



Catalogue of Components



Reverse osmosis (RO) unit

These work by filtering water through a semi-permeable membrane at high pressure.

What will it remove?

Salt, solid particles, most bacteria and viruses, arsenic, chlorine

What won't it remove?

Some organic compounds, radon

Flow rate: 125 000 litres per day

Cost: £75 000.00



Granulated activated carbon (GAC) filter

These work because of their massive surface area. Just 1g typically has a surface area of 500 square metres (more than two tennis courts). Particles get stuck in all the nooks and crannies as water passes through.

What will it remove?

Most solid particles, organic compounds, chlorine

What won't it remove?

Bacteria and viruses, arsenic

Flow rate: 25 000 litres per day

Cost: £15 000.00

Sedimentation tank

Large tanks where the flow speed of the water drops. As a result it no longer has the energy to carry large particles such as sand. These drop to the bottom of the tank as sediment.

They are useful in preventing too much sediment reaching more delicate parts of the system such as the RO unit or GAC filter, which are expensive to replace.



What will it remove?

Most large solid particles

What won't it remove?

Salt, small solid particles, bacteria and viruses, arsenic, chlorine, organic compounds

Flow rate: 100 000 litres per day

Cost: £25 000.00

UV treatment system

Ultraviolet purification uses a UV lamp which exposes water to UV-C light rays. When harmful microbes are exposed to these rays, their nucleic acid absorbs the UV energy, which then scrambles the DNA structure of the organism. The cell is rendered sterile and can no longer reproduce. The cell is now considered dead and is no longer a threat.

There are no known micro-organisms which are resistant to this process.

What will it remove?

Bacteria, viruses and all other micro-organisms

What won't it remove?

Salt, small solid particles, bacteria and viruses, arsenic, chlorine, organic compounds

Flow rate: 10 000 litres per day

Cost: £25 000.00



Distillation system

This system boils water to produce water vapour. The vapour contacts a cool surface where it condenses as a liquid. Contaminants are not normally vaporised and remain in the boiling solution.

However, distillation does not completely purify water, because of contaminants with similar boiling points and droplets of unvaporised liquid that may be carried with the steam. Despite this, 99.9% pure water can be obtained by distillation.

It should be pointed out though, that the distillation apparatus may be the ideal place for Legionnaires' disease to thrive.

Distillation on a large scale would be incredibly expensive to run due to the energy needed to boil the water.



What will it remove?

Bacteria, viruses and all other micro-organisms, salt, solid particles, arsenic, chlorine, organic compounds

What won't it remove?

Compounds with a boiling point close to that of water

Flow rate: 10 000 litres per day

Cost: £50 000.00

Sea water pumps



Used to lift the water from the sea to the water treatment and supply system.

They have no ability to filter other than the mesh screens over the intakes to stop fish and other marine life from being sucked in.

Flow/pump rate: 250 000 litres per day

Cost: £22 000.00