

Tufts University Paper Supports Sawyer Claims!

SAWYER FILTERS PASS TESTING

The two used filters that were tested both tested negative for allowing E. Coli to get through – in other words both were still working, no harmful bacteria are getting through!

COLIFORM VS. E. COLI

There are many types of coliform (bacteria) but not all are harmful. Testing for coliforms in untreated water in general is a good inexpensive way to see if water needs to be treated. There is a 90% chance that if in untreated water any coliforms are present that the harmful E. Coli are also present. However, the presence of coliforms in treated water is not an indication as to if a filter is working or not. Sawyer's filters remove the harmful coliforms. To confirm that E. Coli (a harmful coliform) is removed, a more thorough test is required. When that more thorough test was completed on 2 properly cleaned filters, the test confirmed that the filters did not allow the harmful E. Coli to pass through.

DAMAGED FILTER

The two pictures of the cut-aways show a new vs. a used filter. The picture indicates that the filters were not cut in same place. The new filter was cut high enough that the fibers were not disturbed. The used filter was cut down into the top of the fiber bundle where the fibers were probably damaged. The fibers are rated to 60 PSI. The casing will burst at 40 PSI as a safe guard on the fibers. To suggest that the fibers "burst" when the picture indicates damage when cut, is a premature conclusion. To be fair early filters were easy to be forced open and the filter-user may have opened the filter to see what was inside and "played" with the fibers and broke them. (Current filters and those produced for several years have been modified so they cannot be easily opened.) But the picture shows more likely the damage is a result of cutting the filter too close to the fibers.

FOULING

There is no irreversible fouling as suggested. Dirt traps on the outside of the fibers which can be cleared by backwashing. Calcium deposits can form on the fibers if the water has high calcium content and the fibers are allowed to dry. If the cap is placed on the filter after each use this will not be a problem as this prevents drying out. However, should the filter become fouled with calcium a simple cleaning (soaking) with household vinegar will dissolve it and restore the fibers to new condition.

GOOD HYGIENE

The Bolivia study (<http://www.ajtmh.org/content/early/2014/05/22/ajtmh.13-0568.full.pdf+html>) clearly shows that if the user is not diligent with hygiene they can contaminate the "clean" side of the filter. Backwashing along with cleaning the outside of the filter will remove the contaminates. This is confirmed in the Tufts' study also. If you run sterile water through an unclean contaminated filter, you can get bacteria loading of the effluent. But once the filter is cleaned, as this study shows, that does not happen.

54% E. COLI REMOVAL EFFICIENCIES IS FALSE READING

Once the filters were properly cleaned and tested, no harmful bacteria were getting through. That is 100% not 54%. The study includes data it collected from initial testing of unclean contaminated filters, which distorts the efficiency reading.

Conclusion:

The good news is the study supports Sawyer Longevity claims; the filters that were cleaned properly and tested were not letting any harmful E Coli through. The more a user is educated on how to properly maintain these filters, even in harsh conditions, the more satisfied they will be with the system. And while the study suggests we have only 54% efficiency at removing harmful E. Coli, the thorough testing performed in the study does a good job showing that once a filter is cleaned properly it increases to 100%, which supports our claims.

The filter design safe guards against fibers bursting. Besides suggesting fiber bursting as the only possibility to explain the damaged fibers, there are other possibilities such as the damage is more likely to have come from when the filter was cut open or even possibly by a curious user opening the filter and damaging the fibers. These options were not presented in the study.

It was suggested filters that are clogged with calcium are “irreversible” fouled, but all that was needed was to soak (or multiple soaks) in vinegar to restore them.

The data they collected shows with proper care the Sawyer filters work perfectly. Unfortunately for a reader not familiar with coliform bacteria, E. Coli or proper laboratory testing procedures it is easy to misunderstand the study and the results in the format presented. We commend the study’s results and it’s reinforcement of the filters ability to remove pathogens and the need to properly maintain the filter.

SAWYER’S INVITATION:

Sawyer invites any and all who would like to test a Sawyer filter. We are absolutely sure that any proper testing will only verify our claims. Some people or organizations design their test with an agenda to discredit us and some do conduct testing out of an honest curiosity but without a true understanding of how the filter works. All we ask is that you take the time to understand Hollow Fiber Membranes and Sawyers unique and exclusive version of it. Many so call “internet experts” think they know how to study Sawyer’s and other brand filters but make an absolute mess of the procedures and conclusions. We welcome any person studying the filters to contact us for a tutorial on the technology before commencing. Hollow Fiber Membranes have unique qualities and Sawyer filters even more so, we’ll help you understand the technology and how to conduct a fair and proper test.