

Starplast 



GRAY WATER REUSE

biogrigio
Home

Techno-commerciale catalogue 03/2024





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Home



biogrigio Home

Gray water treatment (soapy waters) to reutilize it for non potable purposes such as: flush toilet, garden and more.

*Reuse gray waters in your home in total autonomy, **TODAY YOU CAN DO IT.***

WATER EMERGENCY

Consuming less drinking water is a goal that we should all set for ourselves in daily life: avoiding waste of common water resources is of fundamental importance for protecting health and the environment in which we live.

STARPLAST'S SOLUTION

Biogrigio Home is a real response to the water shortage that afflicts all countries in the world. This system offers the possibility of completely reusing gray water (soapy water) for non-potable use: toilet flushing, gardening, car washing and more, offering a concrete saving in drinking water consumption of 50%

INSTALLATION

Biogrigio Home can be installed in all newly built homes and in existing ones. Talk to your trusted designer to find out the advantages you can obtain.

WATER EMERGENCY

WATER IS OUR FUTURE

Let's avoid wasting drinking water. How?

The small daily water saving actions are well known to everyone: turning off unused taps, checking for leaks, making conscious use of fully loaded washing machines and dishwashers, choosing high energy class appliances, always preferring the shower to the bath and more.

Today it is also possible to adopt other beneficial techniques such as gray water recovery.

The quantities of fresh water available on our planet, the continuous water stress to which it is subjected and climate changes require us to provide immediate responses to everyone's needs.

Numbers that make us reflect

1,5°C maximum limit on global warming to contain the most devastating damage caused by a rise in temperatures

55% minimum EU target of net reduction of greenhouse gases by 2030, not to exceed the threshold of 1.5°C

12,85% rate of arctic ice decline per decade

OUR PLANET IS COVERED BY 2/3 OF ITS SURFACE BY WATER, DIVIDED AS FOLLOWS:

97,2%
SALT WATER
seas and oceans

2,8%
FRESH WATER

2.1% ice present at the poles
0.6% groundwater
0.01% surface water (rivers and lakes)
0.001% water diffused into the atmosphere
0,001% acqua diffusa nell'atmosfera

Fresh water, therefore, represents only a very small part of all the water existing on Earth.



STARPLAST AND SUSTAINABILITY

On 25 September 2015, 193 member countries of the United Nations drafted a Sustainable Development program divided into 17 objectives.

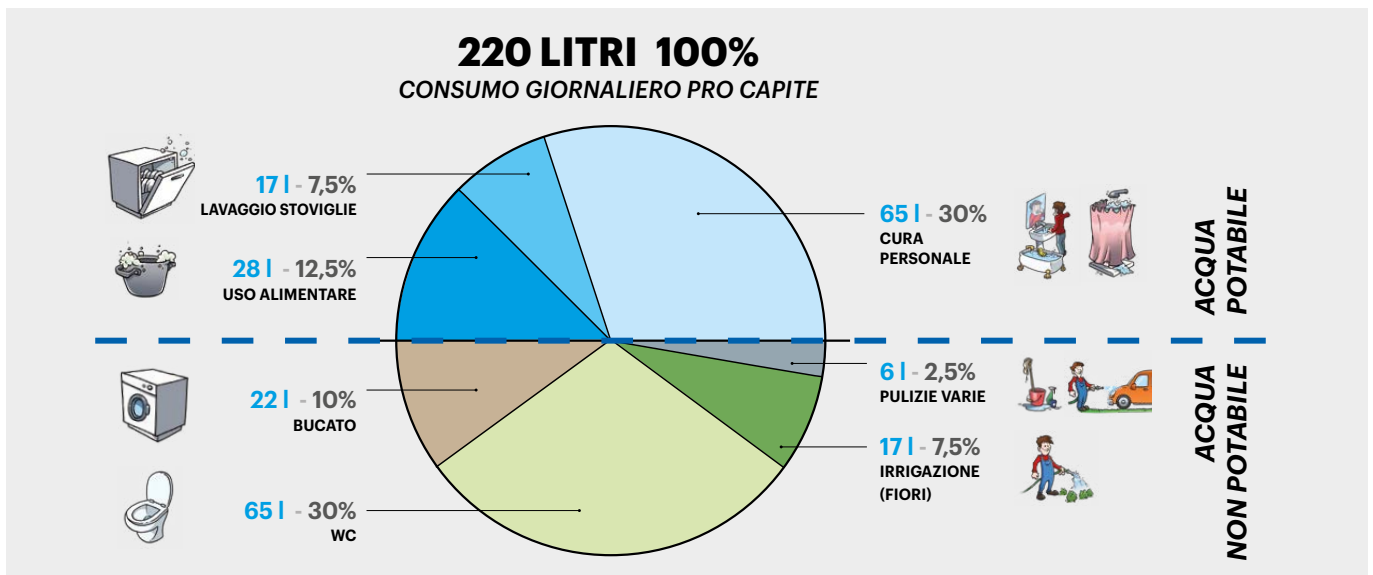
It is a **program of action for people, planet and prosperity.**

Water is the protagonist in some of these objectives.

OBJECTIVE 6 is entitled "Ensure the availability and sustainable management of water and sanitation facilities for all"



The statistical data of daily water consumption per capita within a home stands at 220 litres/person x day divided as follows:



From the data reported in the table it appears that at least 50% of daily consumption per capita can be saved by using non-potable water.

This saving contributes to collective benefits such as:

- POTABILIZATION**
 - Less water to purify
 - Less water to distribute
 - Distribution energy savings
- OVERLOAD OF THE NETWORKS**
 - Reduction of flow rates in distribution networks
 - Avoid strengthening public networks
- DECREASE IN DISCHARGE FLOW RATE**
 - Savings in terms of sewage purification
- QUALITY OF DRINKING WATER**
 - Consequence of savings on drinking water e on distribution means greater water quality

STARPLAST'S SOLUTION

LET'S GIVE WATER A SECOND LIFE

thanks to the idea of the new gray water recovery system, directly installed in your home, this system allows you to recover water from sinks and showers by reusing it for non-potable purposes such as: irrigation, cleaning, toilets, etc

ADVANTAGES

- WATER AND ENERGY SAVING (TO PROTECT THE ENVIRONMENT)
- COMPACT UNIT READY TO USE (PLUG&PLAY)
- FULLY AUTOMATIC
- NO CHEMICALS USED
- SELF-CLEANING
- LOW ENERGY CONSUMPTION
- 24/7 PERFORMANCE MONITORING

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WHAT DOES IT CONSIST OF?



KEY

- 1 Purified water storage tank for reuse
- 2 Lid
- 3 Primary treatment consisting of three tanks with 60 mm diameter PVC inlet
- 4 Secondary treatment:
(a) oxidation (b) ultrafiltration
- 5 Membrane compressor
- 6 Electric panel with PLC
- 7 Submersible pump for utility supply
- 8 Drain collector
- 9 UV disinfection lamp
- 10 Digital flow meter
- 11 Total drain valve unit
- 12 Sheet metal base
- 13 Panel with display
- 14 Inspectable drawer
- 15 60 mm diameter discharge pipe

HOW DOES IT WORK?

The Biogrigio Home system operates in a very simple manner, divided into three macro-phases:

I PHASE

It separates water from sink drains within the washrooms by separating solids and light bodies (hair in particular), as described below:

- grey water inlet **(A)**
- the solids sediment at the bottom of the 3 separation tanks while the light ones (hair or other) remain on the surface;
- periodically, independently, the programme cleans the tanks of sediment and hair by pouring them into the **drain (B)** which then reaches the **discharge manifold (C)** at the bottom of the plant.

II PHASE

It carries out biological treatment of wastewater through **air (D)** insufflation and then **membrane ultrafiltration (E)** in the following system:

- oxygenation of the effluent initiates a biological process to transform pollutants into simple substances;
- in the communicating tank, the effluent passes through the ultrafiltration membrane and by suction is sent to the holding tank **water (F)**.

III PHASE

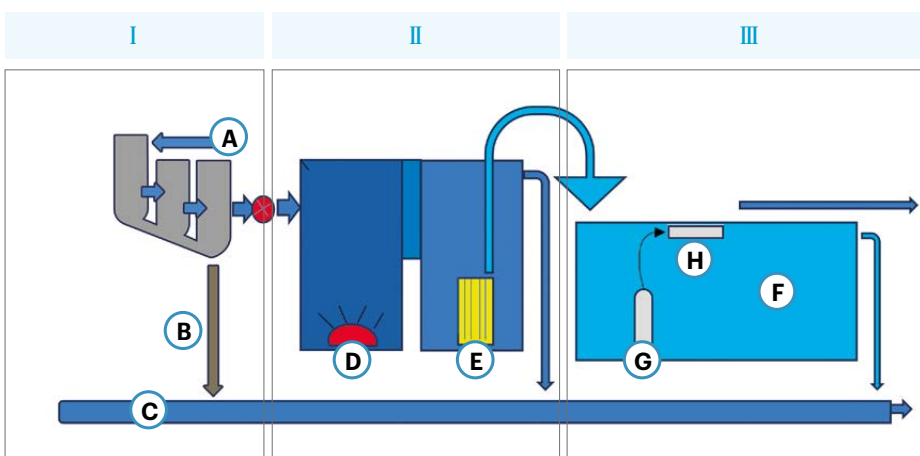
Inside the tank that forms the body of the Biogrigio Home system, **purified water (F)** is stored ready for use for non-potable purposes. The pressurisation pump **(G)** located inside the tank starts up independently when each utility is opened.

A **UV lamp (H)** placed under the cap ensures continuous sanitisation of the water inside the **tank (F)**.

Any water in excess of the volume of use is sent to the discharge manifold **(C)**.

SYSTEM CONTROL

The **Biogrigio Home** system is equipped with a control system for normal operation by means of alarms together with a recovered water meter.



ORDINARY MAINTENANCE

- hair and sediment removal takes place automatically

EXTRAORDINARY MAINTENANCE

- to be performed by a specialised technician, once a year;
- the ultrafiltration membrane must be removed at least once a year for cleaning with a running water jet. It is important that the membrane is not left out of the water for too long during this operation.

OPTIMIZE YOUR SAVINGS

If the recovered water is greater than the one you use, pipe it into a rainwater recovery system "BIOBLU" Starplast.

INSTALLATION

CIVIL HOUSINGS:

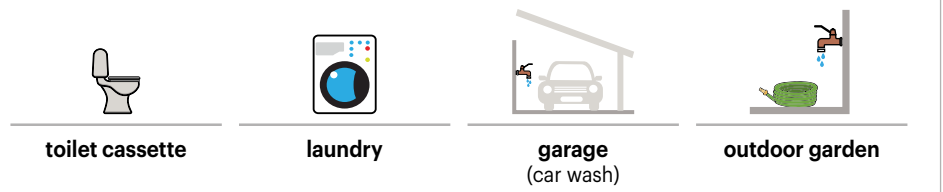
- NEW CONSTRUCTION
- ALREADY EXISTING

It is essential that the thermotechnical designer provides a double line of hydraulic pipes, one dedicated to distribution of drinking water and a second dedicated to non-drinking water.

Conventionally, the distinctive colors of the pipes inside homes are:

- cold drinking water **blue**
- hot drinking water **red**
- gas (kitchen heating) **yellow**
- waste water **gray**
- **non-potable water** **green**

The **NON-DRINKING** water pipe (**green colour**) must therefore reach the following points of use:



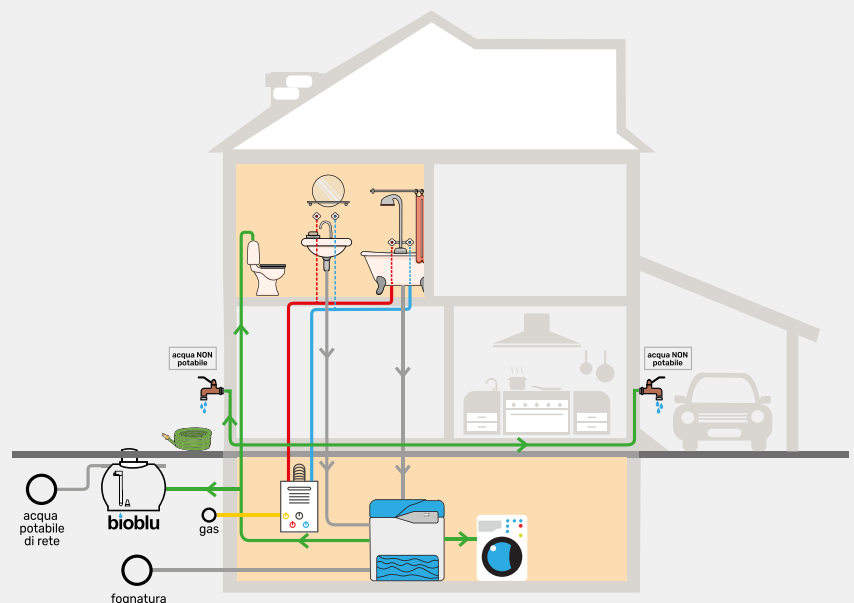
NEW CONSTRUCTION

In the case of new residential construction, the works consist of the installation of an additional pipe of a specific colour (**green**) dedicated to the distribution of non-potable water. Therefore, the additional cost compared to normal plumbing turns out to be quite low. For waste pipes, all designers now adopt separate ducting according to the type of origin of use, such as:

- draining **blond water** from the kitchens (*intended for a grease separator*)
- discharge of soapy water from bathrooms **gray water** (*destined for a second grease separator*)
- WC **waste water** drainage (*destinate a vasca Imhoff*)

It will therefore be necessary to converge the gray water waste pipe in a defined point of our new home, corresponding to the positioning point of the **Biogrigio Home** plant.

The exhaust pipe must, however, continue the path outside to connect directly to the biological plant if provided or sewerage, making the treatment not necessary (grease separator).



The faucet to be used as a point of intake of the line “non drinking water”, must necessarily be equipped with a safety system to prevent children from unintentionally accessing the improper use of water. In addition, it is mandatory to affix a sign with the words **NON DRINKABLE WATER** at the pick-up point.



ALREADY EXISTING

Is it possible to install and equip our old hydraulic system the *Biogrigio Home*?

The bathroom is the place inside the house most subject to maintenance:

- **ordinary maintenance**

consists in periodic general inspection

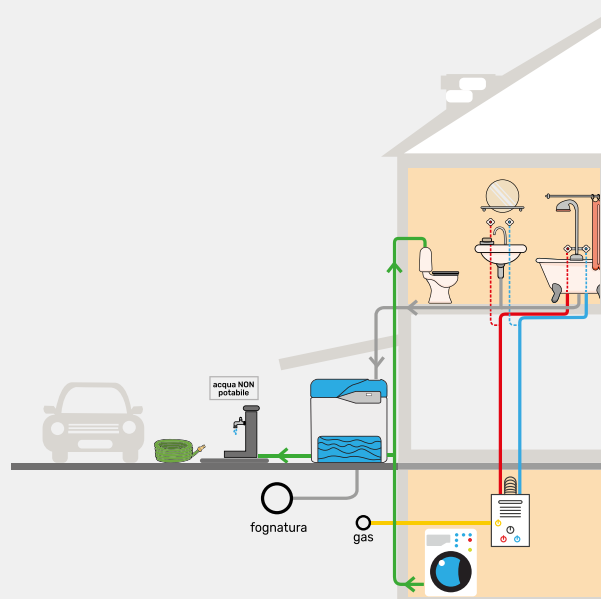
- **extraordinary maintenance**

from recent statistical data, is necessary at least after 30 years

Therefore, if an extraordinary maintenance intervention is necessary, it is desirable to also provide a dual pipe (**non-drinking water** supply pipe) to be connected to the WC box and make the discharge of **grey water** from existing pipes independent.

The new discharge and discharge pipes can be placed outside the building, as the bathrooms are generally located on the outer perimeter of the house, thus avoiding major construction work.

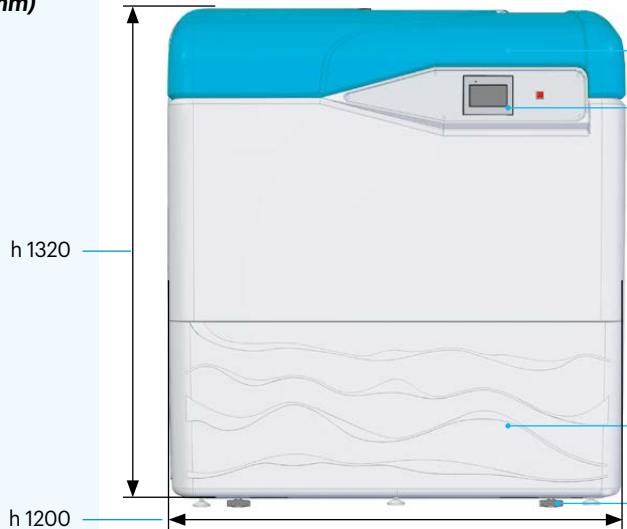
The *Biogrigio Home* plant has been designed to be positioned outside our house, provided that it is protected by adequate coverage.



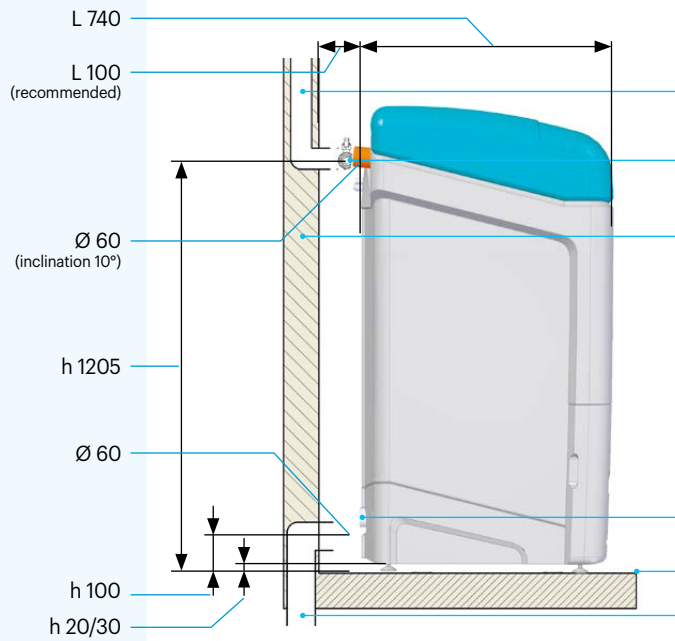
DIMENSIONS AND CONNECTIONS

Dimensions (mm)

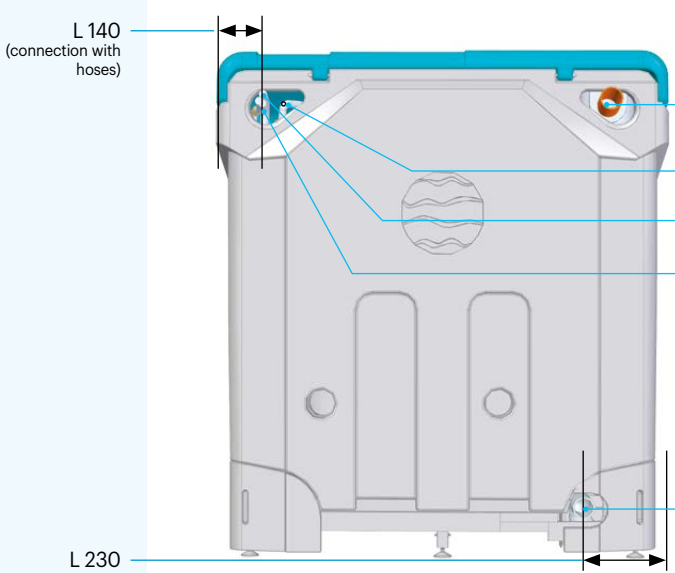
Description



- flap lid
- plant control display
- removable panel for maintenance
- adjustable feet



- grey water discharge pipe
- grey water inlet
- wall
- exhaust manifold
- floor plan
- drain pipe to the sewer



- grey water inlet
- power supply 230 Volt system
- top-up of the water network
- supply of recovered drinking water
- exhaust manifold

SPECIFICATION CLAUSE

Supply of grey water treatment plant type BIOGRIGIO HOME Starplast for the recovery of grey water from sinks, bathtubs and showers (excluding kitchen sinks), of polyethylene outdoor version built in the rotational moulding technique with constant wall thickness

The system consists of three distinct treatments:

- Primary sedimentation system automatic cleaning of solid residues through bag filter
- biological oxidation compartment with air blowing through fine bubble diffusers driven by membrane compressor
- MBR ultrafiltration compartment with membrane pack of the surface of m²... , fine bubble diffuser for membrane surface cleaning installed on board the system, permeate suction pump.

The treatments are encapsulated by a 330-litre purified water storage area where the pump is housed and the UV lamp for sterilization.

The whole system is controlled by a PLC programmable through a 4" touch-screen front monitor and a smartphone app.

The tanks of the system are equipped with a top opening with a lid for control and maintenance operations and with nozzles for bottom and overflow discharge. A flap lid covers the entire purification system.

BIOGRIGIO HOME will have the following dimensions:

L 1200 x W 700 x H 1300 - total volume liters 500 - max output capacity 25 l/min


PACKAGING



TECHNICAL TABLE

model	dimensions			recovery water			supply				connections		
	vol. tot.	La x Lu x h	peso	volume	delivery	pressure	Volt	Hz	kW	W/h	in	out	tp
	litres	mm	kg	litres	litres/min	bar					Ø		
BGR HE 500	500	740 x 1200 x 1320	150	330	25	3,0	230	50	1,0	30	60	1/2"	60



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