

Frequently Asked Questions and Answers

Questions

1. When does a ceramic filter element need cleaning?
2. How do I clean a candle?
3. My filter candle blocks up too regularly, what can I do about it?
4. When does a ceramic filter element need replacing?
5. I don't have a flow meter to gauge the amount of water that my filter has treated. How can I estimate how much water has passed through the filter?
6. Do I need to sterilise the candle after cleaning?

Answers

Once the flow out of the filter becomes noticeably less than normal

Use a scouring pad (similar to 3M 'Scotchbrite'). Ensure that the end of the plastic mount does not come into contact with unfiltered water and dirty hands. Rubber gloves are recommended to be used during cleaning and **NEVER** use soap or detergents! Full detailed instructions on how to clean your ceramic candle evenly, with clear diagrams can be found on page 28

In some water conditions, there is so much particulate or turbidity in the supply water that the candle becomes blocked much more quickly than in normal conditions. In these circumstances, it is beneficial to use a pre-filter upstream of the ceramic candle; - this prevents the candle from becoming blocked too quickly, minimises cleaning and so extends the life of the ceramic filter.

Ceramic Only

Once cleaning fails to restore the flow. Although, each individual candle does have a recommended capacity when used in normal conditions. The capacity for a specific element is quoted in within the section dedicated to each filter element's construction and performance.

Combination Filter Elements

In dual function systems cleaning the ceramic will not extend the life of the internal material. For example: the 'life' of the extruded carbon block in the Supercarb filter elements is determined by the concentrations of chlorine and/or volatile organic compounds in the supply water. In most cases, the filter element should be replaced after 6 - 12 months of daily use or 1000 US gallons. The particulate and turbidity concentration in the supply water governs the life of the ceramic, which may exceed or not achieve the capacity of the carbon insert. Whichever point is reached first governs when the filter element requires replacing – the six months usage or the ceramic becoming blocked to the extent where cleaning does not restore the flow.

On average a family of four uses approximately 8 litres of water per day for cooking and drinking, so based on 10 litres/day for four people the life of your filter can be estimated in time rather than capacity.

Only the **Standard** candle needs to be sterilised.

After you have cleaned the Standard candle, place it in a container of water. Bring the water to a boil for 20 minutes. Allow it to cool before replacing the candle in the filter housing.

All the other filter elements are manufactured with either the '**Sterasyll**' or '**Carbosyll**' ceramic shells, which contain trace amounts of silver to prevent microbiological growth. These elements should **NOT** be sterilised after cleaning. In the case of combination filter elements, boiling will damage the internal components of the element.

Frequently Asked Questions and Answers cont'd

Questions

Answers

7. How do I keep my filter housing clean?
- The filter housing is best cleaned by unscrewing the body from the head and wiping the surface and the inside of the body with a soft cloth dampened with warm water. **IMPORTANT – DO NOT ATTEMPT TO CLEAN THE FILTER HEAD, WHICH COULD CAUSE CONTAMINATION OF THE FILTERED WATER.**
8. What happens if I leave the filter unused for a period of time?
- If normal use of the filter is interrupted by holidays or vacations, growth of harmless heterotrophic bacteria may result in a 'flat' or 'stale' taste for a period of time when use of the filter resumes. This is especially true for the filter elements that contain activated carbon such as the Super Sterasyl (contains granular activated carbon), the Supercarb and Ultracarb (both contain an extruded activated carbon core). Flushing the filter system for several minutes after any prolonged period of inactivity should eliminate the problem.
9. What is the difference between temporary and permanent hardness in water?
- Hardness caused by the presence of positively charged metal ions and total hardness is measured as the equivalent of milligrams per litre of calcium carbonate. There are two forms of hardness, **temporary hardness** which only contains metal carbonates and bicarbonates, the most typical being calcium carbonate. Temporary hardness is precipitated from water when heated and is responsible for the furring of heating elements and metal pipes. Permanent hardness consists of non-carbonate based metal salts, and does not precipitate out on heating.
10. Will my Doulton or British Berkefeld filter element remove hardness?
- Unfortunately filtration does not remove hardness from water so Doulton or British Berkefeld filter elements will not affect the hardness in drinking water. Hardness can be removed by water softening, deionisation or magnetic and electrical conditioning devices.
11. Will hardness affect the performance of an Ultracarb filter element?
- The ATS media used in our Ultracarb filters will adsorb lead, even in the presence of calcium and magnesium ions. This is proven in the NSF certification testing. One of the test protocols for metal(s) reduction calls for testing at high pH, high TDS conditions to simulate use in hard waters. Filter elements containing ATS have to pass this part of the test protocol before they can receive NSF certification.
12. Will my Doulton or British Berkefeld filter element remove Aluminium?
- The Doulton and British Berkefeld range of ceramic water filters are only suitable for the removal of aluminium in particulate form; they are not proven to be suitable for treating dissolved aluminium. To treat water containing soluble aluminium, ion exchange resin, distillation or reverse osmosis must be used.
13. Will my Doulton or British Berkefeld filter element remove Arsenic?
- No, Arsenic is likely to be in a dissolved state, to remove arsenic passage through activated alumina is the best method.

Frequently Asked Questions and Answers cont'd

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14. Will my Doulton or British Berkefeld filter element remove all types of bacteria?

Answers

No, there are so many different species of bacteria of different shape, size and growth characteristics, which preclude the ceramic filter from being effective against all of them. The pathogenic bacteria that FICL claim to be effective against have been qualified by test data from independent test laboratories or are extrapolated from test data, of similar microorganisms (please seek advice on permitted extrapolated claims).

Also although the ceramic will filter all types of heterotrophic bacteria to some extent, it should be noted that any harmless bacteria of this type passing through the ceramic may multiply downstream of the filter. Since these heterotrophic bacteria are harmless, normally there are no problems and some heterotrophic bacteria are reported to be beneficial (see the section on Heterotrophic Bacteria pg 19). However, if normal use of the filter is interrupted by holidays or vacations, growth of these bacteria may result in a 'flat' or 'stale' taste for a period of time when use of the filter resumes. This is especially true for the filter elements that contain activated carbon such as the Super Sterasyl (contains granular activated carbon), the Supercarb and Ultracarb (both contain an extruded activated carbon core). Any system containing activated carbon, which will reduce residual levels of free chlorine, will result in an increase in plate counts over a short period of time until a constant state of equilibrium is established. The UK Drinking Water Inspectorate water regulations call for the water to be regularly monitored for **consistency as used**, therefore since an equilibrium point is reached in the filtered water, the filters comply with the regulations. The presence of this type heterotrophic bacteria does not constitute a health problem since the organisms present will be harmless and a suitable level of consistency would be established. Flushing the filter system for several minutes after any prolonged period of inactivity should eliminate the problem.

15. Will my Doulton or British Berkefeld filter element remove Chloramine?

Chloramine may be removed by passing through a bed of activated carbon, but requires much greater contact time with the carbon than chlorine, so a slow flow rate through the carbon must be ensured. Unfortunately although the Doulton or British Berkefeld, Supersterasyl, Carbosyl, Supercarb and Ultracarb filter elements contain activated carbon, they may reduce levels but will not remove chloramine because there is insufficient contact time with the carbon.

16. Will my Doulton or British Berkefeld remove diesel, petroleum or MTBE?

The ceramic part of our filter elements will not take out any of these organic materials. The activated carbon in the Supercarb and Ultracarb filter elements will have some effect, however, to remove these type of materials requires much greater quantities of activated carbon and much longer contact time than our filters can provide.

17. Will my Doulton or British Berkefeld filter element remove Fluoride?

No, Fluoride salts are soluble in water, to remove dissolved fluoride, passage through activated alumina is the best method.

18. Will my Doulton or British Berkefeld filter element remove Iron?

The Doulton and British Berkefeld range of ceramic water filters are only suitable for the removal of iron in particulate form; they are not proven as suitable for treating dissolved iron. To treat water containing soluble iron, the iron must be oxidised to induce precipitation prior to filtration. Alternatively distillation or reverse osmosis can be used.

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19. Will my Doulton or British Berkefeld filter element remove *Legionella*?

20. Will my Doulton or British Berkefeld filter element remove Manganese?

21. Will my Doulton or British Berkefeld filter element remove Nitrates?

22. Will my Doulton or British Berkefeld filter element remove Oestrogen and Synthetic Oestrogen?

23. Will my Doulton or British Berkefeld filter element remove *Pseudomonas aeruginosa*?

24. Why does the pH of my drinking water increase when I use my ceramic filter?

25. What level of bacterial contamination can the ceramic cope with before I need to use something else?

Answers

Since *Legionella* has a similar morphology to *E-coli* our ceramic filter elements should provide similar protection against *Legionella*. However, *Legionella* is capable of slow regrowth downstream of the filter, so if just one organism passes through the ceramic it could eventually colonise the water delivery system. Therefore it is important to regularly disinfect downstream of the filter or fit a UV light just after the filter.

No, to remove Manganese, oxidation treatment and filtration can be done, or for low levels of contamination, Green sand or Inversand can be used.

Unfortunately the ceramic filter elements will not remove nitrates. In the home the only effective method that can be used to remove nitrate is ion exchange media.

There has been a limited amount of research into Oestrogen and Synthetic Oestrogen, and so we do not have quantifiable test data on the effectiveness of our products in removing it. Due to the chemical properties of Oestrogen, we believe that activated carbon would be effective in reducing it. However until better test methodology is available, we are unable to make a claim.

Pseudomonas aeruginosa is a potential coloniser of water system networks and is similar in size to *E-coli*. FICL candles should therefore, in theory, show a similar reduction efficiency for *Pseudomonas aeruginosa* as *E-coli*⁴. However, since this organism is rapid growing and may recover quickly. Without physically testing FICL ceramic filters with this type of organism, it is impossible to predict a performance claim. FICL are not prepared to attempt a prediction of performance, since the filters do not provide 100% barrier to *E-coli*, a limited number of cells may pass through the filter which, unlike *E-coli* may form colonies down stream of the filter. It would be more suitable to combine filtration with a disinfection stage to ensure removal of *Pseudomonas aeruginosa*.

The slight increase in the pH of water passed through the ceramic filters is due to the presence of the mineral Wollastonite in the ceramic filter. Wollastonite is slightly soluble and alkaline, so may partly dissolve in the water as it passes through the filter causing a minor pH shift which is harmless. No health based guideline value for pH in drinking water has been proposed by the WHO, although accompanying notes to the guidelines state that the pH range is often in the range of 6.5-9.5. In general there is little evidence to suggest that pH in potable water of around 9-10 is of public health significance.

In the absence of conclusive data regarding the levels of infective doses for specific pathogens, the FICL microbiological laboratory has been testing our filter elements for many years using an influent challenge of 6 log of *E-Coli* to substantiate the 4 log *E-coli* reduction claim that we make. This level of protection offered by the filters is more than adequate in all protected waters and the vast majority of moderately contaminated surface waters. However if the level of contamination in the water exceeds levels of 10⁴ (4log) an additional treatment must be used such as disinfection or UV light treatment. It would be extremely unusual for water having a greater level of contamination than 10⁴, to be considered suitable as a potable water source.