for precoat filtration. The surface structure and the high permeability of these elements builds an ideal support for the precoat. Another application is a flat bed aeration in combination with the oxidation of components such as Fe, Mn, Al.

### Applications

Schumatherm (ST)	Examples
Precoat filter for liquids	Filtration of water
Particle filter for gases	Coarse filter for biogas applications
Diffuser	Potable water treatment Aeration in combination with oxidation of Fe, Mn or Al (i.e. in flat bed aerators) and de-acidatification (stripping of CO <sub>2</sub> )
Fluidization	Hot fluidized bed processes, ash transportation, conveying of red, iron



Scanning  
Electron  
Micrograph

### General Information

- Schumatherm filter elements are approved for the utilization in drinking water according to German regulations DVGW W270 and the KTW recommendation.
- Schumatherm filter ceramic media can be machined using hard metal tools.
- Ceramic elements are to be handled with care.
- Elements can be glued using commercial or special ceramic glues. Careful consideration should be taken regarding operating temperature and chemical resistance.

### Chemical Resistance<sup>1</sup>

Schumatherm ceramic filter media is resistant against acids, saline solutions and organic solvents, liquid or gaseous. It is not resistant to hydrofluoric acid. Schumatherm ceramic filter media is resistant up to pH 10 in the alkaline range.

<sup>1</sup> Note: As end use conditions can vary it is the users responsibility to verify compatibility with their specific use conditions.

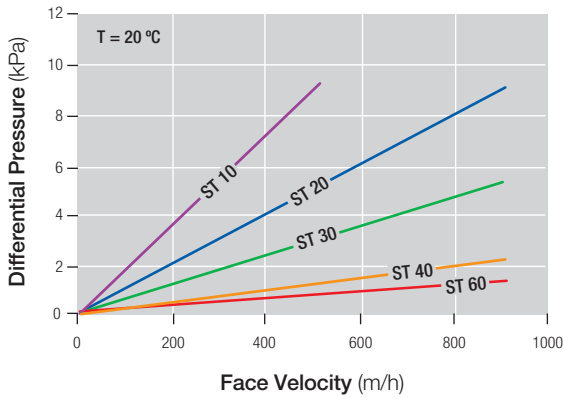
### Technical Information

Schumatherm (ST)	Unit	10	20	30	40	60
Filter grade, liquid filtration	µm	2,5	15	30	40	50
Filter grade, gas filtration	µm	1,5	3	6	8	10
Porosity	%	40	40	35	35	35
Material density	g/cm <sup>3</sup>	1,5	1,5	1,5	1,5	1,5
Specific permeability <sup>2</sup>	10 <sup>-13</sup> m <sup>2</sup>	45	75	125	310	470
Bending strength <sup>3</sup>	MPa	>12	>10	>9	>9	>8
Bursting pressure	bar	>30	>25	>20	>20	>15
Max. temperature resistance <sup>4</sup>	°C	800	800	800	800	700
Thermal expansion coefficient (25 – 800 °C)	10 <sup>-6</sup> /K	5,8	5,8	5,8	5,8	5,8
Dimensions Do / Di	mm	70 / 40	70 / 40	70 / 40	70 / 40	70 / 40

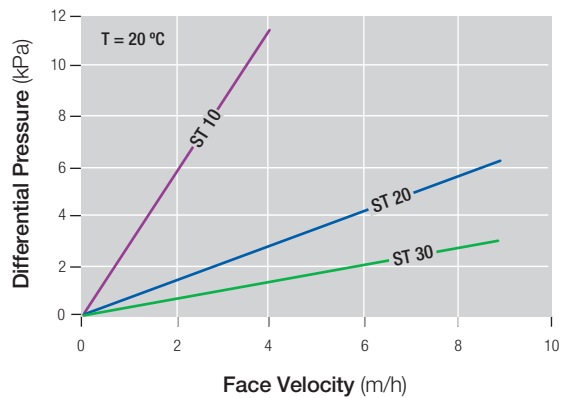
<sup>2</sup> = calculated from differential pressure AIR, <sup>3</sup> = O-ring strength, compression, <sup>4</sup> = depending on operating conditions

# Flow vs Differential Pressure

Differential Pressure for Air Flow



Differential Pressure for Water Flow



## Ordering Information

Part Number	Type	Do / Di [mm]	Length [mm]	Area [m <sup>2</sup> ]	Weight [kg]	
88021000	Cylinder	10	70 / 40	500	0,11	2,0
89581770		20	70 / 40	500	0,11	2,0
88027800		30	70 / 40	500	0,11	2,0
89581771		40	70 / 40	500	0,11	2,0
88030800		60	70 / 40	500	0,11	2,0
88027900		30	70 / 40	750	0,16	3,0
88024700	20	70 / 40	1000	0,22	4,0	
89451999	40	70 / 40	1000	0,22	4,0	
88177300	60	70 / 40	1000	0,22	4,0	
88025200	20	120 / 70	500	0,19	5,6	
88028600	30	120 / 70	500	0,19	5,6	
84280100	Diffuser Set	30	70 / 40	400	0,18	--
84274600		30	70 / 40	500	0,22	--
84274700		30	70 / 40	750	0,33	--

Part Number	Type	Length [mm]	Width [mm]	Height [mm]	Area [m <sup>2</sup> ]	Weight [kg]	
89580794	Plate	20	250	250	50	0,063	4,7
88073100		30	250	250	50	0,063	4,7



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