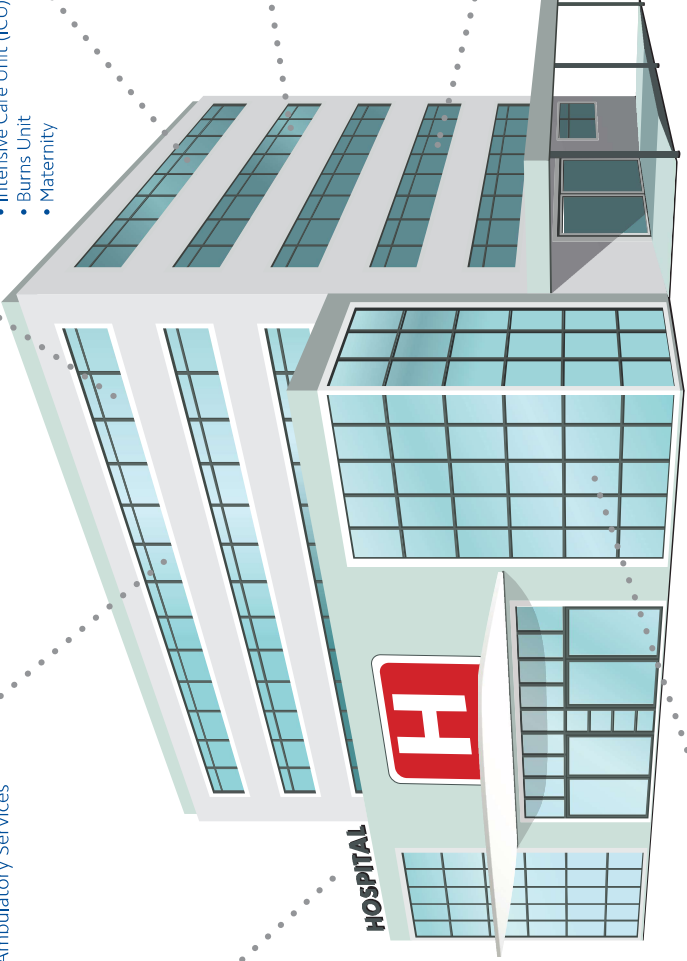


Process Filtration & Water Treatment Solutions for Hospitals



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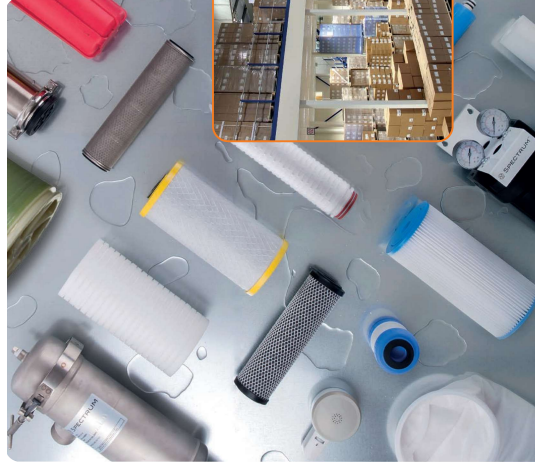
easy^{to} deal
with

Filtration and Water Treatment for 40 years

Filedert has provided hospitals with filtration and water treatment solutions for 4 decades, helping to produce safe, pure water to meet stringent standards.

Hospitals benefit from Filedert's easy to deal with philosophy, supplying direct from their extensive stock, helping to reduce supplier base and purchasing costs, providing high quality product solutions for use in each department.

Typical challenges include the removal of bacteria, parasites and other microorganisms from water that may cause infection or contamination of critical medical processes.



Filedert stock over
£5m
of product

... available for next day delivery. You can trust Filedert to get the goods to you when you require them.

Supplying the quality filtration brands you can trust...

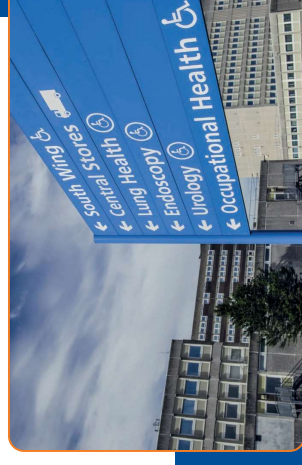


Our team of experts work with hospital and healthcare professionals to provide solutions to water compliance challenges.



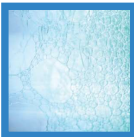
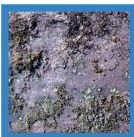
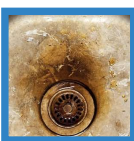
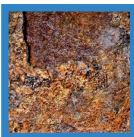
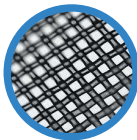
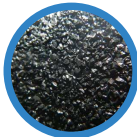
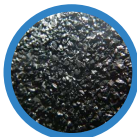
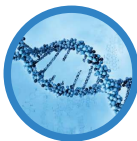
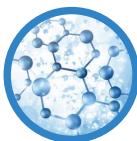
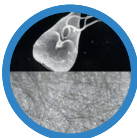
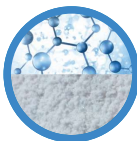
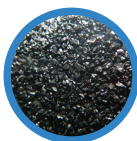
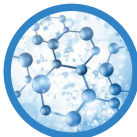
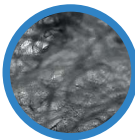
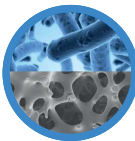
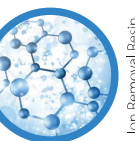
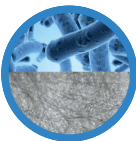
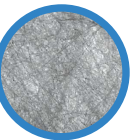
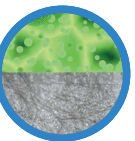
Compliant

Certified and compliant products tested to the high standards required by our clients, form part of Filedert's extensive product portfolio. Approvals from WRAS, NSF, CE and DWI amongst others, puts Filedert at the forefront of high quality filtration supply.



WATER: A CLOSER LOOK

The following contaminants found in water can cause problems:

Contaminants									
Particulate	Disinfectant	Organics	Bacteria	Scale	Parasites	Pesticides	Colour	High Salts (Alkali)	Low Salts (Acidic)
									
Dirt, sediment	Chlorine, chloramine	Leaves, mould, animal waste	Legionella, pseudomonas	Calcium, magnesium	Cryptosporidium, giardia	Nitrates, phosphates	Iron, tannins, algae	Potassium, sodium, chlorides	Purified water
Blocks pipework, equipment damage and bacterial growth	Poor taste, attacks RO membranes	Bio-film growth, poor taste	Illnesses including Legionnaires disease	Blocked pipes, higher energy costs	Diarrhoea and vomiting	Gastric issues, blue baby syndrome	Staining, dehydration	Mineral build-up, high blood pressure	Dissolves metal pipes and valves
									
Bag Filter	Carbon Cartridge	Carbon Cartridge	Ultraviolet Disinfection System	Ion Exchange Resin (Softening)	Absolute Pleated Cartridge for Parasites and Cysts	Reverse Osmosis	Carbon Cartridge	Ion Removal Resin	pH Correction
									
Spun-Bonded Cartridge	Carbon Cartridge	Carbon Cartridge	Hollow Fibre Cartridge	Ion Exchange Resin (Softening)	Absolute Pleated Cartridge for Bacteria	Reverse Osmosis	Carbon Cartridge	Ion Removal Resin	pH Correction
									
Pleated Cartridge	Carbon Cartridge	Carbon Cartridge	Absolute Pleated Cartridge for Bacteria	Ion Exchange Resin (Softening)	Absolute Pleated Cartridge for Endotoxins	Reverse Osmosis	Carbon Cartridge	Ion Removal Resin	pH Correction
									
Absolute Pleated Cartridge	Carbon Cartridge	Carbon Cartridge	Absolute Pleated Cartridge for Bacteria	Ion Exchange Resin (Softening)	Absolute Pleated Cartridge for Endotoxins	Reverse Osmosis	Carbon Cartridge	Ion Removal Resin	pH Correction
Treatment									

INCOMING WATER



Hospitals store large volumes of water to distribute through long and complicated pipework. Cleaning the water at this initial stage has benefits for an entire hospital's water network.

- Clean water storage tanks
- Minimised maintenance on pipework and equipment
- Reduced bacteria growth



INCOMING WATER: MAINS

The Challenges

- Sediment build-up in storage tanks results in the need for regular cleaning
- Particulate in pipes encourages bio-film and bacterial growth resulting in higher usage of disinfection chemicals
- Scale and dirt build-up in pipes results in pumps requiring more energy to operate
- Dirt in machinery around a hospital causes breakdowns and higher maintenance expense
- Bacteria growth in storage tanks causes hospital-wide issues
- Sediments in water treatment equipment and resins increase maintenance and salt usage



The Solution

- Remove all visible particulate before a softener and storage tank by using depth filtration
- Remove the hardness using an ion exchange resin process
- Disinfect the water prior to distribution using UV light to suppress bacteria growth in downstream pipework

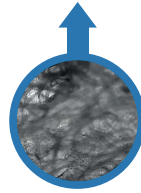


Feed Water



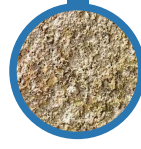
Particle Removal

Varying sources of water and mains pipes results in different contaminants being contained that are affected by seasonal changes, pipework types and roadworks.



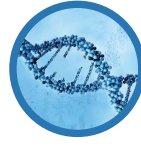
Particle Removal

Particle removal is needed to protect water treatment equipment and storage tanks from requiring costly maintenance, due to dirt and particle build-up.



Hardness Removal

Prevents scale build up on tanks, pipeworks and equipment throughout a hospital.



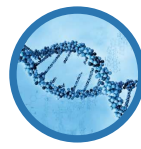
Ultraviolet Disinfection

UV light impedes bacterial growth by sterilising the DNA of micro-organisms.



Particle Removal

To aid disinfection by avoiding 'shadowing' whereby bacteria hides behind particulate which protects it from the UV light.

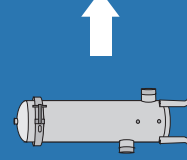


Ultraviolet Disinfection

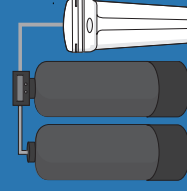
UV light impedes bacterial growth by neutralising the DNA of micro-organisms.

Fieder Recommends

- High dirt holding SPECTRUM polypropylene spun cartridges in a durable 316 stainless steel housings
- Continuous supply SPECTRUM PWS Duplex softener to remove hardness from water
- High dosage SABRE UV disinfection systems
- To suit flow rates to 7m³/hr



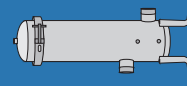
Stainless Steel Housing
Inox 5 round, 40"
Part Code: SFH-SPC-5-40-2-GP-ML
Spun-Bonded Cartridge
Thickness 1 micron, 40"
Part Code: SSP-1-40



Water Softener System
SPECTRUM PWS Duplex
250 litre resin capacity
Part Code: PWS-12.5M



Storage Tank
UV System
SABRE 250 lpm
Part Code: SUV-5-250-2



Stainless Steel Housing
Inox 5 round, 40"
Part Code: SFH-SPC-5-40-2-GP-ML
Spun-Bonded Cartridge
Thickness 1 micron, 40"
Part Code: SSP-1-40



UV System
SABRE 250 lpm
Part Code: SUV-5-250-2

INCOMING WATER: BOREHOLE



The Challenges

- Parasites, such as *Cryptosporidium* and *Giardia*, infect water causing sickness in the young and elderly
- Bacteria in microbiologically unsafe water can cause hospital-wide issues across many departments
- Sediment build-up in storage tanks results in the need for regular cleaning
- Particulate in pipes encourages bio-film and bacterial growth, resulting in a higher usage of disinfection chemicals
- Scale and dirt build-up in pipes results in pumps requiring more energy to operate
- Dirt in machinery around a hospital causes breakdowns and higher maintenance expense



The Solution

- Remove particulate using a combination of bags and depth cartridges.
- Remove the hardness using ion exchange resin process
- Increase parasite removal protection with antimicrobial depth cartridges
- Guard against parasites with certified pleated cartridges
- Disinfect water before storage with ultraviolet light and again prior to distribution to suppress bacteria growth downstream
- Remove of bulky solids such as grit, shale, leaves etc.
- Removal of the remaining visible dirt to protect the water treatment equipment.
- Prevents scale build-up on tank, pipework and equipment throughout hospital.
- Removal of any resin fines produced in the softening stage and to protect higher value absolute parasite and cyst removal stage.
- Absolute *Cryptosporidium* and cyst removal ensures the hospital is protected from a parasite infestation and prevents 'shadowing' in the UV disinfection stage.
- To aid disinfection by avoiding 'shadowing' whereby bacteria hides behind particulate which protects it from the UV light.
- UV light impedes bacterial growth by sterilising the DNA of micro-organisms.
- UV light impedes bacterial growth by sterilising the DNA of micro-organisms.
- UV light impedes bacterial growth by sterilising the DNA of micro-organisms.

Filder Recommends

- Economic, high dirt holding SPECTRUM fibre pleated cartridges & spun cartridges, in durable 316 stainless steel housing
- Continuous supply SPECTRUM PWS Duplex softener to remove hardness from water
- SPECTRUM AMS cartridges developed to inhibit the growth of trapped bacteria and microbes within a filter
- Certified absolute SPECTRUM Crypto glass fibre pleated cartridges - *Cryptosporidium* removal at 1 micron absolute - in a durable 316 stainless steel housing high dosage SABRE UV disinfection systems
- To suit flow rates to 7m³/hr
- Stainless Steel Bag Housing
Part Code: SBH-SPC-1-2-2-GR-ML
Bag Filter
Economic 50 micron, size 2
Part Code: EBEP-50-2
- Stainless Steel Housing
Inox 5 round, 40"
Part Code: SFH-SPC-5-40-2-GR-ML
Spun-Bonded Cartridge
TruDepth 10 micron, 40"
Part Code: SSP-10-40
- Water Softener System
SPECTRUM PWS Duplex
250 litre resin capacity
Part Code: PWS-12.5M
- Stainless Steel Housing
Inox 5 round, 40"
Part Code: SFH-SPC-5-40-2-GR-ML
Pleated Cartridge
Crypto 1 micron, 40"
Part Code: CP40EG
- Storage Tank
Part Code: SUV-5-250-2
- Stainless Steel Housing
Inox 5 round, 40"
Part Code: SFH-SPC-5-40-2-GR-ML
Spun-Bonded Cartridge
TruDepth 1 micron, 40"
Part Code: SSP-1-40
- UV System
SABRE 250 lpm
Part Code: SUV-5-250-2
- UV System
SABRE 250 lpm
Part Code: SUV-5-250-2



ENDOSCOPY



The quality of the water used in the Automated Endoscope Reprocessors (AER) is paramount for the cleanliness of endoscopes. This is particularly important at the final rinse stage where the disinfectant chemicals are washed off and bacteria is not introduced from this water. It is therefore critical that high purity water is used.

- Bacteria-free endoscopes
- Low TVC readings for AER ensures continuous system usage
- Particle free water minimises maintenance requirements

ENDOSCOPY: MAINS FEED

MAINS FEED TO AUTOMATED ENDOSCOPE REPROCESSOR (AER)



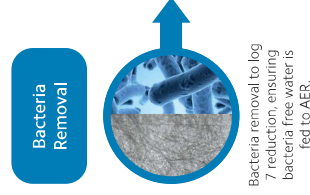
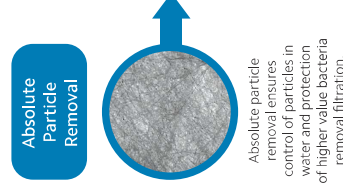
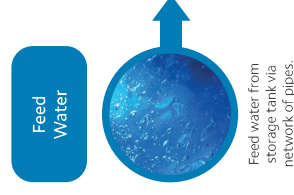
The Challenges

- Feeding the AER with high purity water
- Bacteria in the rinse water can contaminate the endoscope
- Residue left on the endoscope after disinfection
- Maintaining good water quality in preparation of detergents and disinfectants
- Consistent TVC levels out of specification, as per BS EN ISO 15883-4
- Compliant with HTM 01-06 parts A to E



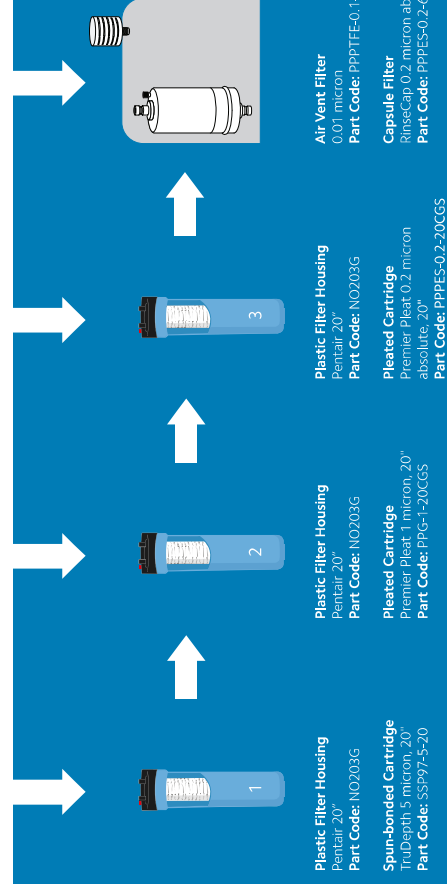
The Solution

- Install high efficiency, high capacity spun-bonded filters to remove particulate from the water and protect the higher value absolute cartridges
- Remove bacteria and particulate from the water to protect the AER and ensure bacteria-free water for final rinse
- Remove bacteria from final rinse water with pleated capsule, where appropriate
- Remove bacteria from air exposed to water in the AER water storage tank, where appropriate



Filerder Recommends

- Housing 1: High efficiency SPECTRUM polypropylene spun-bonded depth cartridge
- Housing 2: Certified absolute rated SPECTRUM glass fibre layered pleated cartridge
- Housing 3: Certified absolute bacteria filtration with SPECTRUM polyethersulfone layered pleated cartridge
- SPECTRUM absolute rated 0.01 micron PTFE air vent bacteria filtration on AER
- Repeatedly autoclavable SPECTRUM RinseCap 0.2 micron polyethersulfone membrane capsule, final guard filter for rinse water
- To suit flow rates to 20 lpm feed to AER



Plastic Filter Housing
Pentair, 20"
Part Code: NO203G

Spun-bonded Cartridge
TriDepth 5 micron, 20"
Part Code: SSPJ7-5-20

Plastic Filter Housing
Pentair, 20"
Part Code: NO203G

Pleated Cartridge
Premier Pleat 1 micron, 20"
Part Code: PPG-I-20CGS

Plastic Filter Housing
Pentair, 20"
Part Code: NO203G

Pleated Cartridge
Premier Pleat 0.2 micron absolute, 20"
Part Code: PPGES-0.2-20CGS

Air Vent Filter
0.01 micron
Part Code: PPTPE-0.1-3-1/2BSPM-T

Capsule Filter
RinseCap 0.2 micron absolute
Part Code: PPGES-0.2-6W1

ENDOSCOPY: RO FEED

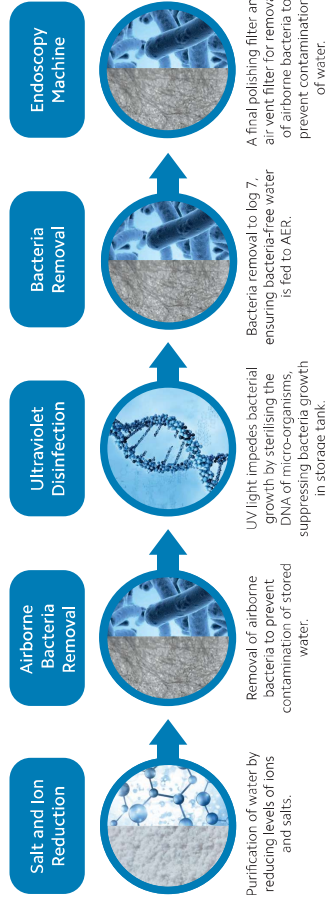
RO FEED TO AUTOMATED ENDOSCOPE REPROCESSOR (AER)

The Challenges

- Feeding the AER with bacteria-free water
- Reducing bacteria growth in the AER
- Bacteria in the rinse water can infect the endoscope
- Consistent TVC levels out of specification as per BS EN ISO 15883
- Protecting the high value reverse osmosis membrane
- Residue left on endoscope after disinfection
- Maintaining good water quality in preparation of detergents and disinfectants
- Compliant with HTM 01-06 parts A to E

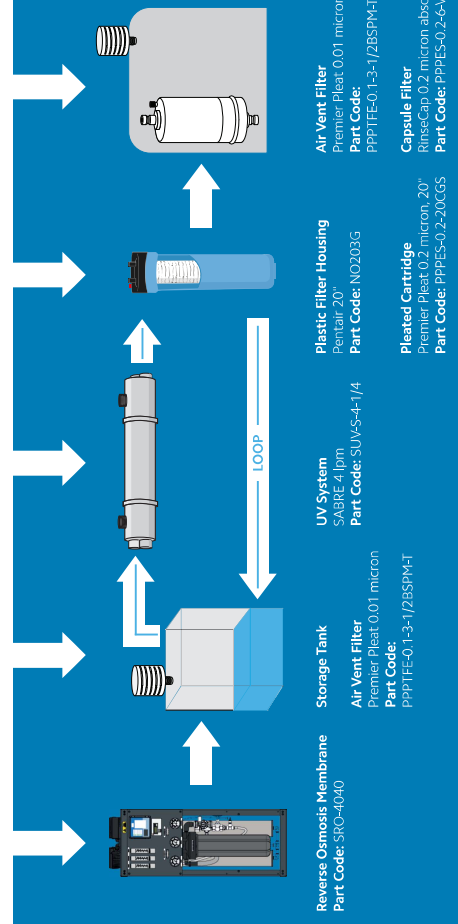
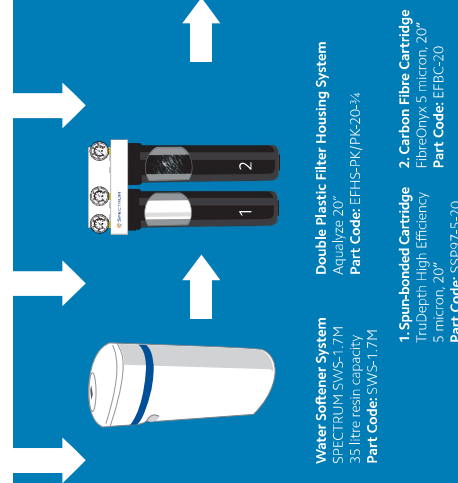
The Solution

- Remove hardness using ion exchange resin
- Remove particulate using depth filtration
- Remove organics and chlorine using a carbon block
- Purify the water to ionic level using a reverse osmosis system
- Disinfect the stored water with UV light
- Remove bacteria from air using an air vent filter
- Remove bacteria from re-circulated water



Filerder Recommends

- Volumetric, digital SPECTRUM SWS Cabinet softener system
- Housing 1: high efficiency SPECTRUM polypropylene depth filtration with large surface area
- Housing 2: Extended service life SPECTRUM FibreOxyx carbon fibre
- High specification SPECTRUM reverse osmosis membranes in the reverse osmosis system
- SPECTRUM absolute rated 0.01 micron PTFE air vent bacteria filtration on water storage tank and AER
- High dosage SABRE UV disinfection system
- Certified absolute bacteria filtration with SPECTRUM polyethersulfone layered pleated cartridge
- Repeatedly autoclavable SPECTRUM RinseCap 0.2 micron polyethersulfone membrane capsule final guard filter for rinse water
- To suit flow rates to 20 lpm feed to RO system





INFECTION CONTROL



Water delivered at point-of-use (POU) throughout the hospital should be safe for cleaning, washing and drinking as outlined in L8 and HTM 04-01. Bacteria, such as *Legionella* and *Pseudomonas*, can cause a serious threat to patient's health and if not properly controlled, can cause potentially lethal infections and diseases.

- POU bacteria removal ensures patient and staff safety
- Simple, fast installation and maintenance
- Chemical resistant
- Best available POU systems for flow, effectiveness, longevity and ease of use

INFECTION CONTROL: STERILISED

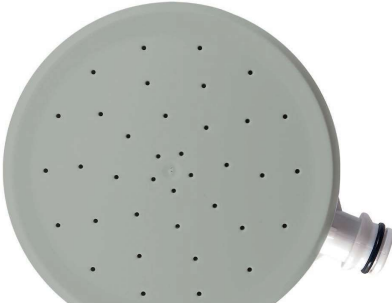
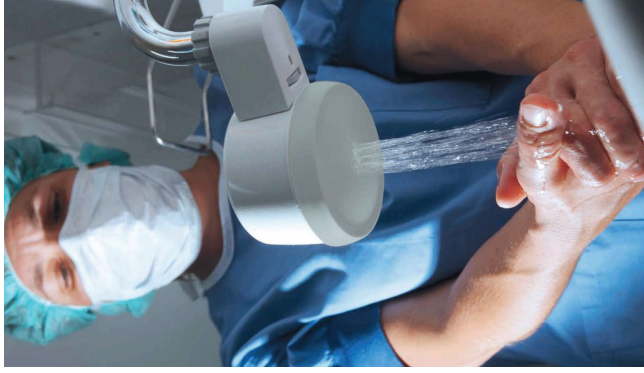
LEGIONELLA & BACTERIA

The Challenges

- Unauthorised removal of filters by patients and staff causing exposure to *Legionella*
- Protection of patients and staff from waterborne pathogens such as *Legionella*
- Sterile protection for high risk areas, such as haematology, oncology, burn units, intensive care units and neonatal
- Growth and transfer of bacteria, such as *Pseudomonas*, on filter surface from handling
- Air-locking of shower filters
- Reduced effect of disinfectant on bacteria at POU
- Compliance with L8 and HTM 04-01
- Requirements for extended service life to aid maintenance schedules with no compromise on validation

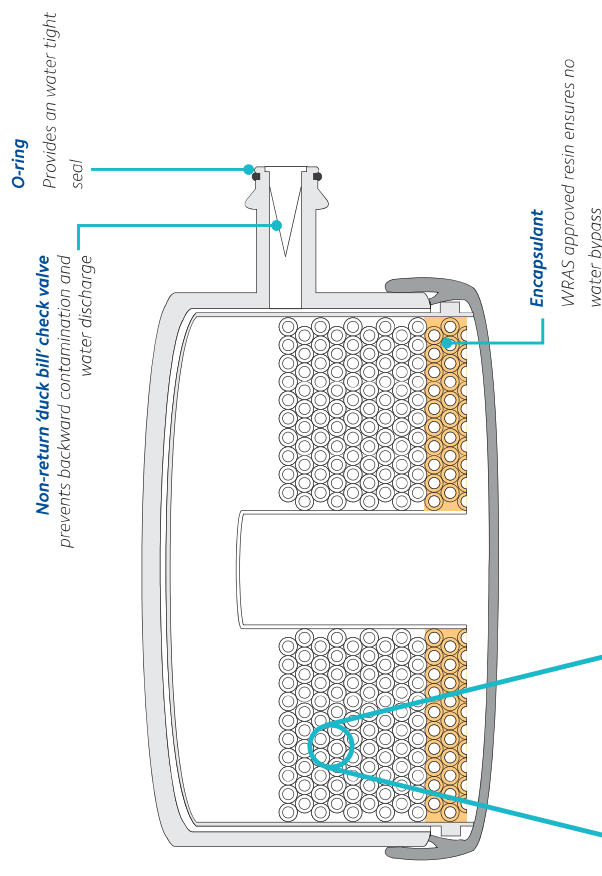
The Solution

- Pentair shower and tap filters protect from risk of waterborne infection; 92 days *Legionella*, 6 months *Pseudomonas*
- Reliable and easy protection at the last possible moment before patient and staff contact
- Pentair's unique design utilises a special key to facilitate the removal of the tap or shower cap (head) when replacement is required, ensuring only authorised personnel can carry out this procedure
- 0.2 micron absolute rated hollow fibre filtration technology retains bacteria, fungi and particulate
- The range is sterile packed using gamma radiation
- The filters suppress bacteria growth on the surface of the filter due to a bacteriostatic active ingredient Biomaster, added to the filter housing material
- Up to 50% less waste when compared with other solutions on the market

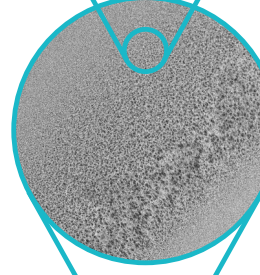


A Closer Look

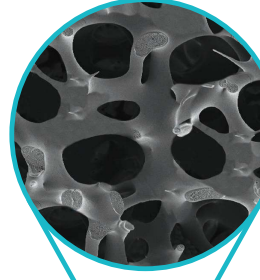
The cartridges in the Pentair tap and shower ranges contain hollow fibre microfiltration with billions of microscopic pores. The pores form an ultra-fine filter, which retains any bacteria or fungi present in the water resulting in clean and safe water for patients and staff.



Hollow Fibre Strands



Close up of a strand showing billions of microscopic pores



Bacteria are unable to bypass the membrane

INFECTION CONTROL: STERILISED

LEGIONELLA & BACTERIA

Technology Comparison Table

Feature	Pentair	Other Leading Manufacturers
Extended service life of 92 days for <i>Legionella</i> control	✓	✗
Log 6 <i>Pseudomonas</i> retention for 6 months	✓	✗
0.2 absolute micron rating	✓	✓
>log 7 reduction of bacteria	✓	✓
>log 4 reduction of fungi	✓	✓
CE Medical Class I (s) marked	✓	✓
Tracking and tracing label	✓	✓
Sterile Classification	✓	✓
Special key prevents unwanted removal and change outs	✓	✗
No air locking shower	✓	✗
Extensive surface area	✓	✗
Less waste, more environmentally friendly	✓	✗
High contaminant holding	✓	✗
Ergonomical design	✓	✗
Independently tested	✓	✓
Gamma radiated packaging	✓	✓



Pentair Shower & Tap Range

For further technical information, product validation and test results on the Pentair shower & tap range click here

Tap Adaptors

Using the best filter in the world would offer only limited success if any water bypassed the tap-to-filter adaptor. This connection is critical for healthcare taps, as a sub-standard adaptor will enable water bypass, encouraging bacteria growth in the area.

Fileder overcame this common issue by designing adaptors specifically to seal the filter to the wide variety of tap manufacturers' products and created a Medical Tap Filter system. The adaptor replaces the diffuser (supplied with each tap) and is made from durable 316L stainless steel, which can be autoclaved for sterility and re-used after the O-rings are replaced.



MTF-TA24-S/SJS
24mm male to 22mm



MTF-TA21.5-S/SJS
21.5mm male to 22mm



MTF-TA18-S/SJS
18mm male 22mm



MTF-TA16-S/SJS
16mm male to 22mm



MTF-TAU
Universal tap adaptor



MTF-TA1/4F
1/4" female to M22



MTF-TA1/4M
1/4" male to M22



MTF-FR
Flow regulator

Fileder Recommends

- Pentair medical water filters have been extensively tested in accordance with all the relevant microbiological test protocols both in independent laboratories as well as clinically in hospitals providing >log 7 reduction of bacteria and >log 4 reduction of fungi.
- Validated service life of 92 days, in the majority of cases this is much longer than the market standard. This is due to the extensive area of filtration media, giving higher contaminant holding capacity leading to a longer product life, lower pressure drops, higher flow rates and better flow patterns.
- No air-locking issues with shower filters when used at a lower level.
- Fittings available to suit most tap brands.
- Flow rate with restrictor of 6 lpm.



Sterile Tap Filter
0.2 micron
Part Code: MTFW-SLSS

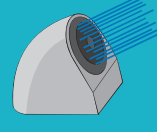


Sterile Shower Filter
0.2 micron
Part Code: MSF-SLSS

Sterile Shower Filter Replacement
0.2 micron
Part Code: MSF-SQRC



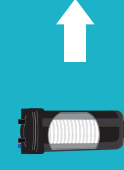
Anti Ligature Shower



Wide Mouth Bath Tap

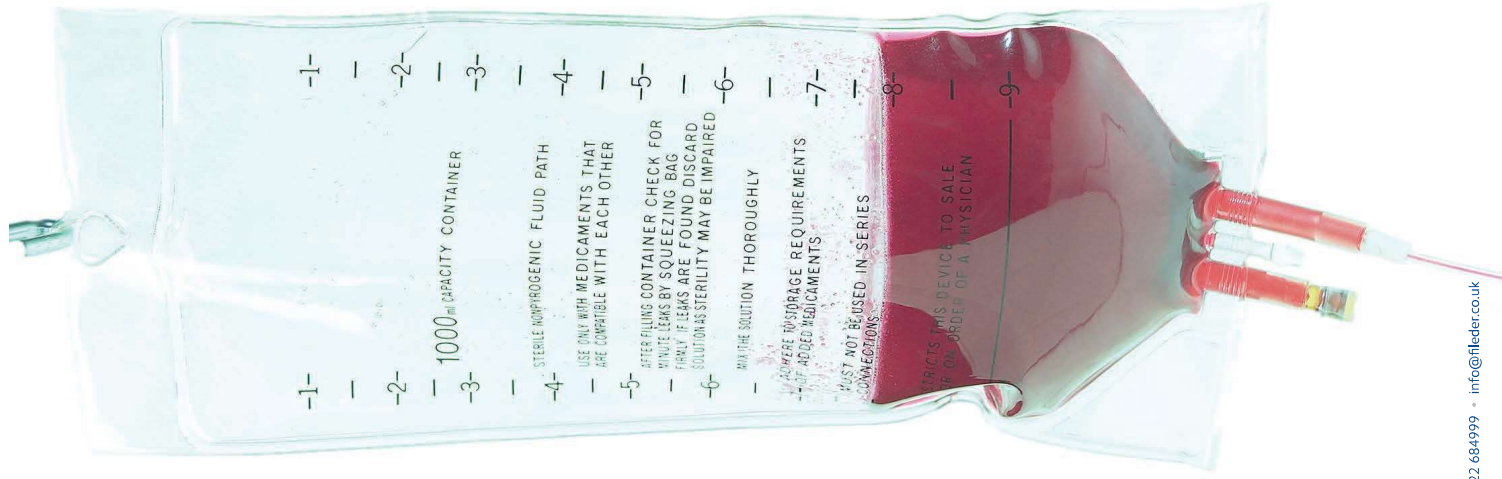
Baths and Anti Ligature Showers

Sometimes it is not appropriate to use Pentair medical filters at the point-of-use and, in these circumstances, other options are available. Fileder recommends a 10" housing with a 0.2 micron absolute pleated cartridge with secure fittings.



Plastic Filter Housing
Aqualyze 10" Regular
Part Code: EFH-PK-1-10

Pleated Cartridge
Premier Pleat 0.2 micron, 10"
Part Code: PPPE-0.2-10CGS



RENAL DIALYSIS



The purity of the water used in dialysis is critical in order to effectively and efficiently clean the blood of patients. Impurities, chlorine and chloramines in the water and system can cause health problems with the patient, subsequently this can require an increase in medicines used for treatment.

- Chlorine and chloramine free water
- Bacteria and endotoxin removal
- Reduction in drug usage

RENAL DIALYSIS: WARD

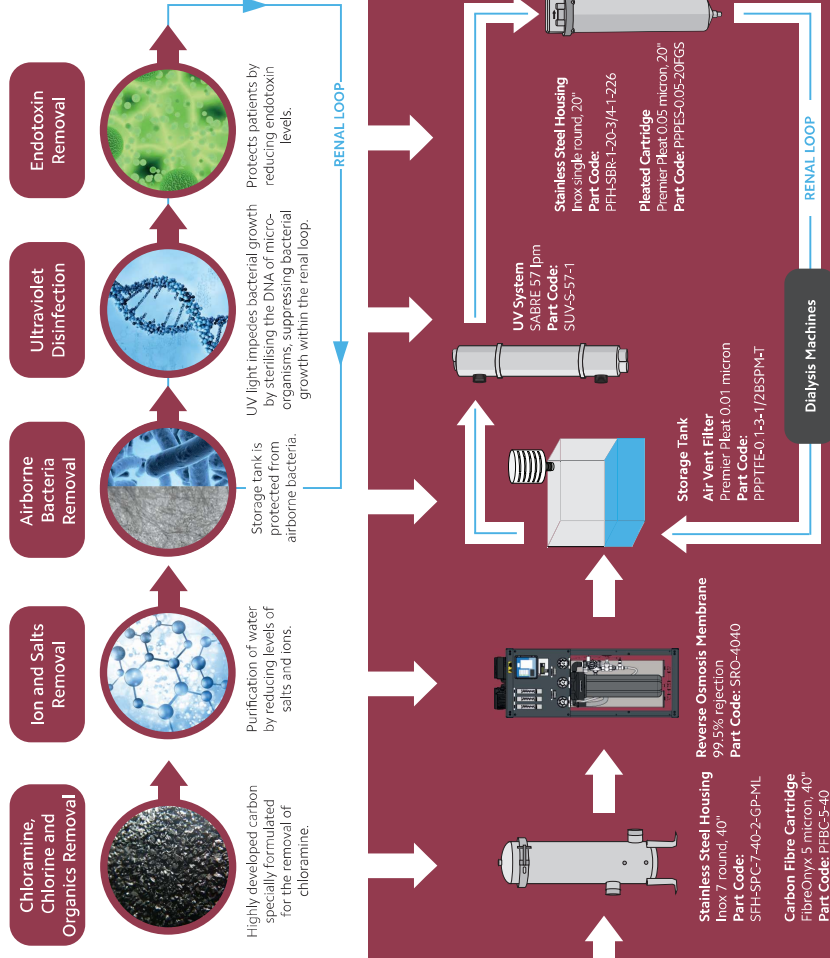
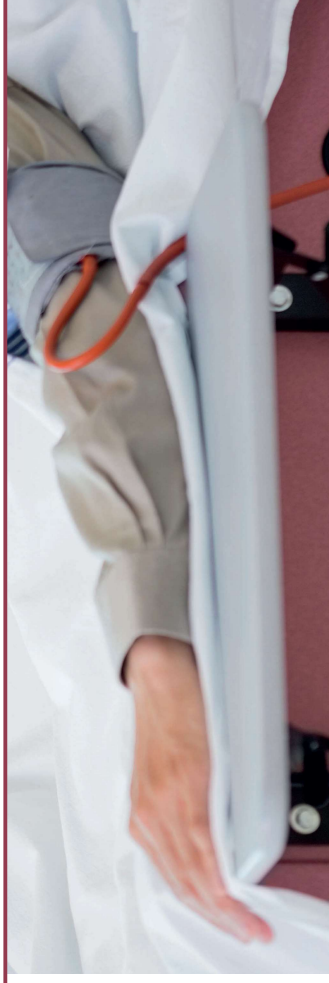


The Challenges

- Chlorine and chloramine levels can have a detrimental effect on patient's health, increasing drug usage, such as EPO
- Chlorine and chloramine attacks the membranes in the reverse osmosis system
- Minerals and ions in the water can affect the health of patients
- Bacteria and endotoxins in water can create health issues for patients
- Compliance with BS-ISO 73500 for water and BS-ISO 26722-2014 for equipment

The Solution

- Remove hardness using ion exchange resin process
- Remove particulate to protect carbon cartridges and reverse osmosis membranes
- Chlorine, chloramine and organics removal, using specially formulated carbon cartridges
- Use reverse osmosis system for water purification to reduce ionic levels
- Physically remove endotoxins from renal loop
- Guard against airborne bacteria in pure water storage tank
- Suppress bacteria growth in renal loop and pure water storage tank with UV disinfection system, followed by antibacterial spun-bonded filter to inhibit growth of any trapped bacteria



Fiderer Recommends

- Continuous supply SPECTRUM PWS Duplex softener to remove hardness from water
- SPECTRUM AMS cartridges developed to inhibit the growth of trapped bacteria and microbes within a filter
- SPECTRUM PBC range for long life, chlorine and chloramine removal along with reduced change-outs and EPO consumption
- High rejection SPECTRUM reverse osmosis membranes
- SPECTRUM absolute rated 0.01 micron PTFE air vent bacteria filtration on water storage tank
- High dosage SPECTRUM SABRE UV disinfection system
- Absolute 0.05 filtration with SPECTRUM polyethersulfone layered plated cartridges to reduce endotoxin levels
- To suit flow rates to 7m³/hr feed

RENAL DIALYSIS: HOME PATIENT

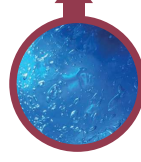


The Challenges

- Chlorine and chloramine in water can cause health issues for the patient
- Hardness and scale formation can cause issues with pipework, fittings and reverse osmosis membranes
- Bacteria in the water and pipework system can have a detrimental effect on a patient's health
- Low flow from reverse osmosis at low temperatures
- Compliance with BS-ISO 23500 and ART guidelines for haemodialysis

The Solution

- Remove hardness using ion exchange process to prevent scaling of reverse osmosis membrane
- Remove particulate to prevent fouling of reverse osmosis membrane
- Reduce chlorine and chloramine to protect reverse osmosis membrane from chemical attack
- Use reverse osmosis system for water purification to ionic levels
- Polish water to remove bacteria post reverse osmosis membrane



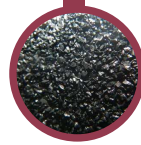
Feed water from storage tank via network of pipes.



Prevents scale build-up on reverse osmosis (RO) membranes, pipework and other equipment.



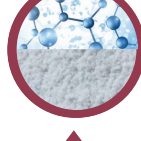
Removal of debris such as dirt and fines to protect carbon stages.



Chlorine reduction prevents RO membrane from chemical attack and organics removal to prevent fouling.



Highly developed carbon specially formulated for the removal of chloramine.



Purification of water by reducing levels of ions and salts.



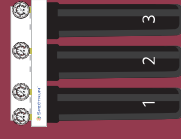
Dialysis machines often come with an ultrafiltration module in place.

Filerder Recommends

- SPECTRUM softener system for optimised salt usage
- Install a space-saving pre-assembled Aqualyze triple filter housing system which includes inlet/outlet gauges, bracket and housing spanner. For useful monitoring, easy installation and reduced labour costs
- Low pressure drop SPECTRUM polyester pleated cartridge
- Extended service life SPECTRUM FibreOnyx carbon fibre cartridge
- High chloramine and chlorine capacity SPECTRUM carbon block cartridge
- High performing SPECTRUM reverse osmosis renal membrane with consistent flow rates even at low temperature
- To suit flow rate of 4 lpm



Water Softener System
SPECTRUM SWS Simplex System
10 litre resin capacity
Part Code: SWS-0.5M



Plastic Filter Housing System
Aqualyze EFHS Triple
Part Code: EFHS-PK/PK/PK20-3/4



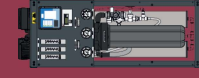
Pleat 20
Pleat 1 micron, 20"
Part Code: SPE-1-20"



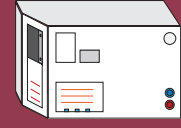
Carbon Fibre Cartridge
FibreOnyx 5 micron, 20"
Part Code: FBC-20



Carbon Fibre Cartridge
FibreOnyx 5 micron, 20"
Part Code: FBC-5-20



Reverse Osmosis Membrane
Part Code: SPO-4611



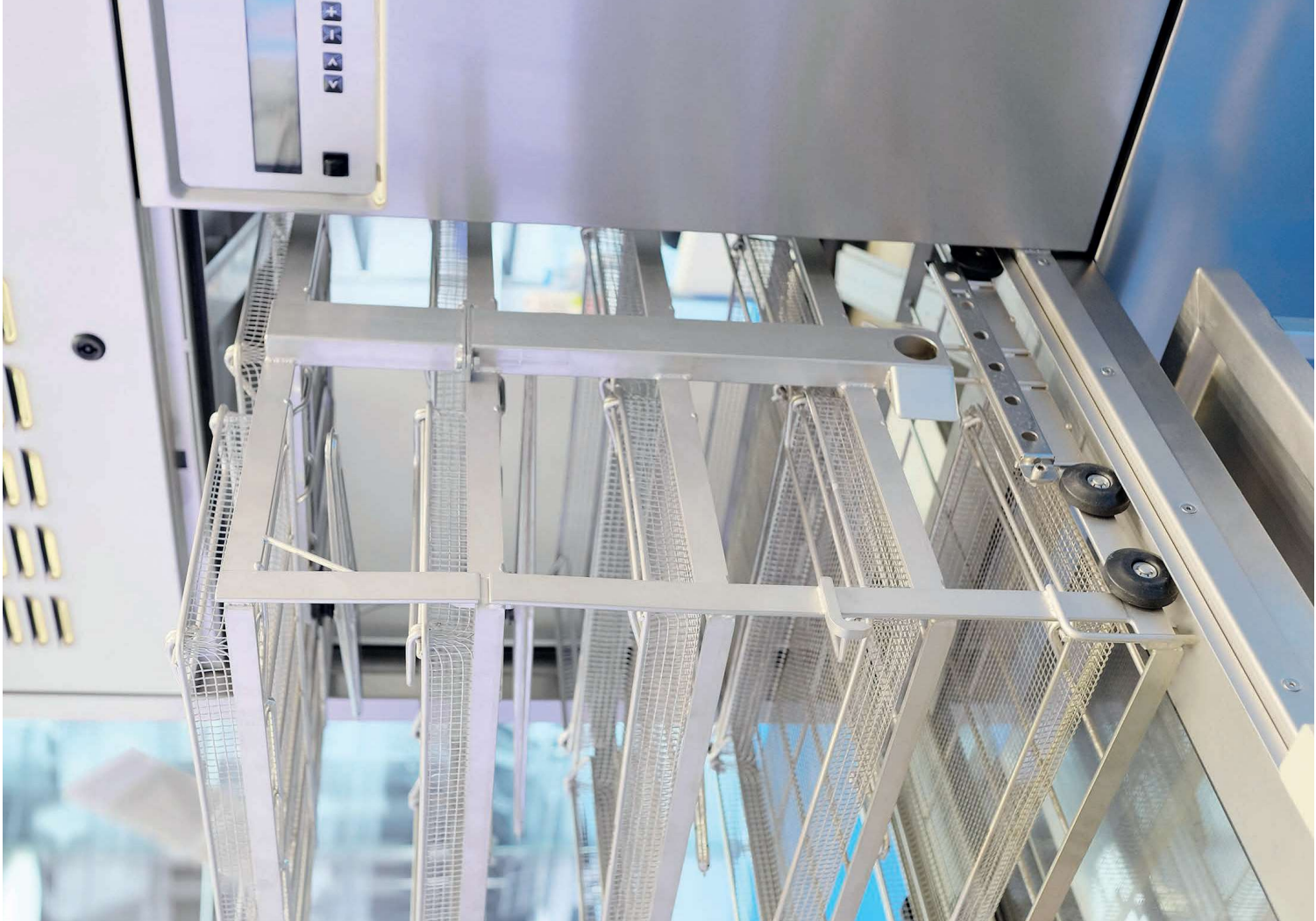
Renal Dialysis Machine + Ultrafiltration Module

STERILE SERVICES



One of the most important areas for water quality in a hospital. Water is used to clean instruments and critical components of systems used during operations and procedures on patients. Water for the water disinfectors should be softened. Water used in the production of clean steam or treated steam for the autoclaves, must be of very high purity.

- Bacteria removal avoids contamination of instruments and autoclaves
- Softened water prevents scaling of equipment and instruments
- Clean autoclaves reduces maintenance





The Challenges

- Hardness in water causes scale build-up on pipework and components
- Bacteria in water and air creates contamination of instruments and system
- Compliance with HTM01-01
- Efficiency of steam production systems



The Solution

- Remove hardness to prevent the reverse osmosis membrane from scaling
- Remove particulate which can cover the membrane surface
- Remove organics and chlorine which can contaminate and attack the reverse osmosis membrane
- Polish water to ionic levels using reverse osmosis membrane
- Guard against bacteria presence in water
- Prevent airborne bacteria from contaminating the water in the storage tank



Hardness Removal

Prevents scale build-up on reverse osmosis membranes, pipework and other equipment.



Particle Removal

Removal of debris such as dirt and fines to prevent premature blinding of RO membranes.



Chlorine and Organics Removal

Chlorine reduction prevents RO membrane from chemical attack and organics removal to prevent fouling.



Ion and Salt Reduction

Purification of water by reducing the levels of ions and salts.



Bacteria Removal

Bacteria removal to log 7, ensuring bacteria-free water is fed to storage tank.



Airborne Bacteria Removal

Removal of airborne bacteria to prevent contamination of stored water.

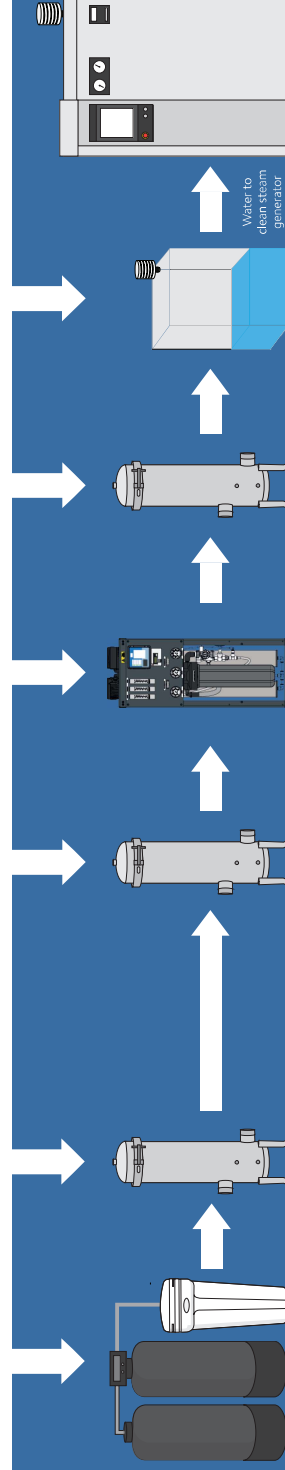


Airborne Bacteria Removal

Removal of airborne bacteria from air used in autoclave used in autoclave vacuum process.

Filerder Recommends

- Continuous supply SPECTRUM PWS duplex softener to remove hardness from water
- High efficiency high dirt holding SPECTRUM polypropylene spun cartridges in a durable 316 stainless steel housing
- Extended service life SPECTRUM carbon cartridges in a durable 316 stainless steel housing
- High rejection SPECTRUM reverse osmosis membrane
- Certified absolute bacteria filtration with SPECTRUM polyethersulfone layered pleated cartridge in durable 316 stainless steel housing
- SPECTRUM absolute 0.01 micron rated PTFE air vent bacteria filtration on water storage tank and autoclave vacuum chamber
- To suit flow rates to 7m³/hr pre and 6m³/hr post reverse osmosis



Water Softener System
SPECTRUM PWS Duplex
250 litre resin capacity
Part Code: PWS-12.5M

Stainless Steel Housing
Inox 5 round, 20"
Part Code: SH-SPC5-20-3-GH-ML
Spin-Bonded Cartridge
InDepth High Efficiency 3 micron, 20"
Part Code: SSP97-5-20

Stainless Steel Housing
Inox 7 round, 40"
Part Code: SH-SPC7-40-3-GH-ML
Modified Carbon Block
SPECTRUM 5 micron, 40"
Part Code: SCB-5-40

Reverse Osmosis Membrane
Inox 5 round, 20"
Part Code: ERO-4040

Stainless Steel Housing
Inox 5 round, 20"
Part Code: SH-SPC5-20-3-GH-ML
Pleated Cartridge
Premier Pleat 0.2 micron, 20"
Part Code: PPPE-0.2-20EHS

Storage Tank
Air Vent Filter
Premier Pleat 0.01 micron
Part Code: PPTFE-0.1-3-1/2BSPM-T

Autoclave



DENTAL



Water used by patients for mouth rinsing should be bacteria free. Bench-top sterilisers are fed with water which must be free of impurities, as this can affect the instruments and cause scale build-up on expensive equipment. Water must also be bacteria free to prevent cross contamination of instruments. This area is considered critical as it falls under the guidance given in HTM 01-05.

- Reduced bench top steriliser issues
- Removal of bacteria introduced to patient
- Simple and effective maintenance



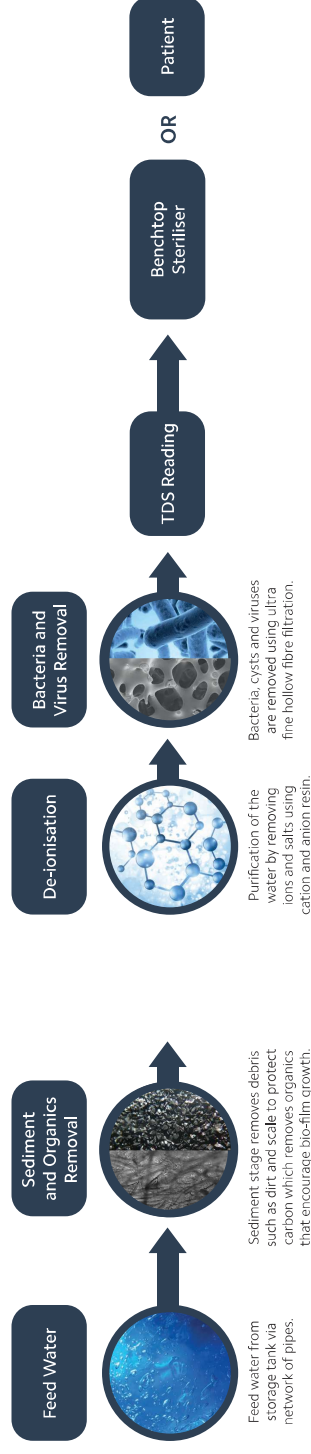
The Challenges

- Mineral deposits in tank, pipework and steriliser
- Reverse osmosis systems are commonly used to feed the sterilisers. These systems create waste water, requiring regular maintenance and cleaning
- Steriliser alarming and out-of-service due to poor quality water
- Potential source of *Legionella* and bacteria in aerosol water used by patients
- Compliance with HTM 01-05



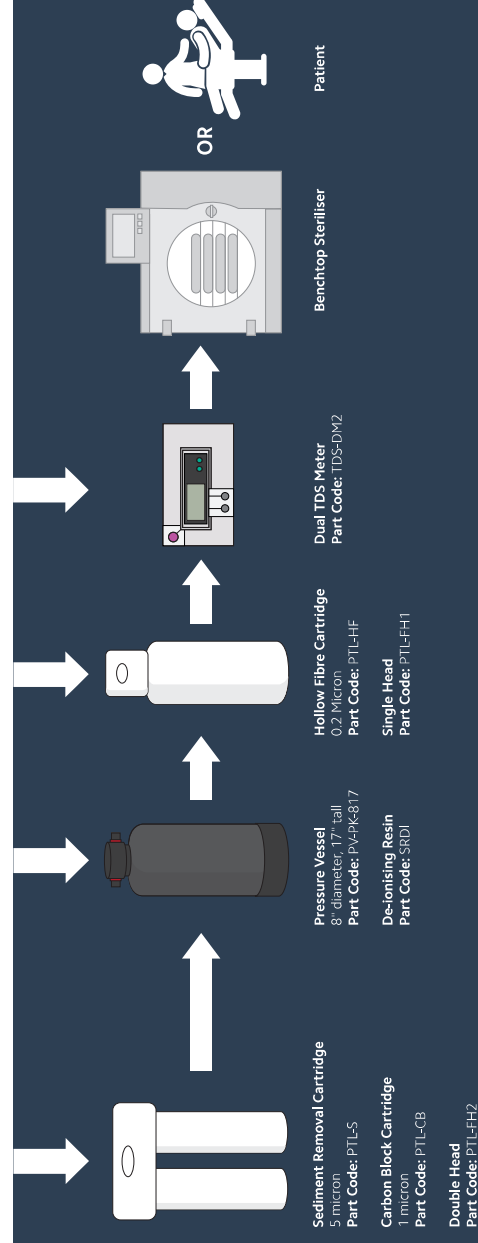
The Solution

- Remove particulate to protect the carbon block
- Remove organics to protect the DI resin and hollow fibre cartridge
- Remove ions to prevent mineral build-up on the steriliser
- Remove bacteria to protect the steriliser, staff and patients



Filerder Recommends

- Space saving SPECTRUM double Twist-Lock head to secure various cartridge models
- High dirt holding encapsulated SPECTRUM polypropylene depth cartridge to remove sediment
- High capacity SPECTRUM carbon block cartridge to remove organics
- Charged mix of SPECTRUM anionic and cationic resins housed in SPECTRUM polypropylene vessel
- SPECTRUM absolute rated 0.2 micron high capacity bacteria removal hollow fibre filtration technology with Twist-Lock change out
- Waterproof meter device from HM Digital to measure TDS of incoming and pure water
- To suit flow rates to 4 lpm





FACILITIES & SERVICES



Facilities and services make up a large part of a hospital and require filtration equipment to ensure that they function as expected. Such facilities include: kitchens, air handling units, laundry and boilers.

- Efficient boiler and HVAC systems save money
- Scale-free ovens reduce maintenance and improves food quality
- Sterile clothing reduces infections

BOILER FEED



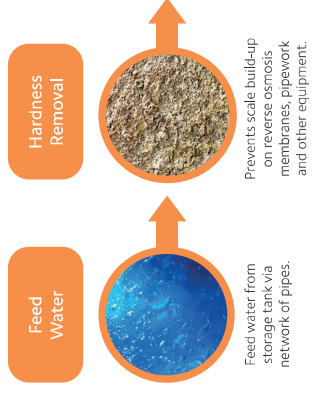
The Challenges

- A high number of 'blow downs' waste heated water and increase running costs
- Chemical usage is high and costly
- Chemical storage requires management of REACH regulations
- Boiler maintenance and cleaning to remove scale build-up
- Compliance with BS 2486 : 1997



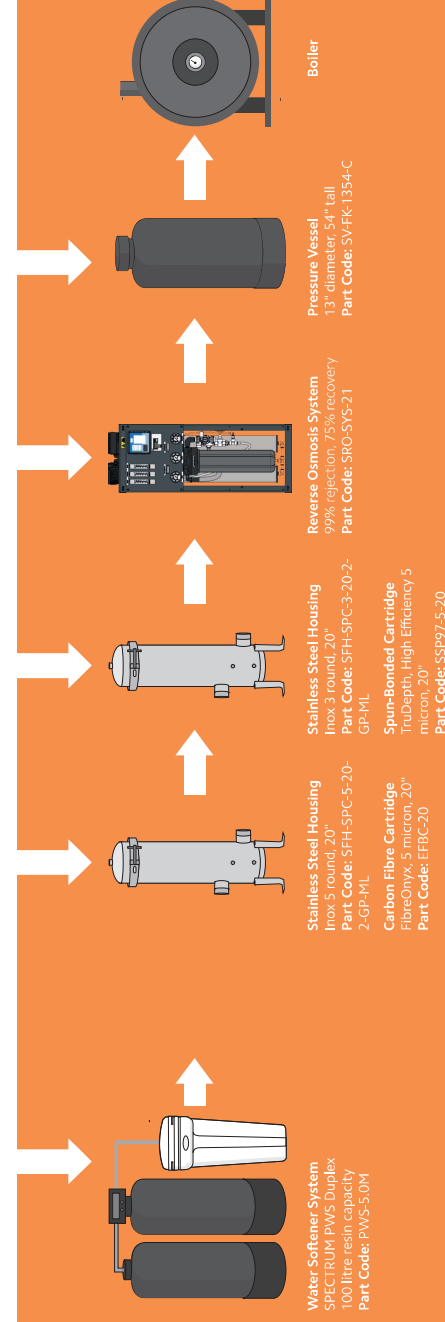
The Solution

- Soften the water to prevent scale build-up on reverse osmosis membrane and pipework
- Remove organics to prevent fouling of the reverse osmosis membrane
- Remove particulate to protect the reverse osmosis membrane
- Remove ions and bacteria using a reverse osmosis system
- Adjust the pH of the pure water to protect the boiler



Fileder Recommends

- Continuous supply SPECTRUM PWS Duplex softener to remove hardness from water
- Extended service life SPECTRUM FibreOnyx carbon fibre cartridges in a durable 316 stainless steel housing are the perfect solution when high volumes of water require chlorine treatment
- High efficiency SPECTRUM polypropylene depth filtration with large surface area
- High production rate SPECTRUM reverse osmosis system
- To suit flow rate to 2m³/hr



Heating Ventilation & Air Conditioning

(HVAC)



The Challenges

- Mineral build-up in pipework
- Scale deposits on nozzles, causing damage and blockages
- Mineral build-up on heating elements
- Bacteria in misting systems e.g. *Legionella*

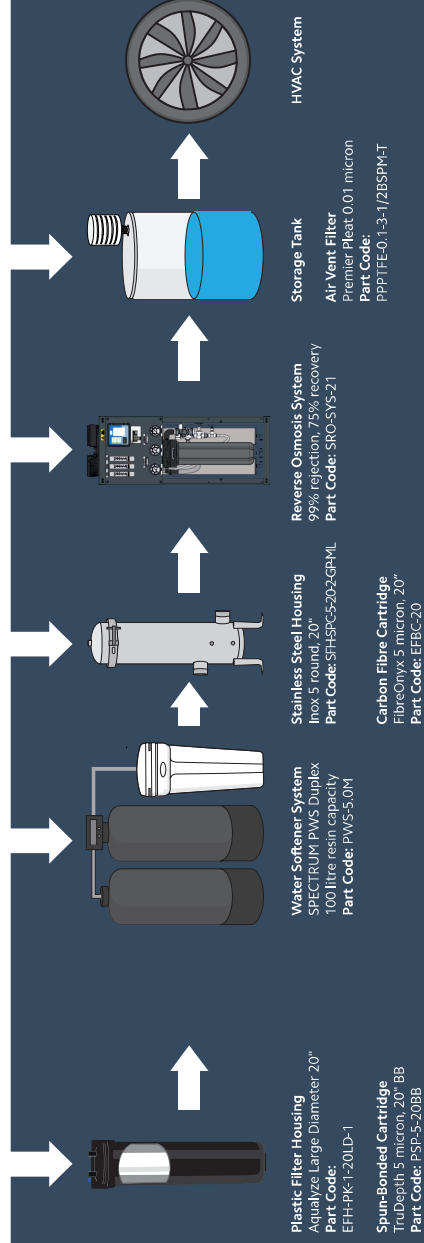
The Solution

- Remove particulate to protect the softening resin, reverse osmosis membrane and pipework
- Soften the water to prevent scale build-up on reverse osmosis membrane and pipework
- Remove organics to prevent contamination of the membrane
- Remove ions and bacteria using a reverse osmosis system
- Prevent airborne bacteria contaminating the pure water in a storage tank



Fieder Recommends

- High dirt holding, large diameter SPECTRUM polypropylene depth cartridge
- Continuous supply SPECTRUM PWS Duplex softener to remove hardness from water
- Extended service life SPECTRUM FibreOnyx carbon fibre cartridges in a durable 316 stainless steel housing are the perfect solution when high volumes of water require chlorine treatment and organic removal for membrane protection
- High output, durable, simple to maintain SPECTRUM reverse osmosis system
- SPECTRUM absolute 0.01 micron PTFE air vent filters on storage tank
- To suit flow rate to 2m³/hr



KITCHEN

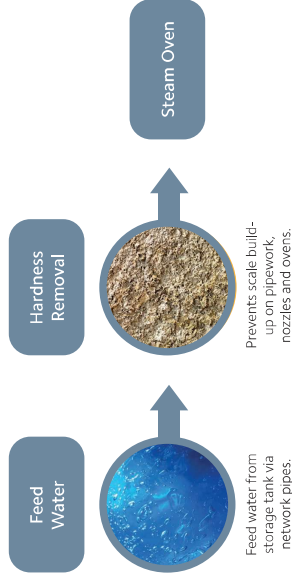


The Challenges

- Scale build-up on nozzles, causing blockages and poor spray pattern
- Mineral build-up on pipework, heating rods and oven chambers create higher energy and maintenance costs

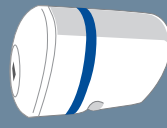
The Solution

- Remove the scale forming minerals of calcium and magnesium by using commercial water softening system

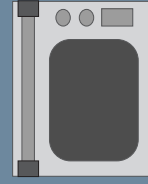


Filerder Recommends

- Compact SPECTRUM self-regenerating water softening system
- To suit flow rate to 13 lpm



Water Softener System
SPECTRUM SWS Simplex
10 litre resin capacity
Part Code: SWS-0.5M



Steam Oven



LAUNDRY

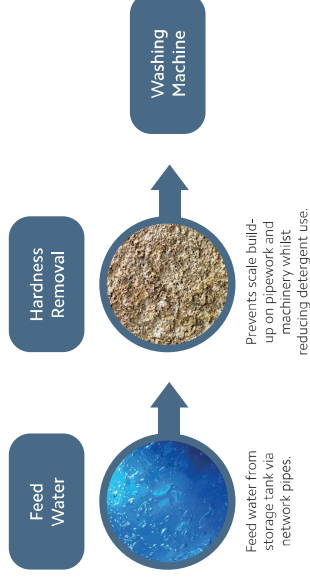


The Challenges

- High detergent usage and cost
- Scale build-up in machinery causes breakdowns and increased maintenance cost
- Scale build-up in pipework increases energy usage to maintain flow
- Soap scum build-up on machines reduces cleaning results

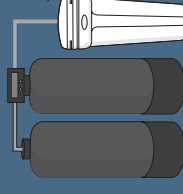
The Solution

- Remove the scale forming minerals of calcium and magnesium by using commercial water softening system
- Removal of these ions prevents formation of scale and reduces levels of detergent required



Filerder Recommends

- Continuous supply SPECTRUM PWS Duplex softener to remove hardness from water
- Volumetric control valve assists water saving and salt usage by using full capacity of one tank before switching to the other
- To suit flow rates to 7m³/hr



Water Softener System
SPECTRUM PWS Duplex
250 litre resin capacity
Part Code: PWS-12.5M



Washing Machine



DRINKING: TAP

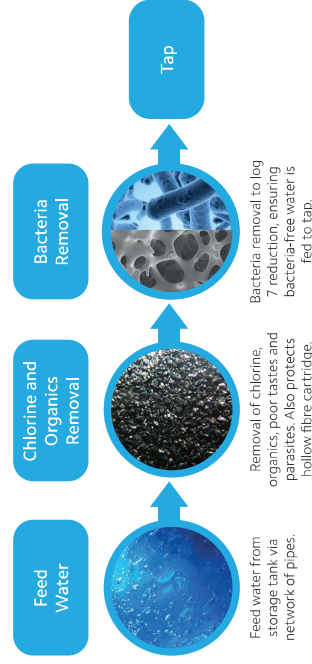


The Challenges

- Bacteria and parasites present in water used for drinking
- Chlorine taste and odour
- Contaminants, such as organics and sediment in water, encourage bio-film and bacteria growth
- Compliance with BS EN 806-2:2005 and HTM 04-01

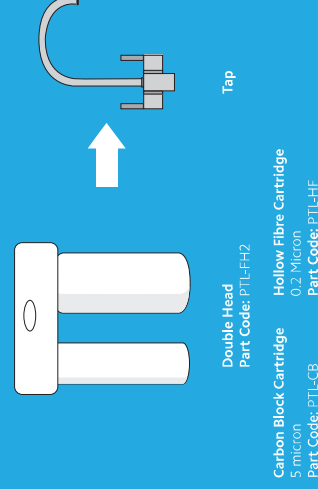
The Solution

- Remove chlorine, organics, poor tastes and parasites using carbon block cartridge
- Remove bacteria with a hollow fibre cartridge to protect patients and staff



Filerder Recommends

- SPECTRUM single Twist-Lock head to secure cartridge
- SPECTRUM Twist-lock carbon block cartridge for great tasting water
- SPECTRUM hollow fibre Twist-Lock cartridge for bacteria and particulate removal to 0.2 micron
- To suit flow rates to 4 lpm



DRINKING: WATER COOLERS

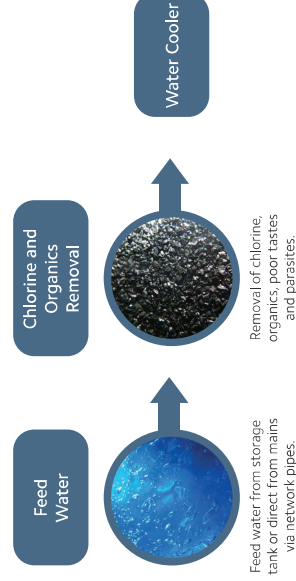


The Challenges

- Chlorine taste and odour
- *Cryptosporidium* and *Giardia* causing sickness
- Contaminants, such as organics and sediment in water, encourage bio-film and bacterial growth

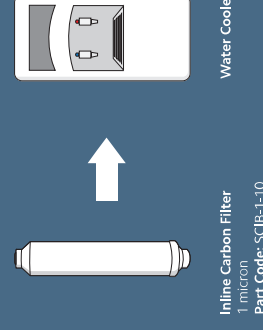
The Solution

- Remove chlorine, organics, poor tastes and parasites using carbon block cartridge



Filerder Recommends

- High capacity WRAS approved SPECTRUM inline carbon block for chlorine, organics, poor tastes and parasite removal
- To suit flow rates to 4 lpm



CERTIFICATION

Fileder carry reputable branded, high quality products, many of which carry accreditations.



NSF independently tests and certifies products for the food, water, health science, sustainability and consumer product sectors to various standards. The NSF mark is your assurance that the product has been tested by one of the most respected independent certification organisations in existence today.

Fileder can supply product certified to two main approvals for "drinking water treatment units"

NSF STD 42 - Aesthetic effects - designed to minimize non-health related contaminants such as chlorine, taste and odour, and particulates.

NSF STD 53 - Health effects - expected to reduce health related contaminants that may be present in public or private drinking water including cysts.



The primary focus of WRAS is to protect public health by preventing contamination of public water supplies and encouraging the efficient use of water.

WRAS approval is given to both complete 'Products' (Inline Cartridges, Filter Housings etc) and non-metallic 'Materials' (Polypropylene, Polyethersulfone etc) to demonstrate that an item or material has undergone testing for their effects on water quality and complies with the high standards set out by water regulations promulgated in 1999 in the United Kingdom.

BS6920

BS6920 is a set of stringent tests that are used to confirm the suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water prior to WRAS approval.



The Drinking Water Inspectorate (DWI) Regulation 31 ensures that water suppliers only use products and substances to provide water quality that is safe and acceptable to consumers.



WQA is a fully accredited independent and not for profit association that certifies water treatment products to the same ANSI standards as NSF.



The Food and Drug Administration (FDA) is a department within the US government specialising in the safety and security of most of food and water supply. Materials that are approved by the FDA are suitable to come in to contact with food and water products intended for human consumption.



The CE marking is the symbol applied to products to indicate that they conform to the relevant EU directives regarding health and safety or environmental protection.

By affixing the CE marking on a product, a manufacturer is declaring, at its sole responsibility, conformity with all of the legal requirements to achieve CE marking which allows free movement and sale of the product throughout the European Economic Area.

Directives under the CE umbrella include the Pressure Equipment Directive (PED), Medical Devices Directive and also the Low Voltage Directive.



PED sets out the standards for the design and fabrication of pressure equipment in the EU including meeting safety requirements and manufactured to sound engineering practice.

The following ranges of vessels supplied by Fileder Filter Systems Ltd are suitable at their rated parameters for the filtration of Group 2 liquids as defined within the European Pressure Equipment Directive 2014/68/EU.

They comply with the requirements of article 4, paragraph 4, of the directive in that they are manufactured using Sound Engineering Practice.

SPECTRUM Aqualize Polypropylene Housings
SPECTRUM Inox Stainless Steel Filter Housings
SPECTRUM Inox Stainless Steel Bag Housings
Pentair Polypropylene Bag Housings



REACH is a European Union regulation concerning the Registration, Evaluation, Authorisation and restriction of Chemicals. The aims of the regulation include:

- To provide a high level of protection of human health and the environment from the use of chemicals.
- To make the people who place chemicals on the market responsible for understanding and managing the risks associated with their use.
- To allow the free movement of substances on the EU market.



Restriction of Hazardous Substances (RoHS) is a European directive intended to restrict the use of six hazardous materials, which can be used in the manufacture of various types of electronic and electrical equipment:

- 1) Lead (pb) – 0.1%
- 2) Mercury (Hg) – 0.1%
- 3) Cadmium (Cd) – 0.01%
- 4) Hexavalent chromium (Cr6+) – 0.1%
- 5) Polybrominated biphenyls (PBB) – 0.1%
- 6) Polybrominated diphenylether (PBDE) – 0.1%

To ensure Fileder can meet the NHS Conditions of Contract conditions with regards to Public & Product Liability Insurance, our policy has been specifically increased for this purpose to the value of £10 million. Fileder has achieved Cyber Essential Certification to provide the NHS assurance with regards to our fundamental technical security controls within our organisation to help defend against the most common cyber threats as well as demonstrating our commitment to cyber security.

Recommendations: Fileder has made recommendations throughout this brochure based upon the most common set ups seen within hospitals. These recommendations are intended for guidance only and all systems should be cross-checked with the individual facility's operating parameters, output requirements and current installation.

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Product Brochures



	Pleated Filtration
	Depth Filtration
	Stainless Steel Cartridges
	High Flow Filtration
	Water Treatment - Carbon & Media Cartridges
	Filter Housings
	Bag Filtration
	Pure Water Membranes
	Pressure Vessels & Media
	Water Softening & Conditioning
	UV Systems
	Food Service
	Filtration & Water Treatment Rental
	Installation & Servicing

Application Brochures



	Solutions for Surface Finishing
	Solutions for Hospitals
	Solutions for Beverage Production
	Solutions for the Coatings Industry
	Solutions for Bacteria and Parasites
	Solutions for Cosmetics and Toiletries
	Filtration for Municipal Water with DWI
	Solutions for Cryptosporidium Protection
	Solutions for Chemical Production

Contact us

Filerder Filter Systems Ltd

20/20 Business Park
Maidstone, Kent
ME16 0LS

Phone: 01622 691886

Fax: 01622 621932

Email: info@filerder.co.uk

Website: www.filerder.co.uk

