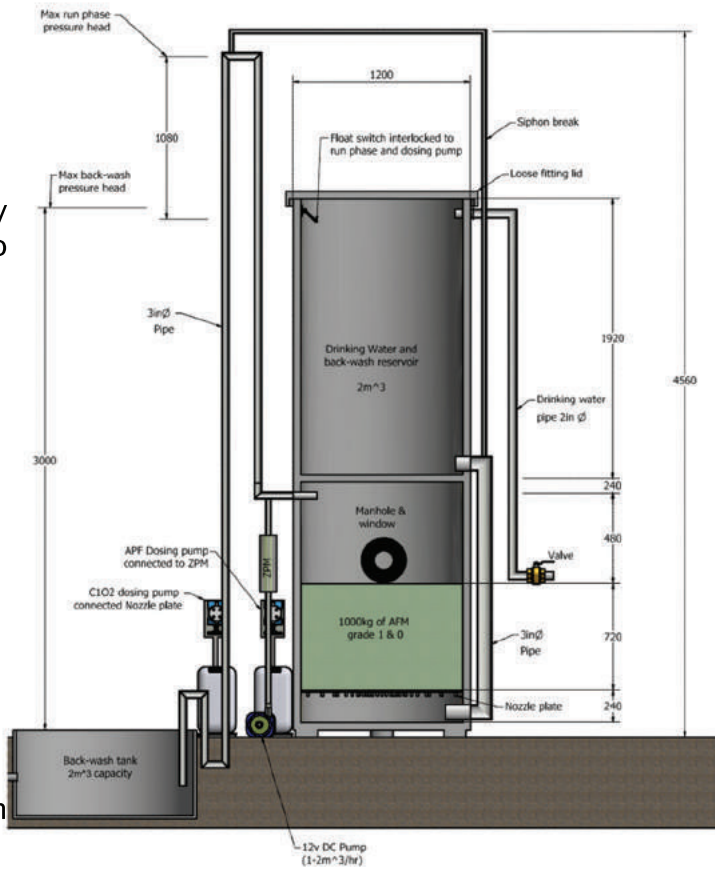
Gravity Flow Filters

- Rural community drinking water in compliance to WHO from almost any water source
- Pre–treatment prior to membranes
- Tertiary treatment of wastewater
- Industrial process water
- Industrial wastewater



The Solari Community Water is the perfect solution for Rural Community drinking water in any country, for the provision of water in compliance to WHO and European standards.

The filters use Dryden Aqua AFM activated filter media, and is fully automatic with no moving parts, controls or valves.
The Solari Community Water Filter is the perfect solution to resolve the world's drinking water issues in countries such as Africa and India and remote community's through–out the world.
The Solari Community Water Filter provides a trouble free solution.
The equipment will work for decades, with no maintenance except for cleaning and occasional attention.

The great simplicity of the Solari Community Water Filter also means they are a low cost. Indeed, Solari Water offers the filter design free of charge under a no cost License Agreement. The License agreement provides security to the client that the manufacturer is working with Solari Water and the equipment has been manufactured and operated in accordance to Solari Water's specifications with AFM activated filter media. Local manufacture means lower capital costs, lower transport costs and local technical support.

Performance factors

80% of disease in many tropical countries is caused from the consumption of drinking water.
Water supplied by the Municipal Water companies may also be contaminated because it is difficult to prevent transient channeling of unfiltered water into the network. This is the same situation in developed countries. However, the warmer the water and the more pollution there is in the water, the greater the problem.

A parasitic infection such as Cryptosporidium is responsible for up to 50% of all water related disease. The Solari Community Water Filter is a chemical free solution that eliminates Crypto. If flocculants and chlorine are available, then they will further improve the performance of the filter, but they are not essential. AFM also removes many herbicides, pesticides and chemicals from solution such as arsenic, ferric, manganese and fluoride.

	No flocculants or chlorine	Flocculent, no chlorine	No flocculent, but with chlorine	Flocculent and chlorine
Particle size, log 3 reduction	1 micron	0.1 micron	1 micron	0.1 micron
Turbidity reduction	>95%	>99%	>95%	>99%
Cryptosporidium	> log 3 reduction	> log 4 reduction	> log 3 reduction	>log 4 reduction
Bacterium	>log 2 reduction	>log 3 reduction	> log 4 reduction	>log 5 reduction

Why is the performance better than other systems ?

1. Most RGF Rapid Gravity filters operate at a flow velocity of 6m/hr.
The Solari Community Water Filter runs at 2m/hr.
Filtration performance is inversely proportional to filtration velocity, so the flow is slowed down.

2. All RGF filters for municipal supplies of drinking water use sand media close to 16 x 30 grade (0.5 to 1.0mm). The sand is not certified and varies greatly in quality as well as performance.
The Solari Community Water Filter uses grade 0 AFM (0.25 to 0.50), which provides for a much better performance than sand.
AFM also adsorbs small submicron particles and is manufactured under controlled conditions to an exact specification.
AFM was verified by IFTS to be an order of magnitude better than sand for the removal of suspended solids under 5 microns.

3. All RGF filters suffer from bio-dynamic instability leading to transient channeling of unfiltered water into the product water.
In countries with ambient water temperatures under 20 deg C, sand filter performance is usually better than 99.5%. In countries over 20 deg C, filtration performance is typically over 98%. It only takes a filter to fail 0.1% of the time to cause disease among people supplied by the network. Our Solari Community Water Filter may be used, or AFM may be retrofitted to replace the sand used in RGF or pressure filters supplying cities, there is no limit to the scale of the system.

4. AFM media never needs to be changed. This is important because the filter is designed to last for 20+ years, so the filter media must last for the same duration.

5. Better than UF ultra filtration? Yes, because AFM will not only filter down to 0.1 micron but will remove many particles below 0.01 microns as well as chemicals from solution, which is impossible for UF. Performance is better than UF, much lower cost with a system that is self-running and really easy to maintain.

Operating criteria for DA.filter

Model Number	Solari Community Water Filter 300	Solari Community Water Filter 600	Solari Community Water Filter 1200	Solari Community Water Filter 1800	Solari Community Water Filter 2200	Solari Community Water Filter 2400	Solari Community Water Filter 3000
Filter diameter mm	*300*	*600*	*1200*	*1800*	*2200*	*2400*	*3000*
Filter height, m	*4.5*	*4.5*	*4.5*	*4.5*	*4.5*	*4.5*	*4.5*
Water flow rate, litres/hr	*150*	*560*	*2250*	*5000*	*7500*	*10,000*	*15,000*
AFM grade 0 mass in Kg	*100*	*350*	*1400*	*3200*	*4750*	*5600*	*9000*
Pump lift from surface, m	*5*	*5*	*5*	*5*	*5*	*5*	*5*
Pump power kw	*0.05*	*0.1*	*0.15*	*0.3*	*0.5*	*0.75*	*1.1*

Material of construction Stainless steel, polyethylene or polypropylene plastic or food grade epoxy coated steel.

Other applications

The Solari Community Water Filter with AFM is a perfect solution for rural community drinking water as well as any application that requires water treatment to a high standard. AFM manufacturers Dryden Aqua are marine biologists, and have been filtering seawater for marine aquaria and high end aquaculture systems for 30 years. AFM is also used as a pre-treatment media for desalination systems in the Gulf and around the world. An important application is the tertiary treatment of municipal waste water for direct second use as class 1 irrigation water, or as a pre-treatment prior to RO membranes. The Solari Community Water Filter can cope with grossly polluted water, up to a concentration of 200mg/l suspended solids, or even with oil in water up to 100mg/l from Palm oil processing, fracking and oil industry waste water.