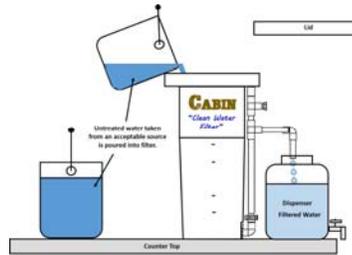


## General Description and Design Considerations

The **CABIN 'Clean Water Filter'** is a variation of the BioSand Water Filter technology in use around the world for more than twenty-five years, (See [www.manzwatinfo.ca](http://www.manzwatinfo.ca)) and previously commercialized by Davnor Water Treatment Technologies Ltd. (now defunct).



The **CABIN 'Clean Water Filter'** is intended to be used and commercialized world wide.

The unique design of the **CABIN 'Clean Water Filter'** results from critical evaluation of experience with the BioSand Water Filter technology from consumer, manufacturer, distributor and marketing perspectives, a focussed investigation of basic filter design, and independent performance evaluation studies.

The depth of the filter media has been significantly decreased relative to that recommended in the original design of the BioSand Water Filter (to that used in original laboratory work in the University of Calgary) resulting in a shorter, light weight filter.

The **CABIN 'Clean Water Filter'** is constructed of food grade plastic and media, all conforming with National Sanitation Foundation 61 standards for use with potable water.

The **CABIN 'Clean Water Filter'** can produce up to 12 litres of filtered water in one hour, the maximum flow rate for a slow sand filter with the surface area of this filter. This flow rate is controlled by internal orifices that match the media and internal filter design.

The **CABIN 'Clean Water Filter'** is cleaned using surface agitation (similar to the BioSand Water Filter). Impaired filter performance resulting from media compaction (when moving filter) or attempting to filter water with an excessively high concentration of suspended solids can be easily restored.

The filter is used as needed. It is manually operated and simple to use correctly. The media is cleaned in place. Electrical power is not required. There are no filter components (including the filtering media) that require replacement.

The **CABIN 'Clean Water Filter'** treats water so that it is:

**Safe for human consumption and Aesthetically pleasing.**

The filter can be used to remove particulate matter such as silt, iron (and arsenic if it is associated with the iron), particulate organic matter (living or dead); and disease causing organisms from surface water (rivers, ponds and lakes), groundwater (wells and springs) and captured rainwater.

It is designed for use in cold or warm climates for use in isolated homes or cabins, homes, apartments or condominiums in communities without access to safe drinking water, camps, emergency response and backup, boats, barges, recreational vehicles and disadvantaged households without access to safe drinking water world wide.

Water produced by the **CABIN "Clean Water Filter"** is free of most types of water borne parasites such as Giardia and Cryptosporidium and larger organisms such as Bilharzia and Guinea Worm and spores of infectious fungi. Most bacteria and viruses are also removed. BioSand Water Filters will effectively remove cholera.

It is strongly recommended that filtered water be disinfected using chlorine tablets or household bleach or UV disinfection and safely stored and dispensed to provide treated water that is free of disease causing organisms and is aesthetically pleasing.

The ability of the **CABIN 'Clean Water Filter'** to remove disease causing organisms has been verified by independent laboratory testing.

The **CABIN 'Clean Water Filter'** will not remove dissolved substances. Other filters are available for this purpose. (Arsenic can be removed if in the presence of oxidized iron.)

The **CABIN 'Clean Water Filter'** is intended to be placed on a table or counter-top safe from unwanted disturbance. It is used by removing the lid and pouring water to be treated directly into the top of the filter. Filtered water is immediately produced from the filter outlet.

The **CABIN 'Clean Water Filter'** is 50 cm tall and 30 cm wide at the lid. When filled with media the filter and accompanying commissioning kit weigh approximately 15 kg (30 pounds). The filter construction is very durable and should provide satisfactory service for many years.

The **CABIN 'Clean Water Filter'** can be shipped in 20-foot shipping containers each holding 800 filters complete with media (approximately 1,200 without media) or 40-foot shipping containers each holding 1,500 filters complete with media (or 2,400 without media). Note that it may be possible to source media at destination.

The treatment and cleaning processes used by the **CABIN 'Clean Water Filter'** are similar to those used in the millions of **BioSand Water Filters** used around the world since 1993. The important difference is that the **CABIN 'Clean Water Filter'** is compact, lightweight and portable.

