



*Redonnons le meilleur à la terre*



## User Guide

# Bionut<sup>®</sup>

Compact filter BIONUT 2

BIONUT2/6054/04FS à 20FS & BIONUT2/6054/04-1FS to 12-1FS  
NF EN 12566-6

## Information to be completed

### Manufacturer



**SIMOP France SAS**  
10, rue Richedoux  
50480 SAINT-MOTHER-CHURCH  
Tel : +33 (0)2 33 95 88 00  
E-mail: [simop@simop.fr](mailto:simop@simop.fr)  
[www.simop.fr](http://www.simop.fr)

Product reference : .....

Product serial number: .....

---

### Installer

Name : .....

Address: .....

Tel:..... E-mail: .....

Date of completion of the installation : .....

Signature and stamp of the installer :

---

### Public service of non collective sanitation

Name : .....

Address: .....

Tel : ... E-mail : .....

Introduction.....	8
1. General information.....	11
1.1. Reference to the standards used.....	11
1.2. Instructions for use.....	12
1.3. Safety instructions.....	15
1.4. General description.....	16
1.4.1. Operating principle.....	16
1.4.2. Presentation of the compact filter.....	17
1.4.3. Additional equipment.....	19
1.5. Sizing rules.....	21
1.6. Technical and dimensional characteristics.....	22
1.7. Power consumption.....	26
1.8. Performance.....	26
1.9. Warranty conditions.....	27
1.9.1. Material.....	27
1.9.2. Insurance.....	27
1.9.3. Traceability.....	28
1.10. Care and Maintenance.....	28
1.10.1. General.....	2
1.10.2. Maintenance requirements.....	30
1.10.3. Prevention of filter clogging and replacement of filter media	
1.10.4. Sludge production.....	33
1.10.5. Emptying procedures.....	33



1.11.	Installation cost over 15 years.....	38
2.	Installation and handling guide.....	39
2.1.	Safety information.....	40
2.2.	Implementation and installation.....	40
2.2.1.	Transport on the plot.....	41
2.2.2.	Place of installation.....	41
2.2.3.	Carrying out the excavation: common rules.....	42
2.2.4.	Installation on permeable ground without water table.....	43
2.2.5.	Installation in groundwater and/or clay soil .	44
2.2.6.	Installation in difficult terrain.....	45
2.3.	Realization of the hydraulic connections.....	47
2.4.	Realization of the electrical connections.....	47
2.5.	Cases requiring a lifting device (not approved).....	47
2.6.	Ventilation device.....	48
2.7.	Acceptance of work.....	51
2.8.	Commissioning of the BIONUT2 compact filter.....	52
2.9.	Sample collection device.....	55
3.	Quality Certificates.....	56



# Table of contents

**List of tables**

Table 1: List of main products not to be thrown away.....

Table 2: 3D views of BIONUT2 compact filters up to 20 PE.....

Table 3: Additional equipment.....

Table 4: Details of the risers used for the BIONUT2 compact filters.....

Table 5: Summary of the sockets to be used according to the models.....

Table 6: views of the compact filters.....

Table 7: Dimensions of models up to 6 PE.....

Table 8: Dimensions of 8 to 12 PE models.....

Table 9: Dimensions of models from 12 to 20 PE.....

Table 10: Imposed discharge standards.....

Table 11: Service life of main components.....

Table 12: Summary of maintenance operations.....

Table 13: Drainage frequencies.....

Table 14: Malfunctions and corrective actions by a professional or the user.....

Table 15: 15-year cost estimate for models up to 6 PE.....

Table 16: 15-year cost estimate for 8-12 PE. models.....

Table 17: 15-year cost estimates for 12-20 PE models.....

**List of figures**

Figure 1: schematic diagram of the BIONUT2 compact filter.....

Figure 2: Main components of the compact filter.....

Figure 3: Models 4, 5, 6 and 8 PE.....

Figure 4: 10, 12 and 16 HE models.....

Figure 5: 18 PE model.....

Figure 6: 20 PE model.....

Figure 7: distribution box (required for systems with 8 PE or more).....

Figure 8: Trough flush (required for more than 2 compact filters in parallel).....

Figure 9: Collection manhole (recommended for multi-filter systems).....

Figure 10: Lifting station suitable for all models.....

Figure 11: Side view of the filter.....

Figure 12: side view of the filter.....

Figure 13: top view of the filter.....

Figure 14: Top view of the filter.....

Figure 15: Front view of the filter.....

Figure 16: Front view of the filter.....

Figure 17: Location of the serial number.....

Figure 18: Handling of a compact filter alone.....

Figure 19: Cross-section of the installation in normal terrain.....

Figure 20: Laying diagram in the presence of groundwater and/or soil.....

Figure 21: Examples of pumps that can be used for lifting (not approved).....

Figure 22: Fresh air intake and secondary ventilation (6 PE model).....

Figure 23: Cross-sectional view of the aeration of the compact filter (6 PE model).....

Figure 24: Ventilation connection at the ridge.....

Figure 25: Device for taking samples at the outlet of the compact filter.....

## Introduction

Wastewater treatment is a major issue in our modern society because untreated wastewater discharged into the natural environment has a direct impact on the quality of groundwater.

Indeed, a person discharges daily in his wastewater a significant quantity of organic and mineral matter, which contains in particular phosphorus (from detergents), many germs and particularly microbial faecal germs (bacteria and pathogenic viruses responsible for sometimes very serious diseases). The objective of sanitation is therefore to prevent any health risk, to limit the impact of the discharge on the environment and to protect water resources.

In France, the general code of local authorities imposes on each municipality a sanitation zoning, which makes it possible to define whether the sanitation is of individual or collective type. In addition, the 1992 Water Law required municipalities to set up a public non-collective sanitation service (SPANC) which controls and validates the treatment facilities whose discharges will be returned to the natural environment. You have just bought a BIONUT2 compact filter.

To guarantee an efficient treatment of domestic wastewater, the BIONUT2 compact filter must be preceded by a primary treatment (not supplied) that meets the recommendations described generically in this guide.

# User's Guide and Maintenance





# 1. General information

Note in this guide, " BIONUT2 "means " compact filter BIONUT2 ".

## 1.1. Reference to the standards used

The<sup>BIONUT®</sup> 2 models comply with :

To the following by-laws :

- Decree of September 7, 2009 modified, setting the technical requirements applicable to non-collective sanitation facilities receiving a gross organic pollution load less than or equal to 1.2 kg/d of BOD<sub>5</sub>.
- Decree of September 7th, 2009 modified, defining the terms of approval of the persons carrying out the emptying and taking in charge the transport and the elimination of the extracted matters of the installations of non collective sanitation.
- Order of March 7, 2012, amending the order of September 7, 2009, setting the technical requirements applicable to non-collective sanitation facilities receiving a gross organic pollution load less than or equal to 1.2 kg/d of BOD<sub>5</sub>.
- Order of April 27, 2012 relating to the modalities of the execution of the mission of control of non-collective sanitation installations.

And fall under :

- Annex ZA of standard NF EN 12566-6: Prefabricated septic tank effluent treatment units.
- The Construction Products Regulation 305/2011

And the standards :

- NF DTU.64.1 for the ventilation system
- NF P 98-331 for earthworks
- NF DTU.64.1 for the installation (and in particular §6.1 ; §6.4.1 ; §6.4.2 and §6.5)
- NF EN 12566-6 for the device
- NF C 15-100 for electrical installations
- Machine safety standards
- Standards for low voltage installations
- Equipment and material standards

Electrotechnical equipment must be CE declared according to the European directives:

- 2006/95/EC relating to electrical equipment designed for use within certain voltage limits,
- 2004/108/EC or Electromagnetic Compatibility Directive, 2006/42/EC or Machinery Directive (if applicable).

## 1.2. Instructions for use

The BIONUT2 compact filter is only intended for the secondary treatment of domestic wastewater and/or wastewater assimilated under the R. 214-5 of the Environment Code.

**The secondary treatment by the compact filter is preceded by a primary treatment by the pit (not provided). It is described generically in this guide.**

No other water source may be connected to the device, in particular:

- Rainwater,
- Runoff water,
- Pool water,
- Condensation water,
- Water softener brine drain,
- Water used no comparable at waters domestic waste from any other activity.

Biocides, which are toxic and can cause malfunctions, must not be discharged into the BIONUT2 compact filter . *For water containing large quantities of fats or vegetable oils, it is recommended to install a grease trap or, if necessary, a grease separator connected to the device (note that fecal matter must not pass through this equipment). This option is not subject to BIONUT2 approval.*

In addition, it is essential to respect the points mentioned in the following table:

Table 1: List of main products not to be thrown away

Do not dispose of solids or liquids in sinks, shower trays, bathtubs or other toilet	What these materials entail	Suitable drop-off locations
<b>Blocks for toilet bowl</b>	Poison the wastewater	Garbage can
<b>Ashes</b>	Do not decompose	Garbage can
<b>Wallpaper paste</b>	Clogs pipes	Collection center of the municipality
<b>Diapers, cotton swabs, sanitary protection, plasters</b>	Clogged pipes	Garbage can
<b>Waste containing synthetic oils</b>	Poison the wastewater	Collection center, gas station
<b>Thinners, paints and varnishes</b>	Poison the wastewater	Collection center of the municipality
<b>Food and frying oils</b>	Causes deposits and clogs of the pipes	Collection center of the municipality
<b>Engine oils</b>	Poison the wastewater	Collection center, gas station
<b>Animal Litter</b>	Clogged pipes	Garbage can or collection center of the municipality
<b>Drugs</b>	Poison the wastewater	Collection center, pharmacy
<b>Cigarette butts</b>	Settle in the treatment plant	Garbage can
<b>Pesticides</b>	Poison the wastewater	Collection center of the municipality
<b>Condoms</b>	Obstructs the pipes	Garbage can
<b>Chemical products</b>	Poison the wastewater	Collection Center
<b>Photochemicals</b>	Poison the wastewater	Collection center of the municipality

<b>Phytosanitary products</b>	Poison the wastewater	Collection center of the municipality
<b>Textile (woven and non-woven, wipes, dressings)</b>	Clogged pipes	Garbage can
<b>Cement water</b>	Settles and hardens pipes	Specialized company
<b>Leftover food</b>	Clog pipes, attract pests	Garbage can
<b>Chemicals for moderate use</b>	What these materials entail	Precaution
<b>Cleaning products (Disinfectants)</b>	Poison wastewater (kill bacteria)	To be diluted before discharge.
<b>Bleach (wash water)</b>	Poison wastewater (kill bacteria)	To be diluted before discharge.

Beware, human discharges in case of heavy antibiotic treatment can disturb the functioning of biological treatments of water treatment devices.

### 1.3. Safety instructions

Domestic wastewater contains bacteria and pathogenic viruses that constitute risks for human health. It is therefore imperative to respect the following prescriptions when working on the BIONUT2 filters or on the all-water tank, installed upstream:

- Avoid any direct contact with wastewater, even if treated, to avoid any risk of direct or indirect contamination for all persons.
- The user must not enter the BIONUT2 compact filter or the septic tank.
- The access plugs must remain accessible and be locked. For the all-water tank, the lids must be secured by a locking system that cannot be removed without suitable tools, or by their weight. For information, the lids of the pits can support a pedestrian load if they are of class A15 according to the NF EN 124 standard.
- Any intervention must be done with adapted PPE (Personal Protective Equipment).
- Hygiene rules (hand washing, frequent change of work clothes, *etc.*) related to the work on wastewater must be respected.
- Access plugs must be resealed after each intervention.

Non-exhaustive list of PPE that can be used:

- Protective gloves,
- Safety shoes,
- Protective glasses.

The BIONUT2 compact filters are closed by lockable access plugs, which cannot be removed without suitable tools (key supplied) or because of their weight.

These buffers do not have any water stagnation areas. Any risk of accidental contact with water is therefore limited. The ventilation cap is equipped with anti-mosquito grids to make the device hermetic to the intrusion of insects.

However, in case of injury or accidental contact, it is necessary to call the emergency services (15 or 112).

## 1.4. General description

### 1.4.1. Operating principle

The BIONUT2 compact filter must be preceded by a primary treatment (not supplied) which allows the decantation of suspended matter in the bottom of the tank, where these matters will be digested and liquefied by anaerobic bacteria, creating primary sludge. The storage volume of this sludge can reach a maximum of 50% of the useful volume of the tank. The second role of the tank is to retain the floating matter and grease on the surface (by density difference), thus forming a crust or "greasy cap".

The secondary treatment by the compact BIONUT2 filter is carried out in two stages :

#### Biological treatment

The biological treatment is achieved by the compact filter and its hazelnut shell media. The pre-treated water arrives in the trough flush integrated in the tank. The flush feeds a distribution ramp which allows the distribution of the effluent in the upper part of the hazelnut shell media, in a uniform way. Then the water percolates through the mass to ensure its treatment. The hazelnut shell allows to fix aerobic bacteria which will ensure the biological purification of water. An oxygen supply is provided by a DN 100 mm ventilation.

#### Evacuation

Treated wastewater is discharged in accordance with the amended decree of September 7, 2009, i.e. primarily by infiltration into the soil or by irrigation of plants. In case of demonstrated impossibility (in particular in the case of an impermeable soil or a high water table), it will be done by discharge towards the surface water environment via a lifting station (without approval). The evacuation must be dimensioned in such a way as to avoid any risk of the system being loaded.

### 1.4.2. Presentation of the compact filter

BIONUT2 is a compact filter designed for the treatment of domestic wastewater and/or wastewater assimilated under the R.214-5 of the Environmental Code. This process offers both a high level of treatment and admits important variations of organic and hydraulic loads. It is therefore particularly suitable for domestic use and can be used in the case of secondary residences. This product uses a hazelnut shell media to filter water that has been previously decanted in an all-water tank (not supplied).

The BIONUT2 compact filters are available from 4 to 20 PE.

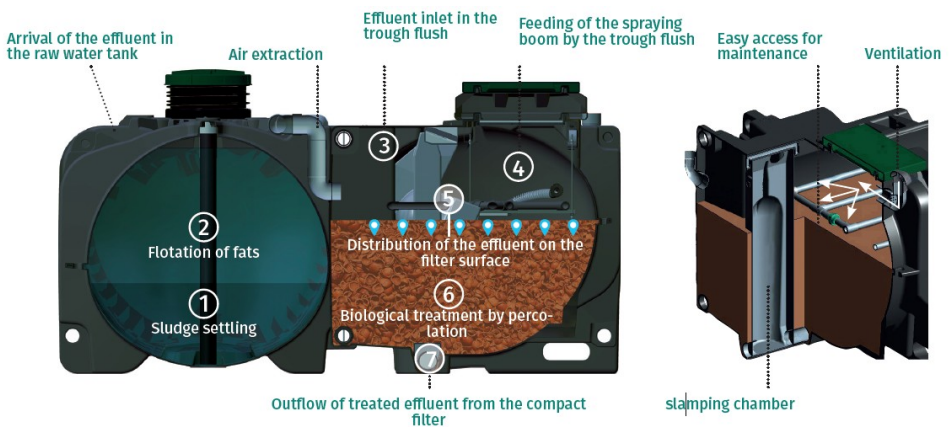


Figure 1: schematic diagram of the BIONUT2 compact filter

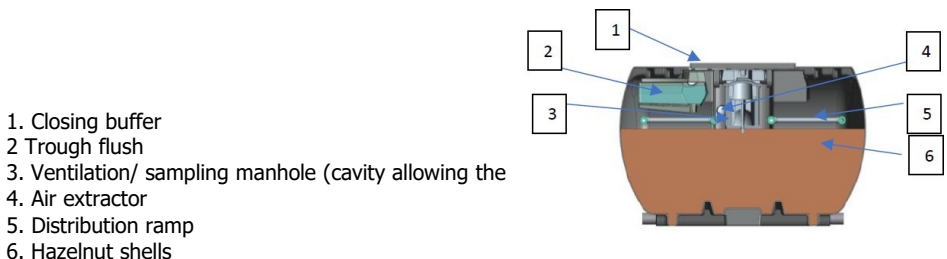

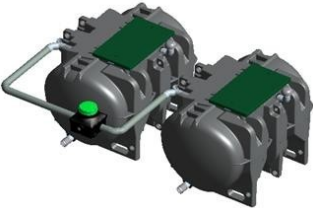
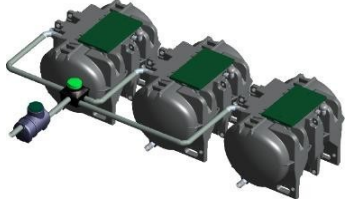
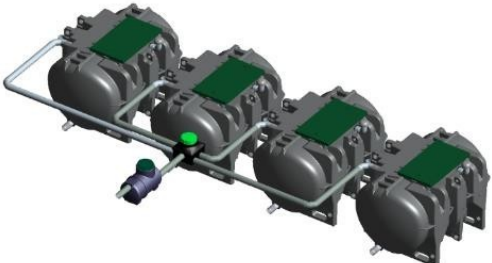


Figure 2: Main components of the compact filter

Table 2: 3D views of BIONUT2 compact filters up to 20 PE

	<p><i>Figure 3: Models 4, 5, 6 and 8 PE</i></p>
	<p><i>Figure 4: 10, 12 and 16 PE models</i></p>
	<p><i>Figure 5: 18 PE model</i></p>
	<p><i>Figure 6: 20 PE model</i></p>



### 1.4.3. Additional equipment

As shown in Table 3, some additional equipment is required to ensure the proper functioning of the treatment plants from 8 PE onwards.

Table 3: Additional equipment




REP2/04/04	AF2/6016/055	REC/02/13	RELBIONUT
			
<p><i>Figure 7: distribution box (required for systems with 8 PE or more)</i></p>	<p><i>Figure 8: Trough flush (required for more than 2 compact filters in parallel)</i></p>	<p><i>Figure 9: Collection manhole (recommended for multi- filter systems)</i></p>	<p><i>Figure 10: Lifting station suitable for all models</i></p>

Table 4: Details of the risers used for the BIONUT2 compact filters


Equipment	Socket reference	Socket shape	Installation method	Height	Fixing
Auget	RH2/03/15	Circular	To be screwed	H150	No joints, no glue
Manhole cover					
Compact filters	RH2/15/B1 or RH2/15/B2	Rectangular	To be installed	H150	
	RH2/30/B-1 or RH2/3030/B-2			H300	
Post of lifting	RH502	Circular	To be screwed	H250	

Table 5: Summary of the sockets to be used according to the models

BIONUT2/FS models	4	4-01	5	6	6-01	8	8-01	10	12	16	18	20
Auget											RH2/03/15	
Manhole cover						RH2/03/15						
Compact filter	Total number of HR	1			2				4	3	4	
		RH2/15/(B-1 or B-2) or RH2/3030/(B-1 or B-2)										
Lifting station	RH502											

Extensions are available for all models, so that the surface buffer(s) are accessible regardless of the depth of the water line.

For an embankment height of 300 mm or 600 mm, 2 to 4 extensions of 150 mm height or 1 to 2 extensions of 300 mm height can be superimposed.

The compact filter BIONUT2 is already equipped with a sampling chamber in series (except for the 8 PE) it is therefore not necessary to install one downstream of the filter, except in the case of a multi-filter system.

## 1.5. Sizing rules

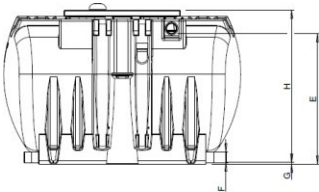
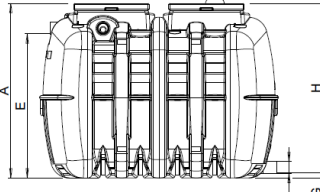
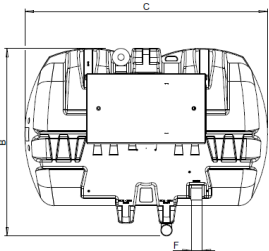
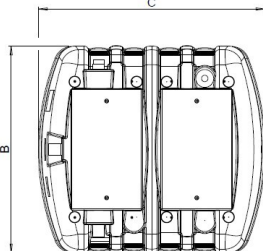
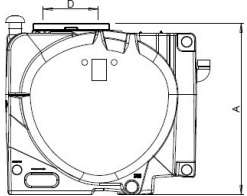
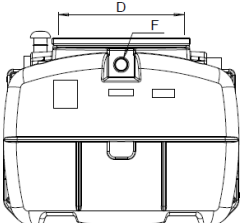
The sizing of the installation, expressed in number of people equivalent, is equal to the number of main rooms of the dwelling (in the sense of article R.111-1-1 of the code of the construction and the dwelling), in accordance with the decree of September 7, 2009 modified, except for the following cases, for which a particular study must be carried out (to justify the bases of dimensioning):

- ✓ Establishments receiving the public (ERP), for which the dimensioning is carried out on the basis of the capacity of reception;
- ✓ Single-family dwellings where the number of main rooms is disproportionate to the number of occupants;

The compact filters BIONUT2 compact filters are designed on the basis of the daily organic load of 60 g BOD<sub>5</sub>/day/PE.

## 1.6. Technical and dimensional characteristics

Table 6: views of the compact filters

Views of the compact filter 04, 04-01, 05, 06 and multi-filter models 10, 12, 18 and 20	Views of the compact filter alone 06-1 and 08 and multi-filter models 12-1, 16
 <p>Figure 11: Side view of the filter</p>	 <p>Figure 12: side view of the filter</p>
 <p>Figure 13: top view of the filter</p>	 <p>Figure 14: Top view of the filter</p>
 <p>Figure 15: Front view of the filter</p>	 <p>Figure 16: Front view of the filter</p>

**Note** note: All rectangular manholes of the compact filters have the same dimensions: 470 x 920 mm.

The models of the range are composed of filters and accessories specific to each device (see paragraph 1.4.3).

The treatment system must integrate one or more septic tanks (not supplied) depending on the capacity.

### Criteria for choosing a prefabricated pit

The all-water septic tank must be prefabricated in accordance with the requirements of appendix ZA of standard NF EN 12566-1.

The CE-marked BIONUT2 compact filter treatment system must comply with the requirements of the NF EN 12566-1 standard, particularly with regard to structural behaviour, durability and watertightness (indicated on the CE plate supplied with the all-water tank).

### Hydraulic sizing

The all-water septic tank, with its prefilter, must have the CE mark.

The all-water septic tank, with its prefilter, must have a hydraulic efficiency lower than or equal to 4.1 g of balls (on the 4th highest value of the hydraulic efficiency type test) as defined in standard EN 12566-1.

The volume of the all-water septic tank to be installed upstream of the compact filter(s) is determined by the number of designated population equivalents according to the model indicated in Tables 7 to 9.

**The minimum characteristics relating to the structural behaviour, also specified in the tables below, are to be taken into consideration only in the case where the outlet of the pit is connected directly to the inlet of the filter, with the same height of embankment above the 2 tanks.**

**If the inlet of the compact filter is not a gravity flow, with a slope lower than 4%, it is necessary to foresee a tranquillization manhole between the all water tank and the compact filter(s).**

Table 7: Dimensions of models up to 6 PE

Model of the range		BIONUT2/ 6054/04-1FS	BIONUT2/ 6054/04FS	BIONUT2/ 6054/05FS	BIONUT2/60 54/06-1FS	BIONUT2/ 6054/06FS	
	CAPACITY	4 PE	4 PE	5 PE	6 PE	6 PE	
Pit (minimum requirements)	Treatment efficacy (effectiveness hydraulic)	≤ 4.1 g of microbeads					
	Volume (m3)	≥ 3					
	Number of compartments	1					
	Minimum performance requirements (to be verified on the manufacturer's RFP)						
	Watertightness	Compliant					
	Sustainability	Compliant					
	Crush resistance:						
	Permitted fill height above the tank	≤ 0,6 m					
	Authorized height of the water table from the base of the tank	≤ 1,24 m					
Filtre	Reference	BIONUT2/ 04-1	BIONUT2/ 04	BIONUT2/ 05	BIONUT2/ 06-1	BIONUT2/ 06	
	Useful surface (m²)	2,27	2,47		3,36	2,84	
	Total height A (m)	1,46	1,46		1,5	1,46	
	Massive useful height (m)	0,75					
	Length C (m)	2,24				2,06	2,24
	Width B (m)	1,44	1,54		1,88	1,74	
	FEE E (m)	1,24					
	FES G (mm)	18			43	18	
Inlet diameter F (mm)	100		100	100			
Maximum backfill height above the compact filter (m)		0,60		0,60	0,60		

**Note** note: the channels mentioned with a -1 are variants.

Table 25 dimensions of the 8 to 12 P models

Model of the range		BIONUT2/ 6054/08-1FS	BIONUT2/ 6054/08FS	BIONUT2/ 6054/10FS	BIONUT2/ 6054/12-1FS
CAPACITY		8 PE	8 PE	10 PE	12 PE
Pit (minimum requirements)	Efficiency of the treatment (hydraulic efficiency)	≤ 4.1 g of microbeads			
	Volume (m3)	≥ 4	≥ 4	≥ 5	≥ 6
	Number of compartments	1			
	Minimum performance requirements (to be verified on the manufacturer's RFP)				
	Watertightness	Compliant			
	Sustainability	Compliant			
	Crush resistance:				
	Permitted fill height above the tank	≤ 0,6 m	≤ 0,6 m	≤ 0,6 m	≤ 0,6 m
	Authorized water table height since the base of the tank	≤ 1,24 m	≤ 1,24 m	≤ 1,24 m	≤ 1,24 m
	Filters	Reference	BIONUT2/08		2 x BIONUT2/05
Useful surface (m <sup>2</sup> )		3,80		4,94	6,72
Total height A (m)		1,5		1,46	1,5
Massive useful height (m)		0,75			
Length (m) C		2,38		2,24	22,06
Width (m) B		1,88		1,54	11,88
FEE E (m)		1,24		1,24	1,24
FES G (mm)		43		18	43
Inlet diameter F (mm)		100		100	100
Maximum backfill height above the compact filter (m)		0,60		0,60	0,60

Table 26 dimensions of models from 12 to 20 PE

Model of the range		BIONUT2/ 6054/12FS	BIONUT2/ 6054/16FS	BIONUT2/ 6054/18FS	BIONUT2/ 6054/20FS	
CAPACITY		<b>12 PE</b>	<b>16 PE</b>	<b>18 PE</b>	<b>20 PE</b>	
Pit (minimum requirements)	Efficiency of the treatment (hydraulic efficiency)	≤ 4.1 g of microbeads				
	Volume (m3)	≥6	≥8	≥10		
	Number of compartments	1				
	Minimum performance requirements (to be verified on the manufacturer's RFP)					
	Watertightness	Compliant				
	Sustainability	Compliant				
	Crush resistance:					
	Permitted fill height above the tank	≤ 0,6 m	≤ 0,6 m	≤ 0,6 m		
	Authorized height of the water table from the base of the tank	≤ 1,24 m	≤ 1,24 m	≤ 1,24 m		
	Filter <sup>s</sup>	Reference	2 x BIONUT2/ 06	2 x BIONUT2/ 08	3 x BIONUT2/ 06	4 x BIONUT2/ 05
Useful surface (m <sup>2</sup> )		5,68	7,6	8,52	9,88	
Total height A (m)		1,46	1,5	1,46	1,46	
Useful massif height (m)		0,75	0,75	0,75	0,75	
Length C (m)		2,24	2,38	2,24	2,24	
Width B (m)		1,74	1,88	1,74	1,54	
FEE E (m)		1,24	1,24	1,24	1,24	
FES G (mm)		18	43	18	18	
Inlet diameter F (mm)	100	100	100	100		
Maximum backfill height above the compact filter (m)		0,60	0,60	0,60	0,60	

### 1.7. Power consumption

Since the BIONUT2 compact filters have no electrical equipment, there is no power consumption.

### 1.8. Performance

SIMOP guarantees that the BIONUT2 compact filters comply with the regulations in force. In this respect, the level of treatment will be that defined in the modified decree of September 7th 2009. These performances are obtained within a normal framework of use, maintenance and upkeep (see the chapter on instructions for use).



Table 10: Imposed discharge standards

Parameters	Regulatory thresholds of the order of 7/09/2009
BOD <sub>5</sub>	≤ 35 mg/l
TSS	≤ 30 mg/l

Attention a period of at least 6 weeks is necessary to guarantee stabilized purification performances.

## 1.9. Warranty conditions

### 1.9.1. Material

Any warranty is only valid if the conditions of installation, use and maintenance have been respected. Damage caused by emptying the unit is not covered by the warranty.

The vat room is guaranteed for 10 years, if the conditions of installation and have been observed (see chapter 2).

The other components are guaranteed for 1 year under the following conditions normal use.

The warranty period begins on the day of installation of the system at the end user's premises, subject to receipt of the T-letter, the certificate of acceptance of work (see section 2.7), the commissioning report (see section 2.8), or the declaration on the website.

### 1.9.2. Insurance

The BIONUT2 compact filter is covered by the ten-year civil liability insurance (RCD) imposed on manufacturers of construction materials.

The insurance policy taken out by SIMOP includes coverage for damage involving the joint and several liability of the insured for works subject to compulsory insurance (in accordance with Article 1792.4 of the Civil Code).

The **decennial insurance of the engineering and design departments** which carry out prescriptions in ANC on private domain **is mandatory**. It follows from the decennial responsibility which is incumbent on any person working on the building.

The installer guarantees the completion of the work and must take out a **ten-year insurance** policy.

### 1.9.3. Traceability

SIMOP's quality management system is ISO 9001:2015 certified. SIMOP ensures its own factory production controls in the framework of CE marking in accordance with Annex ZA of EN 12566-6 and the Construction Products Regulation 305/2011.

The CE marking includes the name of the company SIMOP, the commercial name of the product, the identification mark and the corresponding number of PE. It is affixed to the outer casing of the filter, on the inlet or outlet side.

Qualitative and quantitative controls on production are carried out by SIMOP to ensure the conformity of the products when they leave the factory.

Each BIONUT2 compact filter has an associated serial number. The serial number is located on the manhole (see figure 17). This number allows our service department to trace all information related to the production and maintenance of the product.

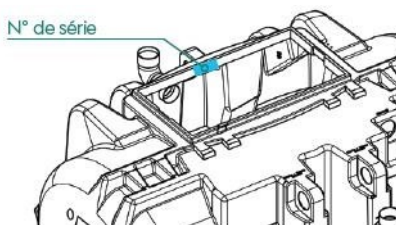


Figure 17: Location of the serial number

## 1.10. Care and Maintenance

### 1.10.1. General

In accordance with the regulations, the user must ensure the proper maintenance and operation of the treatment system. To do so, he must follow the recommendations of this user guide and correctly fill in the maintenance booklet.

SIMOP proposes to have the maintenance performed by

a company specialized and approved by SIMOP. ASSISTEAUX can thus intervene throughout France (see model contract and intervention report in paragraphs 1.10.8 and 1.10.9).

If you decide not to subscribe to a maintenance contract with a company approved by SIMOP, the maintenance instructions and the monitoring table for your installation must be completed by your service provider or yourself (see maintenance log in §1.10.10 and §1.10.11 of the guide).

**You will be asked for these elements and their supporting documents if necessary during an expertise or a possible malfunction.**

After commissioning (offered with the compact filter), maintenance operations must be carried out once every two years, with an annual verification of the proper functioning of the device. This verification can be done by the user. The ASSISTEAUX contract provides for a visit every two years. Each intervention must be recorded in the maintenance manual of your device and/or be the subject of a signed intervention report.

**NOTA : The commissioning assistance is only valid for the Metropolitan France**

In order to maintain reliable performance of the device, it is important to have the components replaced by a professional before the end of their lifetimes as indicated below:

Table 11: Service life of main components

Element	Lifetime declared by SIMOP	Actions to be taken	How it works
Tank	> 25 years		
Distributor	> 25 years	Replacement in case of damage	<ul style="list-style-type: none"> <li>- unscrew the union fittings</li> <li>- remove deteriorated parts</li> <li>- replace the extracted parts</li> <li>- screw the union back on.</li> </ul>
Trough head	15 years old	Replacement in case of damage	<ul style="list-style-type: none"> <li>- unscrew the clamp holding the trough head</li> <li>- replace the trough head</li> <li>- screw the retaining collar back on</li> </ul>
Hazelnut shells	10 years minimum	Removal (pumping by an approved drainer) then replacement	Only by a licensed professional with the manufacturer's operating protocol
Geotextile/ Geogrid	10 years old	Can be cleaned or even replaced when changing the filter media. Made of polypropylene, this material does not alter over time.	Only by a licensed professional with the manufacturer's operating protocol
Flexible	2 years	Replacement in case of deterioration and verification of the installation and proper functioning	<ul style="list-style-type: none"> <li>- unscrew the 2 hose clamps</li> <li>- proceed to its replacement</li> <li>- screw the 2 clamps back on</li> </ul>
Trough tare	2 years	Replacement in case of deterioration and verification of the installation and proper functioning	<ul style="list-style-type: none"> <li>- unscrew the holding screw of the tare of the trough</li> <li>- proceed to its replacement</li> <li>- screw in the retaining screw</li> </ul>

The recovery of wear parts at the end of their life is described in §1.10.6.

The supply of spare parts can be carried out by SIMOP, the installer or the company in charge of the maintenance of the die, and this, during the warranty period or not.

The spare parts are available on the online shop of our partner : [www.assisteaux.com/eaux-assainissement.html](http://www.assisteaux.com/eaux-assainissement.html).

The delivery time for these parts is 2 to 7 days on average. In case of emergency, this period can be reduced to 48 hours.

**Contact SIMOP after-sales service :**

SIMOP - 10, rue Richedoux - 50 480 Sainte-Mère-Eglise

Tel : 02 33 95 88 00

Website : [www.simop.fr](http://www.simop.fr) - Email: [accueil@simop.fr](mailto:accueil@simop.fr)

### 1.10.2. Maintenance requirements

For all maintenance operations carried out on a BIONUT2 compact filter and an all-water tank, make sure to respect the following health and safety precautions, as well as those specified in paragraph 1.3 of this guide:

- Protective gloves must be worn,
- Wear appropriate clothing (short sleeves and shorts are not recommended).

The lids must be closed after any intervention. It is reminded that the lids must remain accessible for maintenance (e.g. emptying of the septic tank).

When servicing a BIONUT2 compact filter, the operations listed in the maintenance contract (paragraph 1.10.8) must be performed by a competent person (qualified professional).

These operations must be carried out on the BIONUT2 compact filter every 2 years, with annual verification of correct operation.

Table 12: Summary of maintenance operations

Element	Criterion	Result	Actions to be taken
Feed box (trough + distributor)	Cleanliness control	Compliant	No
		Not in compliance	- equipped with PPE, remove the extractable materials - clean with water until proper operation is restored.
Compartment trough	Cleanliness control	Compliant	No
		Not in compliance	- equipped with PPE, extract the materials that block the flow - clean with water - check the tilting of the trough and the homogeneous feeding of the ramp
Filter surface	Cleanliness control (= absence of film on the whole surface)	Compliant	No
		Not in compliance	- scarify the surface of the filter with a rake until the film is removed (disassembly of the ramps is not mandatory and precautions are taken to avoid their breakage) - visual verification of the effluent from output.
Filter	Absence of clogging and presence of outlet flow	Compliant	No
		Not in compliance	If there is no automatic control of water stagnation in the filter, proceed to the weekly control of the good flow of water at the outlet and of the non-surface stagnation of the media.

The all-water tank and the prefilter must be maintained according to the recommendations of the modified decree of September 7, 2009.

The prefilter should be checked annually to ensure that the tank is functioning properly. The mesh or filtering material should be cleaned with a jet of water over the tank following the manufacturer's instructions.

### 1.10.3. Prevention of filter clogging and replacement of filter media

The respect of the installation conditions, the maintenance instructions and the normal conditions of use allow a durable functioning of the compact filter of the compact filter.

If, despite all these precautions, a clogging should occur, please contact our after-sales service who will first analyze the causes of this clogging and proceed to the renewal of the filtering media if necessary.

The hazelnut shells are replaced after a minimum operating period estimated at 10 years by SIMOP, based on its field experience, under nominal load conditions. This period may be longer, depending on the use of the house or premises (underload, partial or secondary residence, ...).

The gravel pack is pumped out by an approved emptier. The hazelnut shells will then be recycled by the emptier to an approved composting center.

The tank should be hosed down. The new media will be put in place by the technician.

#### 1.10.4. Sludge production

The sludge production calculated on the basis of the 10-month treatment efficiency test depends on the pit used upstream of the BIONUT2 compact filter(s).

A production of  $0.23 \text{ m}^3/\text{year}/\text{PE}$  was calculated on the basis of the 10-month treatment efficiency test of a BIONUT2 pit and filter system.

#### 1.10.5. Emptying procedures

*The total emptying of the all-water tank (AWS) installed upstream of the BIONUT2 compact filter(s) must be carried out (excluding the maintenance contract) when the height of sludge reaches 50% of the volume of this pre-treatment unit.*

*The emptying must be carried out by an approved service provider in accordance with the modified decree of September 7, 2009, defining the terms of approval of persons carrying out emptying and taking charge of the elimination of the extracted materials.*

*The emptying vehicle must park at least 5 meters from the tank and the compact filters.*

The tank containing the compact filter should not be emptied unless the media is replaced as mentioned in Table 11: Lifetime of the main components components

The emptier will then draw up a follow-up slip for the empties materials, to be attached to the empties follow-up table, proposed in

1.10.10. In the case of a system installed in a ground with a water table, it is imperative to lower the water table with the help of the piezometer installed during the installation, in order to avoid any deformation of the pit. The pit must be filled with clear water after emptying.

The height of sludge in the pit can be measured with a sludge probe or a gauge (not supplied). It will be necessary to refer to the characteristics of the AWS set up and to the corresponding 10 months tests to know the emptying heights which correspond to a filling of the volume to 50% of sludge.

The emptying frequencies in the table below are estimated on the basis of the test carried out on the treatment efficiency of the all-water tank system, followed by a BIONUT2 compact filter (production of  $0.23 \text{ m}^3/\text{year}/\text{PE}$ ) and the generic volumes indicated in tables 7 to 9.

Table 13: Examples of pit emptying frequencies

Generic useful volume of the pit	50% Generic VU (m <sup>3</sup> )	Frequency (months)
3,00	1,50	21
3,00	1,50	21
3,00	1,50	17
3,00	1,50	14
3,00	1,50	14
4,00	2,00	14
4,00	2,00	14
5,00	2,50	14
6,00	3,00	14
6,00	3,00	14
8,00	4,00	14
10,00	5,00	15
10,00	5,00	14



SIMOP strongly advises to carry out a first sludge level control 1 year after the commissioning or the previous emptying.

#### 1.10.6. Valuation of wear parts

The materials used in the composition of the BIONUT2 compact filter (plastic, stainless steel 304, hazelnut shells) have been chosen to avoid any risk of corrosion or premature degradation, and thus guarantee a long-lasting operation.

All the materials used are recyclable. Polyethylene (tank, pads), PVC, hazelnut shells are re-usable in a specialized channel. All wearing parts will be deposited in a waste disposal center.

#### 1.10.7. Good practices for a good operation

For the user the control of the installation consists, on average, of a once a year, to :

- Check the good flow upstream and downstream of the die and the absence of clogging of the filter,
- Call in a drainer if necessary.

The design of the product has been made to guarantee you an optimal functioning during the whole life of the product as long as our prescriptions of installation, maintenance and use have been scrupulously respected.

There are indicators that can be used to detect a possible malfunction.

For any intervention on the device, make sure to respect the safety rules published in § 1.3.

Table 14: Malfunctions and corrective actions by a professional or the user

Problems	Possible causes	Solution
Poor water flow inside the building.	Obstruction of service boxes.	Check the flow in the connection.
	Obstruction of the entrance of the all water tank.	Check the flow at the entrance of the pit all waters.
Poor drainage at the service boxes.	Accumulation of materials.	Equip yourself with the appropriate personal protective equipment and remove the accumulated material.
Poor flow at the from the entrance of the pit.	Accumulation of materials.	Involve a qualified professional to : - release the material with a ferret or by cleaning, - check the height of the sludge and the cap, then drain if necessary.
Bad flow at the exit of the pit.	Clogging of the prefilter.	Put on the appropriate personal protective equipment and clean the prefilter according to the procedure described in this guide (paragraph 1.10.2).
	All water tank to be emptied.	Have a qualified professional check the height of the sludge and the cap, then drain.
Poor flow out of the filter or water rising in the drain vent.	Rise in water load in the soil downstream of the die.	The filter is not intended for installation in flood-prone areas. Wait for the water level in the soil to drop and check if the problem persists. If the problem persists, refer to other possible causes of the problem.
	Clogging of the drain of treated water.	Have a qualified professional remove the material with a ferret or by flushing.
	Clogging of the gravel pack.	Refer to the line " <i>Filter media clogging</i> ".

Problems	Possible causes	Solution
Strong odor near the filter.	Poor sewage flow.	Refer to the 5 cases of "bad flow...".
	Ventilation problem.	Monitor ventilation compliance (no non-conformances during the facility commissioning visit) and remedy the non-conformance if necessary.
		Check the good condition of the ventilations and if necessary, clean them.
Blocking of the mobile trough.	Accumulation of material in the trough box.	Put on the appropriate personal protective equipment and hose down the trough box and moving part to remove accumulated material.
Clogging of the filter media.	Surface clogging.	Put on the appropriate personal protective equipment and proceed with the surface scarification of the bed.
	Deep clogging.	If scarification does not solve the problem, have a qualified professional remove and replace the filter media if necessary.
In case of multiple filters, very unequal distribution of effluents on each of them.	Anomaly in the installation of the distribution manhole.	Check that the manhole is installed horizontally and, if necessary, have the installer correct the defect.
Poor water quality in exit from the pipeline.	Discharge of products at the entrance of the die that can lead to malfunctions.	Refer to Table 1: List of products that should not be thrown away.
	Malfunction of the trough.	Refer to the line " <i>Blocking of the trough mobile</i> ".
	Temporary hydraulic underload or overload.	Wait for a return to normal and the restoration of the nominal load of pollution to be treated.

### 1.11. Installation cost over 15 years

In the following tables (Table 15, Table 16, Table 17), the costs are evaluated on the basis of the prices prevailing at the time of the publication of the user's guide.

The investment is an estimated price including the purchase cost of the BIONUT2 compact filter, the transport cost, the cost of implementation, installation (excluding upstream and downstream connections) and commissioning, on a working basis of 0.5 to 2 days for the BIONUT2 compact filter (depending on the model), under normal installation conditions.

The costs of the all-water tank (not supplied) upstream of the BIONUT2 compact filter include :

- Initial investment (tank, transport, implementation)

Maintenance operation: the all-water tank upstream of the BIONUT 2 compact filter requires an annual cleaning of the prefilter and an emptying of the sludge when the height of sludge reaches 50% of the useful volume of the tank (see section 1.10.5). For the emptying costs, they are estimated on the basis of fixed costs of 190 € HT per emptying + 20 € HT/m<sup>3</sup> of evacuated sludge, according to the frequency mentioned for the different models of the range.



*Redonnons le meilleur à la terre*

# Guide for installation and handling



## 2. Installation and handling guide

### 2.1. Safety information

All installation, hydraulic and electrical connection and commissioning operations must be carried out by qualified personnel.

To guarantee the structural behaviour of the tanks, it is imperative to respect the conditions of implementation described below.

**Safety of persons:** The access covers are closed and lockable (screw-in or securely installed plugs). Their design allows them to support an accidental load. A pictogram forbidding walking on the buffers is engraved on the surface of the buffers as a prevention measure.

During the excavation, the protection of the operators must be done in accordance with the national regulations, in paragraph 1.3 of this guide and in particular, the wearing of PPE (personal protective equipment) must be respected in order to avoid any direct or indirect contact with the wastewater: gloves, shoes, safety glasses.

### 2.2. Implementation and installation

#### 2.2.1. Transport on the plot

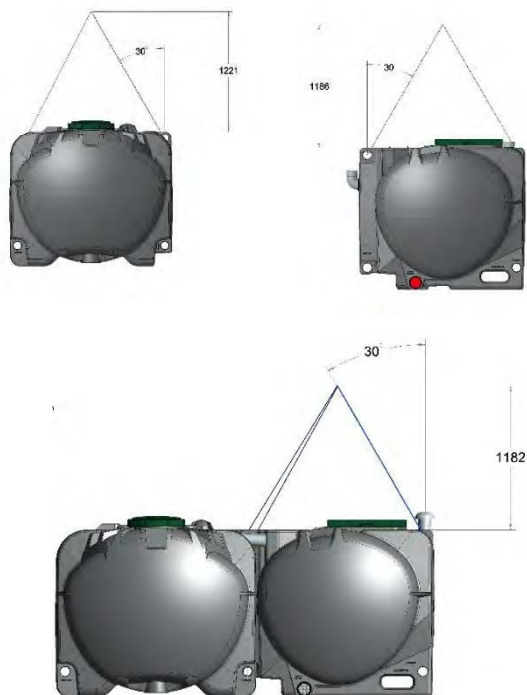
The BIONUT2 compact filters are delivered pre-assembled from the factory. All the tanks require appropriate equipment for their transport and handling on the plot (refer to the attached instructions).

During unloading and installation, the tanks must be lifted by a handling device suitable for the size of the tank (see Table 7). Use the lifting devices provided on the top of the tank for this purpose.

The strength of each sling must be at least 1 ton.

The angle should be less than 30° from the vertical. Make sure to respect the safety rules in force. It is imperative to respect a safety perimeter free of any load.

If necessary, only a professional approved by SIMOP can install the filtering media on site, as SIMOP is responsible for the assembly on site, in accordance with the CE marking rules.



*Figure 18: Handling of a compact filter alone*

### 2.2.2. Place of installation

The studies of the parcel must be carried out in accordance with the regulations in force in order to evaluate the constraints related to the nature of the ground.

The implementation of the filter must respect the following recommendations:

- Within 20 m of the house
- More than 3\* m from any structure with foundations,
- More than 3 m from any tree or plant with a significant root system,
- More than 3 m from any neighborhood boundary,
- More than 35 m from any water catchment, declared to be used for human consumption.
- Any static or rolling load is forbidden in the immediate vicinity of the BIONUT2 compact filter or of the all-water tank (, not supplied), i.e. at less than 3 meters.
- The die may not be installed, even partially, nor in the house or in a garage or cellar.

\* these *distances are recommendations. For any deviation, the installation will be done under the full responsibility of the installer, after a specific study on the performance of the structures, by a specialized engineering office.*

### 2.2.3. Conducting the search : common rules

The BIONUT2 compact filter and the all-water tank must be buried in accordance with the DTU 64.1 (paragraphs 6.4.2, 6.4.2.1, 8.3.2.2) and the NF P 98-331 standard.

The all-water tank must be buried and can be installed on any type of plot with or without permanent or temporary water table (according to the CE marking declaration of the tank specifying the installation in dry or wet conditions, as well as the maximum height of the water table in case of wet conditions).

The recommendations for the installation of the all-water tank are to be found in the installation instructions supplied with the tank.

The depth of the excavation being superior to 1.30 m, the protection of the operators must be done in accordance with the regulations in force.

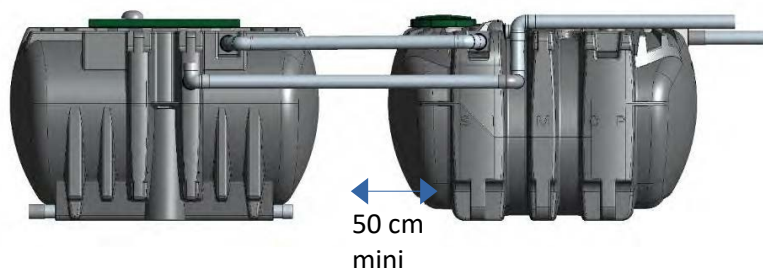
The earthwork must be done in such a way as to obtain a minimum of 20 cm of space all around the tank. Refer to the dimension tables (paragraph 1.6 : Technical and dimensional characteristics ). For each equipment, the maximum depth of the excavation will be equal to :

**The height of the equipment + 10 cm of sand or gravel bed 2/4 or 4/6 mm (or the thickness of the invert in case of water table) + the laying bed (if invert) + the maximum height of the backfill authorized for this equipment.**



All elements encountered at the bottom of the excavation and likely to constitute hard points must be removed.

**The tanks are laid at a minimum distance of 50 cm from each other. The horizontality of the bed and the tanks before backfilling must be checked.**



Simultaneously fill the tank with clean water and backfill with sand or with 2/4 or 4/6 mm gravel up to the inlet water line in accordance with DTU 64.1 (paragraph 8.3.3.2), proceeding with hydraulic compaction in 50 cm increments for the sand.

For installations in difficult soil or in the presence of groundwater, refer to paragraphs 2.2.4, 2.2.5 and 2.2.5. **Compaction by mechanical means is not allowed.**

Complete the backfill (20 centimeters) with topsoil cleared of all stony or sharp elements, up to the level of the covers in accordance with DTU 64.1 (paragraph 8.3.3.4). **The maximum backfill above the die can reach 60 cm** (Table 7, Table 8, Table 9). When backfilling, make sure to leave the covers accessible for maintenance operations. The details of the implementation of the risers are specified in §1.4.3.

All plugs and closures shall be exposed and flush with the finished grade without allowing runoff to enter in accordance with DTU 64.1 (paragraph 10.1.4).

#### 2.2.4. Installation on permeable ground without water table

Cover the bottom of the excavation with a 10 cm thick bed of sand or material with a grain size of 2/4 or 4/6 mm, perfectly level and compacted before placing the tank.

Check the horizontality of the tank and the hydraulic connections.



Figure 19: Cross-section of the installation in normal terrain

**Caution: Do not fill the compact filter with water!**

### 2.2.5. Installation in groundwater and/or clay soilat

In the event of the presence of a water table, a design office must carry out a specific study.

During the work, keep the water table below the level of the invert. Place a geotextile around the entire periphery of the excavation.

Create a concrete slab of <sup>at least</sup> 200kg/m<sup>3</sup> (in accordance with DTU 64.1, section 8.3.2.2), reinforced with a sufficiently strong rigid welded mesh (or any other equivalent system allowing the tank to be moored and held in place in the event of pressure from the water table). This device will be composed of lateral bars on which the straps will be fastened without excessive tension. The straps will pass through the anchoring bridges provided for this purpose, in the lower part of the tanks.

The characteristics of the invert (dimensions, thickness, reinforcement...) must be sized by a professional in order to meet the specific constraints for which it is intended.

Install a piezometer (315 mm diameter PVC pipe) to measure the water table and to allow it to be lowered if necessary during emptying operations.

Then refer to the common rules in §2.2.3.

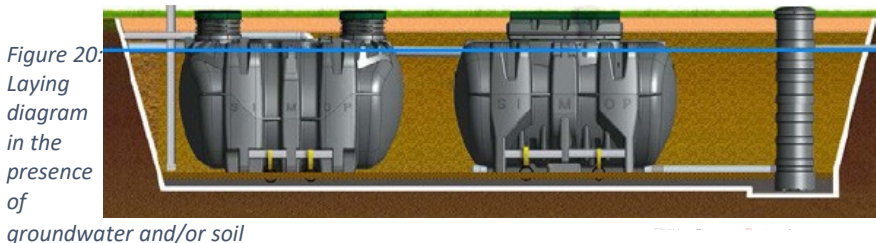
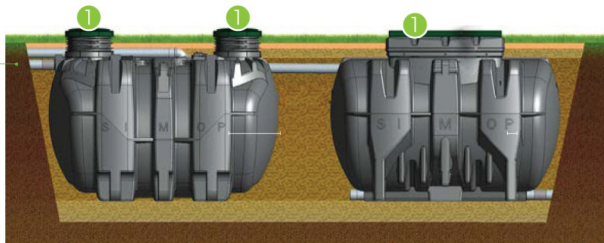


Figure 20: Laying diagram in the presence of groundwater and/or soil

→ **With extension shafts:**

Topsill height 20 cm max

1. Adapted extension shafts



### 2.2.6. Installation in difficult terrain

It is imperative to respect the terms of implementation particularly in the following

situations: Unstable and/or silty soil

In case of installation in an unstable and/or silty ground, it is necessary to carry out the lateral backfill and the bottom of excavation with sand stabilized at 200 kg/m<sup>3</sup> minimum, to be confirmed by a specialized engineering office

#### Flood zone

The BIONUT2 compact filter is not intended to be installed in flood-prone areas, as defined by the technical decree.

However, the installation is possible on a zone likely to be exceptionally flooded. Since installation in a permanently flooded area is forbidden, the installation methods must be studied beforehand by an engineering office to avoid this.

#### Sloping ground (> 5%)

It is necessary to avoid installation in a low point of the ground, or if necessary to foresee the installation of a drainage system upstream of the tank in order to evacuate the runoff water. Depending on the nature of the soil, it may be necessary to build a retaining wall with side and end backfill as described in 2.2.3 of this guide concerning installation conditions in normal terrain.

#### Passage and parking of vehicles, storage areas, or embankments at less than 3 meters

If a vehicle passes over or near the tank or if there is a static load, a load distribution slab should be made of heavily reinforced concrete, resting on the natural undisturbed or stabilized ground, with suitable hydraulic buffers (class B125 according to EN 124, not supplied by SIMOP). The slab must not rest on the tank or on any of the accessories of the device.

Note ; In the cases mentioned above, when it is necessary to build a retaining wall and/or an anchoring or load distribution slab, a complete study must be carried out in order to define the technical characteristics of these works (dimensions, composition, structure, etc.). This study will have to take into account the external factors (presence of water table, nature of the ground, lateral thrust, etc.) and will have to be carried out by a specialized engineering office.

### 2.3. Realization of the hydraulic connections

The compact filters must be connected hydraulically with DN100 PVC pipe. The pipes must be glued into the inlet and outlet sockets provided for this purpose so that the connections are watertight. These connections are made by the company responsible for the installation following the instructions described in this guide. The effluent inlet and outlet pipes must have a slope of 2% to 4% (be careful to take into account the settlement of the ground). The evacuation of treated water must be carried out in accordance with the modified decree of September 07, 2009.

### 2.4. Realization of the electrical connections

The BIONUT2 compact filters do not require an electrical connection, except in the case of a non-gravity outlet, where the installation of a lifting station (not approved) will require the intervention of a qualified installer.

### 2.5. Cases requiring a lifting device (not approved)

The station, which complies with standard EN 12050-2 in wet conditions, according to article 4.4 of DTU 64.1 P1-2, and is CE marked, will be installed downstream of the system in accordance with article 6.3 of DTU 64.1 P1-1 (precautions to be taken to avoid the tank rising).



*Figure 21: Examples of pumps that can be used for lifting (not approved)*

The lifting device (not approved) can be equipped with a pump with a side float (see Figure 21). The pump connection can be rigid or flexible. The physical characteristics of the pumps will be adapted according to the altimetric configuration of the site.

The device (except approval) will be connected to the tank only by the pipe, and the connections of the effluent pipes will be carried out in a tight way (the junction between the filter and the lifting device (except approval) will be implemented in order to avoid any infiltration of water, particularly at the time of a rise of water table).

In this case, the electrical connection will comply with the NFC15-100 standard.

All precautions shall be taken to prevent tank rising, including:

- the invert will be installed under the filter + pipes + lifting station with an adapted strapping system,
- the station must be designed to withstand the water table,
- the piezometer tube must allow to check the watertightness between the filter and the pumping station, during the annual verifications.

## 2.6. Ventilation device

Naturally, the decomposition and digestion of organic matter in the septic tank produces gases (  $\text{CH}_4$  and  $\text{H}_2\text{S}$  ) that must be evacuated because of their toxicity at high concentrations. This is why this work must be done by a professional.

The air intake and the extraction of fermentation gases comply with the NF DTU 64.1 standard and the technical decree.

The all-water tank (not supplied) must include 2 ventilations: a primary ventilation and a secondary ventilation which must be in conformity with the NF DTU 64.1 standard and the modified decree of September 7th, 2009.

The air inlet of the compact filter (in DN100) is equipped with an anti mosquito of adapted mesh.

Fermentation gases must be evacuated by an independent ventilation system equipped with a static or wind extractor located 0.40 m above the ridge and at least 1 m from any opening and any other ventilation.

The extraction pipe should be routed as straight as possible, without slopes, preferably using bends less than or equal to 45°.

The illustrations below show the connection points for the primary and secondary ventilation on the die and the layout of the air supply and exhaust.

→ **Aligned installation**

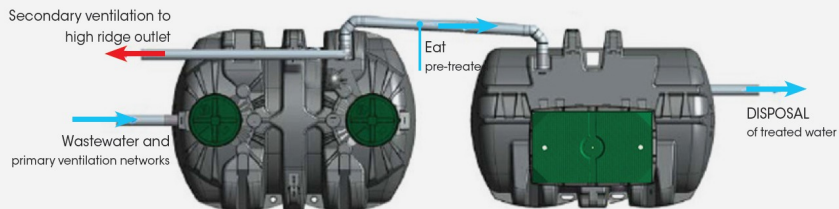


Figure 22: Fresh air intake and secondary ventilation (6 PE model)

→ **Packaged installation**

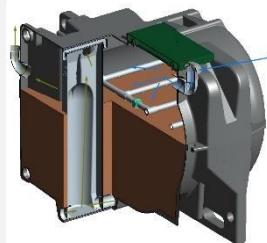
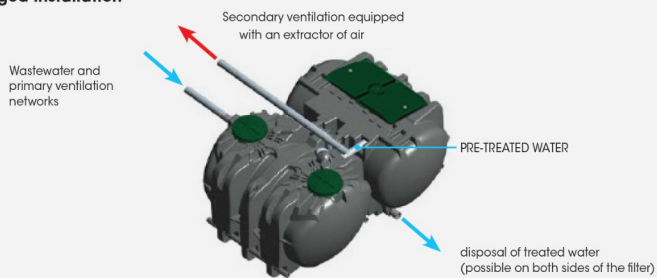
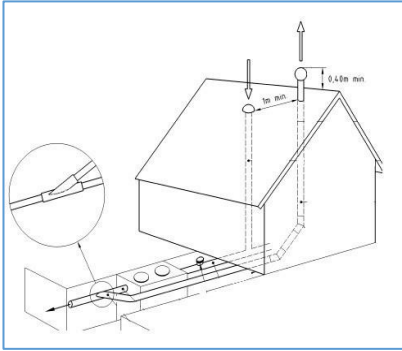


Figure 23: Cross-section of the aeration of the compact filter (6 PE model)

Note : the tapping for the high ventilation can be made upstream or downstream of the pits all according to the recommendations of the manufacturers.



*Figure 24: Ventilation connection at the ridge*



## 2.7. Acceptance of work

Nom et coordonnées de l'entreprise : ..... .....	Nom et coordonnées du maître d'ouvrage : ..... .....
Nom et référence du dispositif de traitement : .....	
Numéro de série du dispositif de traitement : .....	
<b>Procès-verbal de réception des travaux</b>	
Je, soussigné : .....	
Maître d'ouvrage, après avoir procédé à la visite des travaux d'assainissement non collectif en présence de l'entreprise citée ci-dessus, déclare que :	
<input type="checkbox"/> la réception est prononcée sans réserve avec effet en date du : .....	
<input type="checkbox"/> la réception est prononcée avec réserve avec effet en date du : ..... assortie des réserves mentionnées dans l'état ci-dessous.	
<input checked="" type="checkbox"/> atteste avoir reçu les conditions d'usage et d'entretien de l'installation ainsi qu'un schéma coté de l'installation.	
Les garanties et le transfert de l'ouvrage prennent effet à compter de la signature du présent procès verbal.	
<b>État des réserves</b>	
Nature des réserves : .....	
Travaux à exécuter : .....	
Délais : .....	
L'entreprise et le maître d'ouvrage conviennent que les travaux nécessités par les réserves ci-dessus seront exécutés dans un délai global de : ..... à compter de ce jour.	
Fait à : ..... Le : .....	
En ..... exemplaires (dont l'un est remis à chacune des parties) <b>Signatures :</b>	
L'entreprise :	Le maître d'ouvrage :
.....	
<b>Procès-verbal de réception des travaux</b>	
Le maître d'ouvrage et l'entreprise, ci-contre désignés, constatent qu'il a été valablement remédié aux ré-serves mentionnées dans le procès-verbal de réception en date du : .....	
Fait à : ..... Le : .....	
En ..... exemplaires (dont l'un est remis à chacune des parties) <b>Signatures :</b>	
Le maître d'ouvrage :	L'Entreprise :

## 2.8. Commissioning of the BIONUT2 compact filter

The compact filter can only be put into operation after the following steps have been completed:

- Laying and backfilling,
- Watertight hydraulic connection of the inlet and outlet,
- Connection of the ventilations,
- Electrical connection.

Commissioning is an important operation to validate the proper functioning of the installation. It must be carried out by a qualified professional who is part of the partner installer network or a company approved by SIMOP. It is supplied with the product.

The BIONUT2 compact filter can be used and installed without any adjustments, whether in a second home or in a primary residence.

Important the commissioning report must be returned, signed and accompanied by a copy of the acceptance of work also signed to : **SIMOP** - 10 rue Richedoux - 50480 Sainte-Mère-Eglise

The points controlled, on the whole of the die, are the following ones:

### **Channel Environment:**

	TRU E	FALS E
The backfill was made with sand or gravel with respect to the granulometry.	<input type="checkbox"/>	<input type="checkbox"/>
The die is installed OUTSIDE the flood zone.	<input type="checkbox"/>	<input type="checkbox"/>
The system receives only wastewater (no runoff).	<input type="checkbox"/>	<input type="checkbox"/>
The natural or reconstituted soils in the vicinity (3 m) and the slopes do not cause any overloading of the system.	<input type="checkbox"/>	<input type="checkbox"/>
No static or rolling loads exist in the vicinity (less than 3 m) of the tank ( <i>without load bearing slab</i> )	<input type="checkbox"/>	<input type="checkbox"/>
The tank is level.	<input type="checkbox"/>	<input type="checkbox"/>
The risers used are SIMOP brand and are adapted to the product.	<input type="checkbox"/>	<input type="checkbox"/>

### ***Hydraulic connections :***

	<b>TRU E</b>	<b>FALS E</b>
All the hydraulic connections outside the tanks are made with drain pipes DN100 minimum and in a watertight way.	U	U
There is no counter slope on the connection pipes, neither upstream nor downstream of the die. The minimum slope of 2% is respected and 2 ‰ downstream.	U	U
Operation of the filter trough : - the cover opens and closes freely, - the mobile part of the trough is complete (head + hose) and fixed to the tank, - the watering of the trough compartment takes place normally, - the trough is triggered when the water reaches the top of the compartment, - the bucket floats automatically at the end of the hunt.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> U	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> U
Operation of the effluent distribution : - the cover opens and closes freely, - the distribution network is horizontal and above the gravel pack, - when the trough is activated, the effluent flows over the entire ramp.	<input type="checkbox"/> <input type="checkbox"/> U	<input type="checkbox"/> <input type="checkbox"/> U
There is a manhole or a lifting station downstream of the system.	U	U

### ***Ventilation connections:***

	<b>TRU E</b>	<b>FALS E</b>
All the ventilations connected to the tanks are carried out by drain pipes DN 100 minimum and in a tight way.	U	U
The primary ventilation is connected through the wastewater drop pipe to the open air and above the living quarters.	U	U
The secondary ventilation is connected to the pit and the filter, then raised above the ridge (0.4 m) and equipped with a static or wind extractor (see NF DTU 64.1).	U	U

**Accessibility:**

	TRU E	FALS E
The set of covers is : - accessible, - lockable.	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
If there is a load-bearing slab, the hydraulic buffers provide sufficient access to all compartments.	<input type="checkbox"/>	<input type="checkbox"/>

**Owner information:**

	TRU E	FALS E
At the end of this commissioning, the owner of the installation has received and taken note of : - the user's guide (use, maintenance, installation), - warranty conditions. - of the maintenance contract	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
At the end of this commissioning, the owner signed the acceptance of work without reservation.	<input type="checkbox"/>	<input type="checkbox"/>

## 2.9. Sample collection device.

Spot or continuous sampling over 24 hours, within the framework of regulatory controls, can be done in the sampling chamber integrated into the compact filter (except for the 8PE) and accessible through the rectangular plug.

The installation of 24 h sampling must be carried out by a professional, according to an adapted protocol. The installation of the BIONUT2 compact filter must respect the following recommendations:

- Install an automatic sampler in the immediate vicinity of the manhole < 2 m,
- Insert the suction strainer into the sampling chamber. Be careful, the suction strainer must not be at the bottom of the manhole or on the surface of the water.

When setting up the sampling, PPE (personal protective equipment) must be worn to avoid contact with the wastewater.

Sampling window

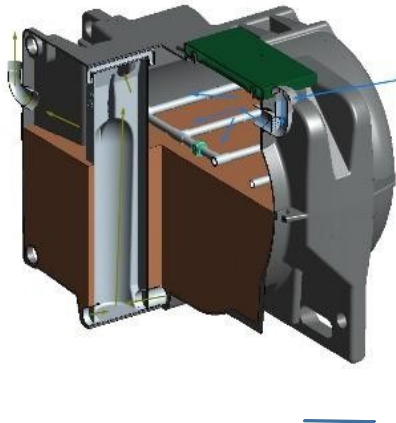


Figure 25: Device for taking samples at the outlet of the compact filter

### 3. Quality Certificates



**intertek**  
Total Quality. Assured.

# CERTIFICAT D'ENREGISTREMENT

**Le Système de Management de :**

F2F

Site principal : 10 Rue Richedoux,  
50480 Sainte-Mere-Eglise, France.

Se référer à l'annexe pour la liste des sites et leurs champs de certification spécifiques.

**a été enregistré par Intertek comme étant conforme aux exigences de la norme :**

ISO 9001:2015

**Le Système de Management est applicable à :**

Conception, fabrication et commercialisation de produits et d'équipement pour le traitement de l'eau.

**Certificat n° :**  
0080566-01

**Date de certification initiale :**  
28 septembre 2015

**Date de certification :**  
04 septembre 2018

**Date d'émission du certificat :**  
04 septembre 2018

**Date d'expiration :**  
27 septembre 2021



**cofrac**  
ACCREDITATION  
COFRAC  
NF 45014  
PORTÉE  
DIPOURNEE SUR  
www.cofrac.fr

CERTIFICATION  
DE SYSTEMES  
DE MANAGEMENT



**Calin Moldovean**  
Président, Business Assurance

Intertek Certification France, 67, boulevard  
Bessières 75017 Paris - France



L'émission de ce certificat n'engage la responsabilité d'Intertek envers aucun tiers autre que le client, enregistrement selon les termes définies par le contrat. La validité du présent certificat est soumise au maintien de la conformité du système de l'organisation par rapport aux règles de certification du système d'Intertek. Sa validité peut être confirmée sur demande par email à [certificats.validation@intertek.com](mailto:certificats.validation@intertek.com) ou en scannant le code sur le droit avec un smartphone. Ce certificat est la propriété d'Intertek, à qui il devra être retourné en cas de demande.



## 4. APPENDICES



## APPENDIX I.A: Summary table of materials and characteristics for models up to 6 PE

		Range		BIONUT2	BIONUT2	BIONUT2	BIONUT2	BIONUT2
		Model of the range		BIONUT2/6054/04FS	BIONUT2/6054/04-1FS	BIONUT2/6054/05FS	BIONUT2/6054/06-1FS	BIONUT2/6054/06FS
Capacity (PE)				4	5	5	5	6
Number of compact filters				1x4FE	1x4FE	1x5FE	1x5FE	1x6FE
		Watertightness		Compliant	Compliant	Compliant	Compliant	Compliant
Primary treatment	All water tank	Structural behavior (pit test):	Authorized fill height at-top of the tank	≤0,6 m	≤0,6 m	≤0,6 m	≤0,6 m	≤0,6 m
			Authorized height of the water table from the base of the tank	≤1,25 m	≤1,25 m	≤1,25 m	≤1,25 m	≤1,25 m
		CF marking	Required	Required	Required	Required	Required	
Feeding device	Pre-filter	Treatment efficiency (hydraulic efficiency)		≤ 4.1 g of microbeads	≤ 4.1 g of microbeads	≤ 4.1 g of microbeads	≤ 4.1 g of microbeads	≤ 4.1 g of microbeads
	Box power supply	Brand						
Type								
Material		Not applicable	Not applicable	Not applicable	Not applicable	Not applicable		
System power supply (Bucket flush)	System power supply (Bucket flush)	Brand		SIMOP	SIMOP	SIMOP	SIMOP	SIMOP
		Type						
		Material		Integrated in the treatment tank	Integrated in the treatment tank	Integrated in the treatment tank	Integrated in the treatment tank	Integrated in the treatment tank
Treatment tank	Inlet/outlet piping	Brand		SIMOP	SIMOP	SIMOP	SIMOP	SIMOP
		Material		High density polyethylene (HDPE)	High density polyethylene (HDPE)	High density polyethylene (HDPE)	High density polyethylene (HDPE)	High density polyethylene (HDPE)
		Maximum access dimensions (mm)		470 x 920	470 x 920	470 x 920	470 x 920	470 x 920
Distribution system (distribution ramp)	Distribution system (distribution ramp)	Type		PVC pipe DN40	PVC pipe DN40	PVC pipe DN40	PVC pipe DN40	PVC pipe DN40
		Material		Polyvinyl chloride (PVC)	Polyvinyl chloride (PVC)	Polyvinyl chloride (PVC)	Polyvinyl chloride (PVC)	Polyvinyl chloride (PVC)
		Features		Integrated in the treatment tank, ramps arranged above the gravel pack	Integrated in the treatment tank, ramps arranged above the gravel pack	Integrated in the treatment tank, ramps arranged above the gravel pack	Integrated in the treatment tank, ramps arranged above the gravel pack	Integrated in the treatment tank, ramps arranged above the gravel pack
Filtering mass	Filtering mass	Number per tank		6	6	6	8	6
		Material		From bottom to top: 75 cm of hazelnut shells, drain surrounded by a geogrid and covered with a filter screen	From bottom to top: 75 cm of hazelnut shells, drain surrounded by a geogrid and covered with a filter screen	From bottom to top: 75 cm of hazelnut shells, drain surrounded by a geogrid and covered with a filter screen	From bottom to top: 75 cm of hazelnut shells, drain surrounded by a geogrid and covered with a filter screen	From bottom to top: 75 cm of hazelnut shells, drain surrounded by a geogrid and covered with a filter screen
		Features		Calibrated hazelnut shells 5-13 mm. Density: 410 Kg/m <sup>3</sup>	Calibrated hazelnut shells 5-13 mm. Density: 410 Kg/m <sup>3</sup>	Calibrated hazelnut shells 5-13 mm. Density: 410 Kg/m <sup>3</sup>	Calibrated hazelnut shells 5-13 mm. Density: 410 Kg/m <sup>3</sup>	Calibrated hazelnut shells 5-13 mm. Density: 410 Kg/m <sup>3</sup>
Fitrogrille	Fitrogrille	Sizing (m <sup>2</sup> /PE)		0,49	0,57	0,49	0,56	0,47
		Brand		Landolt	Landolt	Landolt	Landolt	Landolt
		Type		Landogrimp 9.1	Landogrimp 9.1	Landogrimp 9.1	Landogrimp 9.1	Landogrimp 9.1
Geogrid	Geogrid	Material		polypropylene	polypropylene	polypropylene	polypropylene	polypropylene
		Thickness (mm)		9	9	9	9	9
		Number per tank		1	1	1	1	1
Network of collection	Network of collection	Brand		Flexinub	Flexinub	Flexinub	Flexinub	Flexinub
		Type		Flexinub separation geogrid	Flexinub separation geogrid	Flexinub separation geogrid	Flexinub separation geogrid	Flexinub separation geogrid
		Material		High density polyethylene (HDPE)	High density polyethylene (HDPE)	High density polyethylene (HDPE)	High density polyethylene (HDPE)	High density polyethylene (HDPE)
Network of collection	Network of collection	Thickness (mm)		0,6	0,6	0,6	0,6	0,6
		Number per tank		1	1	1	1	1
		Type		PVC pipe DN100	PVC pipe DN100	PVC pipe DN100	PVC pipe DN100	PVC pipe DN100
Network of collection	Network of collection	Number per tank		1	1	1	1	1
		Features		Located BELOW the shell layer of hazelnuts	Located BELOW the shell layer of hazelnuts	Located BELOW the shell layer of hazelnuts	Located in the shell layer of hazelnuts	Located BELOW the shell layer of hazelnuts



APPENDIX I.B: Summary table of materials and characteristics for models from 8 to 12 PE

## APPENDIX I.C: Summary table of materials and characteristics for models from 16 to 20 PE

Gamme		BIONUT2	BIONUT2	BIONUT2	BIONUT2	BIONUT2	
Modèle de la gamme		BIONUT2/6054/08-1FS	BIONUT2/6054/08FS	BIONUT2/6054/10FS	BIONUT2/6054/12-1FS	BIONUT2/6054/12FS	
Capacité (EH)		8	8	10	12	12	
Gamme		BIONUT2		BIONUT2		BIONUT2	
Modèle de la gamme		BIONUT2/6054/16FS		BIONUT2/6054/18FS		BIONUT2/6054/20FS	
Capacité (EH)		16		18		20	
Nombre de filtres compacts		2x8EH		3x6EH		4x5EH	
Traitement primaire	Fosse toutes eaux	Etanchéité à l'eau		Conforme		Conforme	
		Comportement structurel (essai dit pit test) :	Hauteur de remblai autorisée au-dessus de la cuve		≤0,6 m		≤0,3 m
			Hauteur de nappe autorisée depuis la base de la cuve		≤1,98 m		≤2,03 m
		Marquage CE		Requis		Requis	
Préfiltre	Efficacité du traitement (efficacité hydraulique)		≤ 4,1 g de microbilles		≤ 4,1 g de microbilles		
Dispositif d'alimentation	Boîte d'alimentation	Marque		SIMOP		SIMOP	
		Type		REP2/04/04		REP2/04/04	
		Caractéristiques		1 entrée - 2 sorties (tubes droits en PVC)		1 entrée - 3 sorties (tubes droits en PVC)	
	Matériau		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)		
	Marque		SIMOP		SIMOP		
	Type		Intégré à la cuve de traitement		AF2/6016/055		
	Caractéristiques		Intégré à la cuve de traitement		Polyéthylène haute densité (PEHD)		
	Tuyauterie entrée/sortie		Tubes droits en PVC		Système d'alimentation secondaire intégré à chaque filtre		
	Marque		SIMOP		Tubes droits en PVC		
	Type		SIMOP		SIMOP		
Cuve de traitement	Matériau		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)		
	Tuyauterie entrée/sortie		Tubes droits en PVC		Tubes droits en PVC		
	Dimensions accès maxi (mm)		470 x 920		470 x 920		
	Type		Tuyau PVC DN40		Tuyau PVC DN40		
Système de répartition (rampe de répartition)	Matériau		Polychlorure de vinyle (PVC)		Polychlorure de vinyle (PVC)		
	Caractéristiques		Intégré à la cuve de traitement, rampes disposées au-dessus du massif filtrant		Intégré à la cuve de traitement, rampes disposées au-dessus du massif filtrant		
	Nombre par cuve		8		6		
	Type		Tuyau PVC DN40		Tuyau PVC DN40		
Traitement secondaire	Massif filtrant	Matériau		De bas en haut : 75 cm de coquilles de noisettes, drain entouré d'une géo grille et recouvert d'une filto grille		De bas en haut : 75 cm de coquilles de noisettes, drain entouré d'une géo grille et recouvert d'une filto grille	
		Caractéristiques		Coquilles de noisettes calibrées 5-13 mm. Densité : 410 kg/m <sup>3</sup>		Coquilles de noisettes calibrées 5-13 mm. Densité : 410 kg/m <sup>3</sup>	
		Dimensionnement (m <sup>2</sup> /EH)		0,48		0,49	
	Filtro grille	Marque		Landolt		Landolt	
		Type		Landogrimp 9.1 polypropylène		Landogrimp 9.1 polypropylène	
		Épaisseur (mm)		9		9	
		Nombre par cuve		1		1	
	Géo grille	Marque		Flexirub		Flexirub	
		Type		géo grille de séparation		géo grille de séparation	
		Matériau		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)	
Épaisseur (mm)		0,6		0,6			
Réseau de collecte	Type		Tube PVC DN100		Tube PVC DN100		
	Nombre par cuve		1		1		
	Caractéristiques		Situé dans la couche de coquilles de noisettes		Situé SOUS la couche de coquilles de noisettes		

## APPENDIX II.A: Summary table of materials and dimensions for models up to 6 PE



## APPENDIX II.C: Summary table of materials and dimensions for models from 16 to 20 PE

Gamme Modèle de la gamme		BIONUT2		BIONUT2		BIONUT2			
		BIONUT2/6054/16FS		BIONUT2/6054/18FS		BIONUT2/6054/20FS			
Capacité (EH)		16		18		20			
Nombre de filtres compacts		2x6EH		3x6EH		4x5EH			
Dispositif d'alimentation		Fosse toutes eaux		Fosse toutes eaux		Fosse toutes eaux			
		Volume utile (m <sup>3</sup> )		6		8		10	
		Marque		SIMOP		SIMOP		SIMOP	
		Type		AF2/6016/05S		AF2/6016/05S		AF2/6016/05S	
		Matériau		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)	
		Caractéristiques		Système d'alimentation secondaire intégré à chaque filière		Système d'alimentation secondaire intégré à chaque filière		Système d'alimentation secondaire intégré à chaque filière	
		Forme		Cylindrique		Cylindrique		Cylindrique	
		DN tuyau entrée (mm)		100		100		100	
		DN tuyau sortie (mm)		100		100		100	
		Nombre de voies de sortie		1		1		1	
		Longueur (m)		0,74		0,74		0,74	
		Largeur (m)		0,41		0,41		0,41	
		Hauteur (m)		0,35		0,35		0,35	
		Hauteur utile (m)		0,29		0,29		0,29	
Volume utile (m <sup>3</sup> )		0,012		0,012		0,012			
Boîte d'alimentation		Marque		SIMOP		SIMOP			
		Type		REP2/04/04		REP2/04/04			
		Caractéristiques		1 entrée - 2 sorties (tubes droits en PVC)		1 entrée - 3 sorties (tubes droits en PVC)		1 entrée - 4 sorties (tubes droits en PVC)	
Matériau		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)			
Forme		Carré		Carré		Carré			
Système d'alimentation (Chasse à saug)		Marque		Intégré à la cuve de traitement		Intégré à la cuve de traitement			
		Type		Intégré à la cuve de traitement		Intégré à la cuve de traitement			
		Matériau		Intégré à la cuve de traitement		Intégré à la cuve de traitement			
		Caractéristiques		Intégré à la cuve de traitement		Intégré à la cuve de traitement			
		Forme		Intégré à la cuve de traitement		Intégré à la cuve de traitement			
		DN tuyau entrée (mm)		100		100		100	
		DN tuyau sortie (mm)		50		100		100	
		Nombre de voies de sortie		1		1		1	
		Longueur (m)		0,92		0,756		0,756	
		Largeur (m)		0,47		0,64		0,64	
Hauteur (m)		0,49		0,408		0,408			
Hauteur utile (m)		0,25		0,158		0,158			
Volume utile (m <sup>3</sup> )		0,057		0,0445		0,0445			
Cuve de traitement		Marque		SIMOP		SIMOP			
		Type		BIONUT2/08		BIONUT2/06		BIONUT2/05	
		Matériau		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)	
		Nombre de cuves		2		3		4	
		Longueur d'une cuve (m)		2,38		2,24		2,24	
		Longueur d'une cuve (m)		1,88		1,74		1,54	
Hauteur totale d'une cuve (m)		1,5		1,46		1,46			
Masse d'une cuve (kg)		1385		939		867			
Système de répartition (Rampe de répartition)		Type		Tuyau PVC DN40		Tuyau PVC DN40			
		Matériau		Polychlorure de vinyle (PVC)		Polychlorure de vinyle (PVC)			
Caractéristiques		Intégré à la cuve de traitement, rampes dissousées au-dessus du massif filtrant		Intégré à la cuve de traitement, rampes dissousées au-dessus du massif filtrant		Intégré à la cuve de traitement, rampes dissousées au-dessus du massif filtrant			
Nombre par cuve		6		6		6			
Massif filtrant		Matériau		De bas en haut : 75 cm de coquilles de noisettes, drain entouré d'une géogrigle et recouvert d'une filto grille		De bas en haut : 75 cm de coquilles de noisettes, drain entouré d'une géogrigle et recouvert d'une filto grille			
		Caractéristiques		Coquilles de noisettes calibrées 5-13 mm, Densité : 410 Kg/m <sup>3</sup>		Coquilles de noisettes calibrées 5-13 mm, Densité : 410 Kg/m <sup>3</sup>			
		Longueur massif par cuve (m)		2,36		2,22		2,22	
		Longueur massif par cuve (m)		1,86		1,72		1,52	
		Hauteur utile (m)		0,25		0,25		0,25	
		Surface utile totale (m <sup>2</sup> )		7,60		8,52		9,88	
Dimensionnement (m <sup>2</sup> /EH)		0,48		0,47		0,49			
Filtrogrille		Marque		Landolt		Landolt			
		Type		Landogrimp 9.1		Landogrimp 9.1			
		Matériau		polypropylène		polypropylène			
Épaisseur (mm)		9		9		9			
Nombre par cuve		1		1		1			
Géogrigle		Marque		Flexirub		Flexirub			
		Type		géogrigle de séparation		géogrigle de séparation			
		Matériau		Polyéthylène haute densité (PEHD)		Polyéthylène haute densité (PEHD)			
Épaisseur (mm)		0,6		0,6		0,6			
Nombre par cuve		1		1		1			
Réseau de collecte		Type		Tube PVC DN100		Tube PVC DN100			
		Nombre par cuve		1		1			
Caractéristiques		Situé dans la couche de coquilles de noisettes		Situé SOUS la couche de coquilles de noisettes		Situé SOUS la couche de coquilles de noisettes			



*Give the best back to earth*

FIND ALL OUR PRODUCTS ON  
[WWW.SIMOP.FR](http://WWW.SIMOP.FR)

- WASTE WATER
- RUNOFF WATER
- STORM WATER
- ROADS & NETWORKS
- SAFETY & STORAGE

10 RUE RICHEDOUX  
50480 SAINTE-MÈRE-EGLISE  
FRANCE

[export@simop.fr](mailto:export@simop.fr)

+33 (0)233 958 800

FOLLOW US ON

