



Appendix A: Installation

Installation principles for water treatment units:

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Installation of water treatment units

Polyethylene unit

ARONDE & ELLIPSE type [Appendix A-I]



INSTALLATION SHEET

IN052-F



The reference guide remains the one supplied with the unit

Handling:

Before handling, pump the wastewater in each compartment.

Polyethylene tanks are vulnerable to the impact of forklift truck forks, proceed with caution.

Do not push the unit by using the fork against the tank.

The unit should be handled using suitable lifting machinery.

For units with a lifting strap, **use all of the unit's lifting straps at the same time.**

Once suspended, the unit should be guided using ropes.

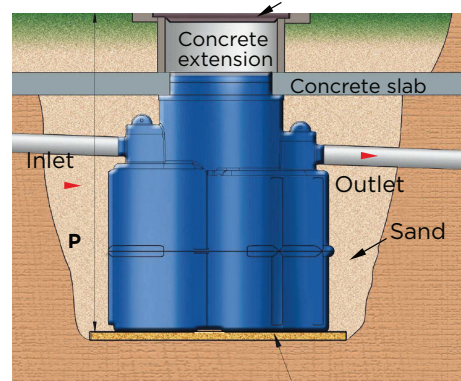
Receipt and storage:

- Visually inspect the body of the unit to make sure there is no damage.
If there are any defects, note reservations on the transport company's initialled slip
- Place the unit somewhere it is protected from impacts, and secure it. Do not allow rain to penetrate the unit.

Setup:

- Never fill the unit with water above ground.** If a filling seal check is required, do not fill until after step 5 of this guide. Then compare changes to the level 12 hours after filling with water.
- Do not use compacting equipment** to stabilise the unit's backfill.
- Do not rest the concrete element directly on the unit,** create an adapted base slab.
- Always place the unit on a bed of sand.**

Cast iron cover + frame sealed in concrete



5 to 10 cm bed of sand

Mechanical Strength:

- The unit's temperature should not exceed **30 °C** at any time.
- The cover manhole (BCE option) does not replace a cover.
- The unit is designed to resist backfilling static loads corresponding to the following depth limits:

ELLIPSE range: $P < 2.5m$; ARONDE range: $P < 2m$
(P dimension based in diagram opposite)

- Beyond the depths above, **a distribution slab must be created** (see stage 11) **to support the edges of the excavation.** *The structural dimensions of this slab will be calculated by a Civil Engineering design office.*
- If there is **vehicle traffic**, the **protection slab** is crucial regardless of depth.
- The presence of **specific dynamic loads** can sometimes require **peripheral reinforcement** in addition to the distribution slab *(see your Civil Engineering design office)*



Installation of water treatment units

Polyethylene unit

ARONDE & ELLIPSE type

[Appendix A-I - cont & end]



INSTALLATION SHEET

IN052F

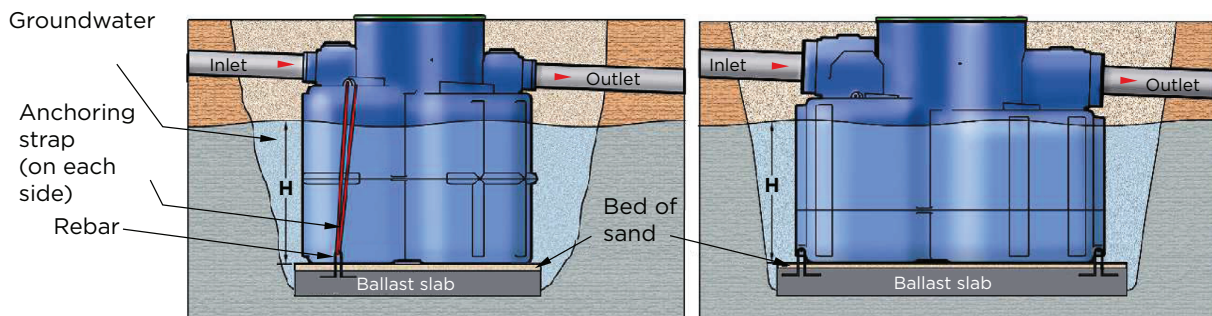


The reference guide remains the one supplied with the unit



The **ARONDE** range **cannot be installed in the presence of groundwater**.

Be aware of the presence of groundwater, hydromorphic ground or a layer of impermeable soil (rocky or clay). Any risk of excavation flooding makes steps 1 and 4 **crucial**. For the Ellipse range, the maximum groundwater level H is 750 mm if the cover (not extended) is at the ground level. If the unit is deeper, contact our design office to determine the limit dimension H.



Note about grease or starch separators:

These units are likely to cause bad odours. It is crucial that the inlet and outlet pipes are correctly ventilated.

Underground unit installation procedure:

- 1 - Stabilise the bottom of the excavation and ensure it is horizontal. If the unit needs to be anchored (see § "Mechanical strength"), create a concrete apron at the bottom of the excavation and include rebars. The weight of the concrete will be calculated to offset the buoyant force when the unit is empty.
- 2 - Create a 100 mm bed of sand on the bottom of the stabilised excavation.
- 3 - Position the unit after removing any protection.
- 4 - Anchor the unit using anchoring straps (optional). If the unit has one, use the fastening brackets provided for this purpose (see previous diagram).
- 5 - Backfill the unit with sand in layers of 300 mm maximum. Fill the unit at the same time to balance the water level with the backfill level.
 - Stabilise by spraying between each layer.
 - Take care with enclosed spaces
 - Continue to the pipe level.
- 6 - Connect the unit inlet, outlet and vent. Sleeves are provided for the PVC tube
- 7 - Connect the alarms, use sheaths to pass through cables.
- 8 - If needed, raise the float of the stopper when the final water level is reached and stable.
- 9 - Backfill with 10-14 gravel until the unit's manhole level is reached.
- 10 - Stabilise the backfilled area by spraying it.
- 11 - If required (see § "Mechanical Strength"): Cut the cap manhole (BCE) at the level of the groove with a knife. Create the load distribution slab.
- 12 - Fit any extensions and adjust them to the level of the finished ground.
- 13 - Backfill using the natural terrain.



Installation of water treatment units

Polyethylene unit ARONDE & ELLIPSE type

[Appendix A-I - cont & end]



INSTALLATION SHEET

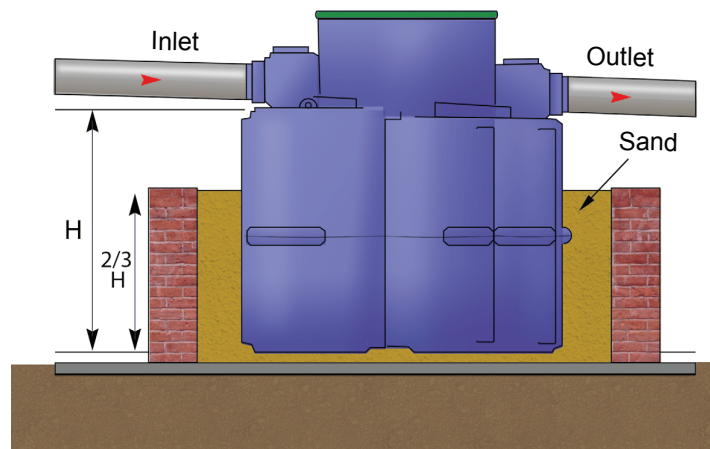
IN052F



The reference guide remains the one supplied with the unit

Raised unit installation procedure:

Note : The following references do not need a low retaining wall: EH0501, EH1001, EH2003, EH2501, EH3001, EH4003, ED0340, ED0480, EG0500, EG0501, EG1000, EG1001, EG2000, EG2500, EG3000, EG1501, EG1502.



- 1 - Ensure the ground is stable, flat and horizontal. If not, create a concrete apron.
- 2 - Create a walled enclosure whose dimensions match the diagram description below.
Keep a gap of 200 mm minimum between the tank and wall.
- 3 - Create a 100 mm bed of sand.
- 4 - Position the unit on the bed of sand after removing the protection.
- 5 - Backfill the lower part of the unit with sand in layers of 300 mm maximum.
 - Fill the unit at the same time to balance the water level with the backfill level.
 - Equalise and stabilise the backfill by spraying between each layer.
 - Take care with enclosed spaces.
 - Continue to the height of $2/3 H$.
- 6 - Connect the unit's inlet, outlet and any vents (crucial for units with a drain column). Sleeves are provided for the PVC tube.
- 7 - Connect the alarms.
- 8 - Finish filling the unit with water.
For an oil separator, raise the stopper float if applicable when the service water level is stable.



Installation of water treatment units

Grease separator POLYETHYLENE HG type [Appendix A-II]

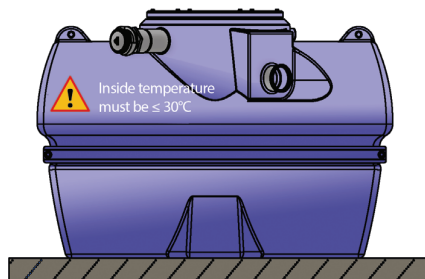
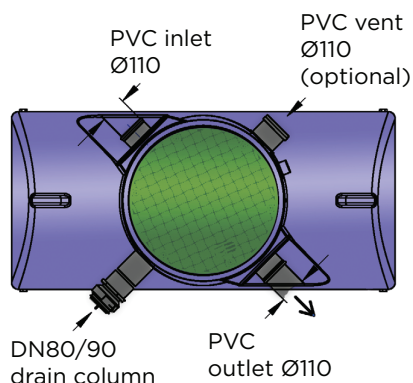


INSTALLATION SHEET

IN0508-A



The reference guide remains
the one supplied with the unit



Stable,
smooth and
horizontal ground
Tolerance = 5 mm
e.g. concrete apron

Receipt and storage:

- Visually inspect the body of the unit to make sure there is no damage.
If there are any defects, note reservations on the transport company's initialled slip
- Place the unit somewhere it is protected from impacts. Do not allow rain to penetrate the unit.

Handling:

- When handling, pump the wastewater.
- Polyethylene tanks are vulnerable to the impact of forklift truck forks. Do not push the unit by using the fork against the tank.
- For units with a lifting strap, use all of the unit's lifting straps at the same time.
- Once suspended, the unit should be guided.

Basic precautions:

- The unit's temperature should never exceed **30 °C** at any time.
- Grease separators are likely to cause bad odours. It is crucial to **ventilate the pipework upstream and downstream** pursuant to EN 1825-2.



Installation of water treatment units

Polyethylene unit EHR type [Appendix A-III]

Always respect notice IN052 on receipt of the unit.



INSTALLATION SHEET

IN062-A



The reference guide remains
the one supplied with the unit

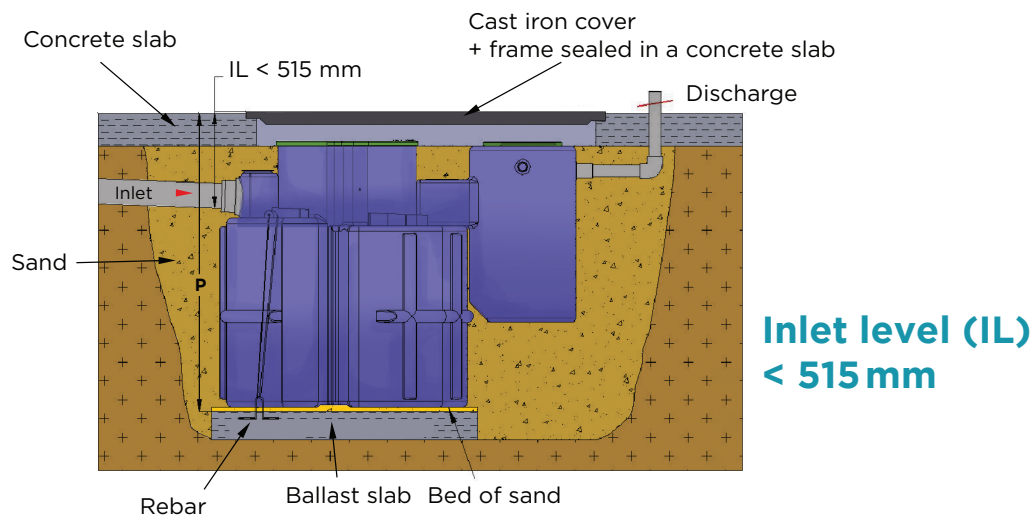
Electrical Installation

Electrical installation must include:

- Pump protection against excess current,
- Differential protection at start of the line.

Additional precautions for underground installation:

- 1 - Do not install the EHR separators in a raised position.
 - 2 - EHR0503C: the space located under the lifting compartment must be backfilled with care to support it perfectly.
 - 3 - Provide the connection:
 - DN50 PVC vent connection,
 - cable gland using a DN50 sheath.
 - 4 - The discharge must be created using pressure PVC.
 - 5 - The cover must allow access to the separator compartment and lifting compartment.
- If there is vehicle traffic:
- 6 a - Inlet Level < 515 mm: provide a surface concrete slab
 - 6 b - Inlet Level ≥ 515 mm: provide a supporting concrete slab on the edges of the excavation and supporting vertical loads.





Installation of water treatment units

Polyethylene unit

EHR type [Appendix A-III - cont & end]

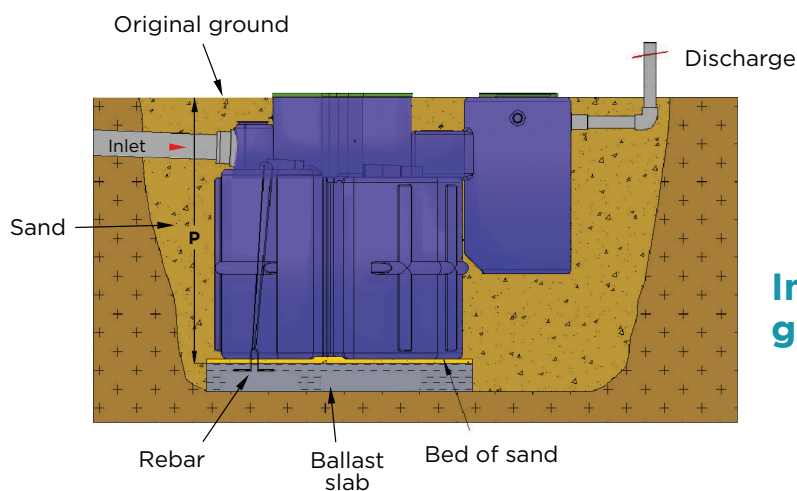


INSTALLATION SHEET

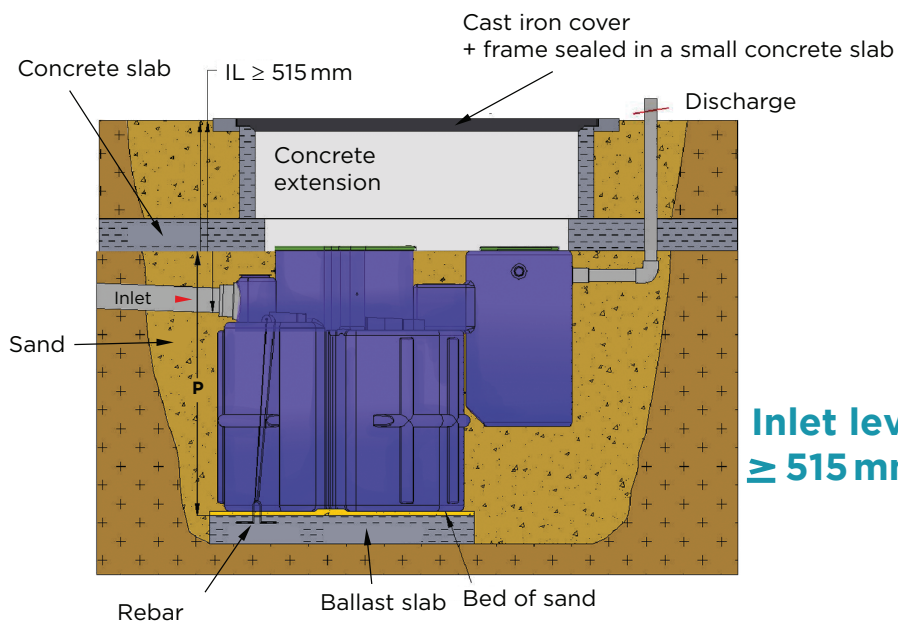
IN062-A



The reference guide remains the one supplied with the unit



**Installation under
green space**



**Inlet level (IL)
 $\geq$ 515 mm**



Installation of water treatment units

Polyethylene unit SPHÈRE type [Appendix A-IV]



INSTALLATION SHEET

IN056-G



The reference guide remains
the one supplied with the unit

Unloading and storage:

- Visually inspect the body of the unit to make sure there is no damage.
If there are any defects, note reservations on the transport company's initialled slip
- Position the unit somewhere it is protected from impacts. Do not allow rain to penetrate the unit.

Handling:

Before handling, pump the wastewater in each compartment.

- Polyethylene tanks are vulnerable to the impact of forklift truck forks. Do not push the unit by using the fork against the tank. The base of the unit includes dedicated slots for forks.
- The unit should be handled using suitable lifting machinery.
- For units with a lifting strap, use all of the unit's lifting straps **at the same time**.
- Once suspended, the unit should be guided using ropes.

Basic precautions:

- **Always place the unit on a bed of sand or gravel ($\varnothing < 15\text{mm}$).**
- **Do not use compacting equipment** near the unit. Use self-compacting backfill material.
- **Do not place the concrete element directly on the unit**, create an adapted and "floating" base slab (There should be no load transfer between the concrete and unit).
- The unit's temperature should never exceed **30 °C** at any time.
- If exposed to dynamic loads (e.g. **vehicle traffic**), the **protection slab** is mandatory regardless of depth. **This slab must be floating** and supporting the edges of the excavation. *The structural dimensions of this slab will be calculated by a Civil Engineering design office.*
- The presence of **specific dynamic loads** can sometimes require **peripheral reinforcement** in addition to the protection slab. (Contact your Civil Engineering design office).
- If installed under roads, **the plastic cover must be removed** and replaced with an adapted cover.
- Be aware of the presence of **groundwater, hydromorphic ground** or a **layer of impermeable soil** (rocky or clay) which can **retain surface water**. Any risk of excavation flooding makes steps 5 and/or 11 crucial. Check the soil study to evaluate the risk of water in contact with the unit. The sites <http://www.inondationsnappes.fr> and www.argiles.fr help assess this risk).
- The unit supports static loads (backfilling and hydrostatic thrust) associated with the following limits:

Range SPHÈRE	Risk of groundwater in contact with the unit (see § basic precautions above)		No risk of groundwater in contact with the unit
	Fe (max water level depth/NS)	N (max groundwater level)	Fe (max water level depth/NS)
Standard model	1 m	$N \leq \text{Fe unit}$	1.5 m
Reinforced model	1.5 m	$N \leq \text{Original ground}$	3 m

Beyond the depths above, a protection slab is mandatory.

The unit should not be exposed to residual pressure exceeding the pressure associated with the limits above.



Installation of water treatment units

Polyethylene unit SPHÈRE type [Appendix A-IV - cont]

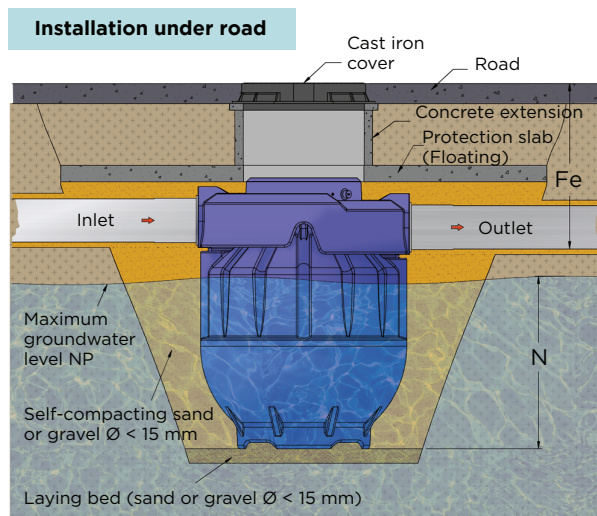
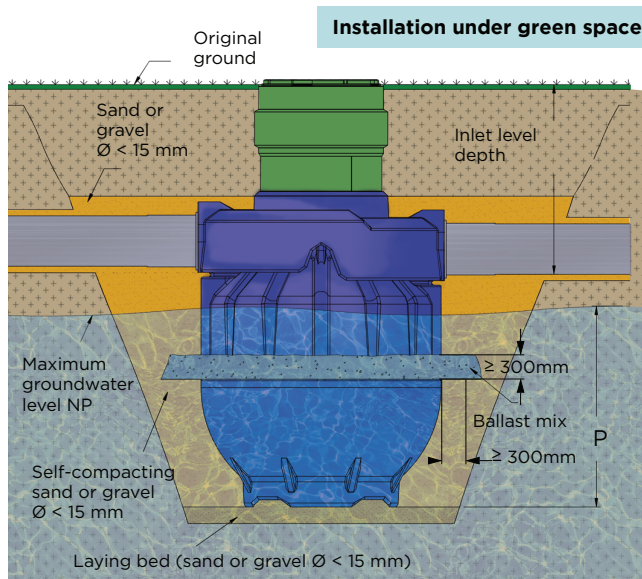


INSTALLATION SHEET

IN056-G



The reference guide remains
the one supplied with the unit



Underground unit installation procedure:

- 1 - Stabilise the bottom of the excavation and ensure it is horizontal.
- 2 - Create a 100 mm bed of sand or gravel ($\varnothing < 15\text{mm}$) on the bottom of the stabilised excavation
- 3 - Position the unit after removing any protection, check it is horizontal.
- 4 - Add 200 litres of clean water in the unit to stabilise it before backfilling around the tank with gravel ($\varnothing < 15\text{mm}$) in layers of 300 mm max.

- Fill the unit at the same time to balance the water level with the backfill level.

- ensure that the backfill is stable between each layer.
- take care with enclosed spaces
- backfill the entire spherical base.

- 5 - If the unit needs to be anchored (see § "Mechanical Strength"), pour a ring of concrete around the strap at mid-height of the tank with a minimum section of 300x300 mm (see diagram).

The weight of the concrete will be calculated to offset the buoyant force when the unit is empty.

- 6 - Connect the unit's inlet, outlet and any vents (crucial for units with a drain column). *Sleeves are provided for the PVC tube.*

Note : regarding grease and/or starch separators: these units are likely to create bad odours. It is crucial to **ventilate the pipework upstream and downstream** pursuant to EN 1825-2.

- 7 - Connect the alarms, use sheaths to pass through cables.
- 8 - If needed, raise the float of the stopper when the final water level is reached and stable.
- 9 - Backfill with gravel ($\varnothing < 15\text{mm}$) until the pipes are covered.
- 10 - Ensure the backfill is stable.

- 11 - If necessary, (see § "Basic precautions"): create a protection slab.

The protection slab can also act as ballast. (Step 5 becomes optional if there is a protection slab).

- 12 - Fit any extensions and adjust them to the level of the finished ground.

If there is a concrete extension, create a "floating" base slab (see § "basic precautions") and remove the plastic cover.

- 13 - Backfill above the pipes using gravel or the surrounding backfill.



Installation of water treatment units

Polyethylene unit SPHÈRE type [Appendix A-IV - cont & end]



INSTALLATION SHEET

IN056-G



The reference guide remains
the one supplied with the unit

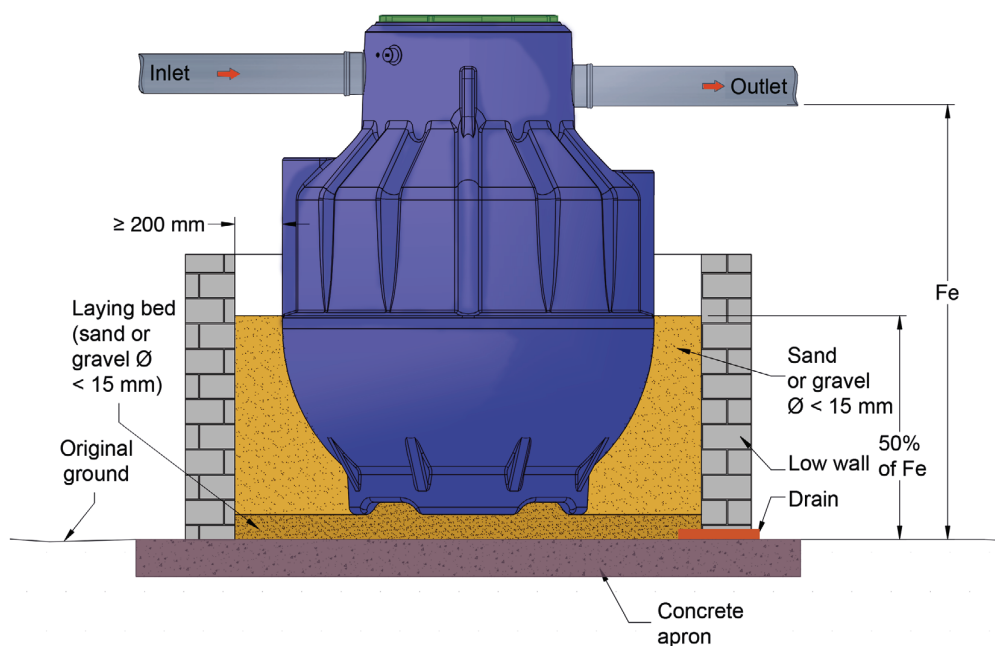
Above ground installation procedure:

Note : Steps 2 and 5 are optional for the following references:

YH0501E ; YH1001E ; YH2003E ; YH0503E ; YH1003E ; YH1502E ; YG0500E ; YG1501E ; YG3000E ; YG3500E ; YG0501E ; YG1000E ; YG1001E ; YG2000E ; YG2500E ; YG3002E ; YG3502E ; YG0502E ; YG1002E ; YG1503E ; YD0340E and YD0660E ;

as well as the references YH****RE and YG****RE (reinforced green tanks).

- 1 - Ensure the ground is stable, flat and horizontal. If not, create a concrete apron.
- 2 - Create a walled and drained enclosure whose dimensions match the diagram description opposite. Keep a gap of 200 mm minimum between the tank and wall.
- 3 - Create a bed of sand or gravel ($\varnothing < 15\text{mm}$) that is 100 mm thick.
- 4 - Position the unit after removing any protection, check it is horizontal.
- 5 - Backfill the lower part of the unit with gravel ($\varnothing < 15\text{mm}$) in layers of 300 mm maximum.
 - Fill the unit at the same time to balance the water level with the backfill level.
 - Equalise and stabilise the backfill by spraying between each layer.
 - Take care with enclosed spaces.
 - Continue to a height of 50% of the unit's water level.
- 6 - Connect the unit's inlet, outlet and any vents (crucial for units with a drain column).
Sleeves are provided for the PVC tube.
- 7 - Connect the alarms.
- 8 - Finish filling the unit with water.
- 9 - For an oil separator, raise the stopper float if applicable until the inner water level is stable.
An overflow alarm is recommended to report unit clogging and avoid overflow.





Installation of water treatment units

HYDROCUBE type steel unit [Appendix A-V]



INSTALLATION SHEET

IN057-D



The reference guide remains
the one supplied with the unit

Unloading and storage:

- Visually inspect the unit to make sure there is no damage, particularly to its coating.
If there are any defects, note reservations on the transport company's initialled slip
- Place the unit somewhere it is protected from impacts. Do not allow rain to penetrate the unit.

Handling:

Before handling, pump the wastewater in each compartment.

- The coating of steel tanks is vulnerable to shocks and impacts.
- The unit should be handled using suitable lifting machinery.
- Use all unit lifting rings at the same time. Once suspended, the unit should be guided using ropes.

Basic precautions:

- Always place the unit on a bed of sand or gravel ($\varnothing < 15\text{mm}$).
- Do not use compacting equipment to stabilise the unit's backfill. Use self-compacting gravel.
- Do not place a concrete element directly on the unit, create an adapted and "floating" base slab (There should be no load transfer between the concrete and unit).
- The unit's temperature should never exceed 60°C at any time.
- If exposed to dynamic loads (e.g. vehicle traffic), the protection slab is mandatory regardless of depth. This slab must be floating and supporting the edges of the excavation.
- *The structural dimensions of this slab will be calculated by a Civil Engineering design office.*
- The presence of specific dynamic loads can sometimes require peripheral reinforcement in addition to the protection slab. *(Contact your Civil Engineering design office).*
- If installed under roads, the plastic cover must be removed and replaced with an adapted cover.
- Be aware of the presence of groundwater, hydromorphic ground or a layer of impermeable soil (rocky or clay) which can retain surface water. Any risk of excavation flooding makes steps 10 and/or 11 crucial. Check the soil study to evaluate the risk of water in contact with the unit.
- (The site <http://www.georisques.fr> helps assess this risk)
- The unit supports static loads (backfilling and hydrostatic thrust) associated with the following limits:

Range HYDROCUBE	Risk of groundwater in contact with the unit (see § basic precautions above)		No risk of groundwater in contact with the unit
	Fe (max water level depth/NS)	N (max groundwater level)	Fe (max water level depth/ NS)
ADH... AHF... BDG...	1 m	$N \leq \text{Fe unit}$	1.5 m
YH...A (standard)			
YH...RA (reinforced)	1.5 m	$N \leq \text{Original ground}$	3 m

Beyond the depths above, a protection slab is mandatory.

The unit should not be exposed to residual pressure exceeding the pressure associated with the limits above.



Installation of water treatment units

HYDROCUBE type steel unit [Appendix A-V cont]

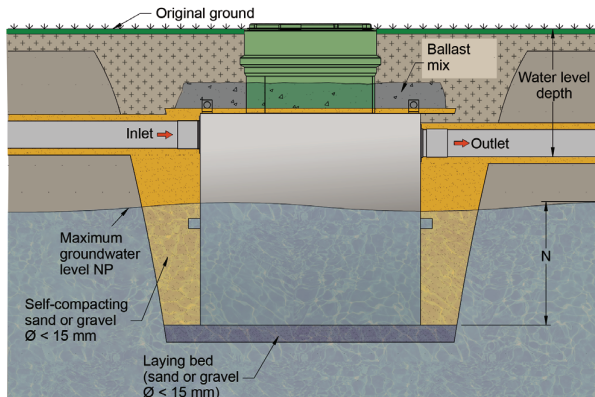


INSTALLATION SHEET IN057-D

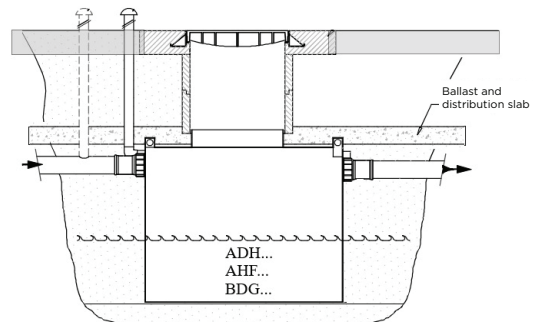
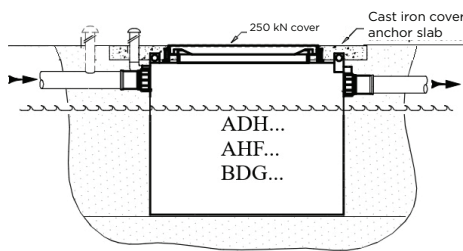
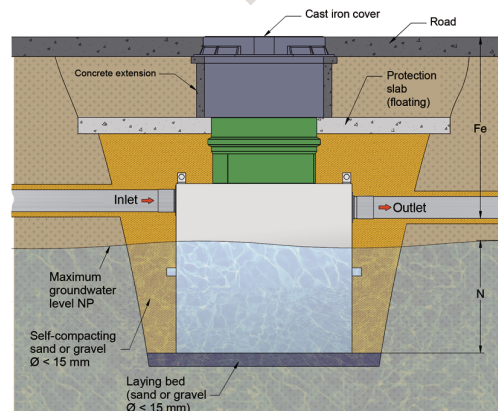


The reference guide remains
the one supplied with the unit

Installation under green spaces



Installation under roads



Hydrocube underground unit installation procedure:

- 1 - Stabilise the bottom of the excavation and ensure it is horizontal.
- 2 - Create a 100mm bed of sand or gravel ($\varnothing < 15\text{mm}$) on the bottom of the stabilised excavation.
- 3 - Position the unit after removing any protection, check it is horizontal.
- 4 - Add 200 litres of clean water in the unit to stabilise it before backfilling around the tank with gravel ($\varnothing < 15\text{mm}$) in layers of 300mm max.
 - Fill the unit at the same time to balance the water level with the backfill level.
 - ensure that the backfill is stable between each layer.
 - Take care with enclosed spaces.

Note: it is recommended to surround the unit with geotextile to prevent the risk of damaging the coating during installation.

- 5 - Connect the unit's inlet, outlet and any vents (crucial for units with a drain column). *Sleeves are provided for the PVC tube.*
- 6 - Connect the alarms, use sheaths to pass through cables.
- 7 - If needed, raise the float of the stopper when the final water level is reached and stable.
- 8 - Backfill with gravel ($\varnothing < 15\text{ mm}$) until the pipes are covered
- 9 - Ensure the backfill is stable.
- 10 - If the unit needs to be anchored (see § "Mechanical Strength"), create a concrete mix around the unit manhole. *The weight of the concrete will be calculated to offset the buoyant force when the unit is empty.*



Installation of water treatment units

HYDROCUBE type steel unit [Appendix A-V cont & end]



INSTALLATION SHEET
IN057-D



The reference guide remains
the one supplied with the unit

11 - If necessary, (see § “Basic precautions”): create a protection slab.

The protection slab can also act as ballast. (Step 10 becomes optional if there is a protection slab).

12 - Fit any extensions and adjust them to the level of the finished ground.

If there is a concrete extension, create a “floating” base slab (see § “basic precautions”) and remove the plastic cover.

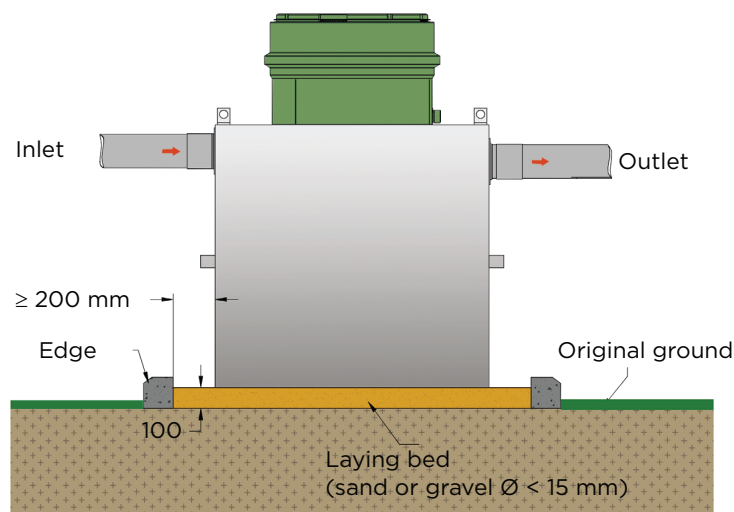
13 - Backfill above the pipes using gravel or the surrounding backfill.

Hydrocube raised unit installation procedure:

- 1** - Ensure the ground is stable, flat and horizontal. If not, create a concrete apron.
- 2** - Create a peripheral edge to frame and retain the bed of sand (at the horizontal dimension of the unit + 200 mm, height 100 mm).
- 3** - Create a bed of sand or gravel ($\varnothing < 15$ mm) that is 100 mm thick.
- 4** - Position the unit after removing any protection, check it is horizontal.
- 5** - Connect the unit inlet and outlet. *Sleeves are provided for the PVC tube.*
- 6** - Connect any alarms.
- 7** - Finish filling the unit with water.
- 8** - Raise the stopper float if applicable until the inner water level is stable.

An overfill alarm is recommended to report unit clogging and avoid overflow.

Above ground installation





Installation of water treatment units

HYDROBAC type steel unit [Appendix A-VI]



INSTALLATION SHEET

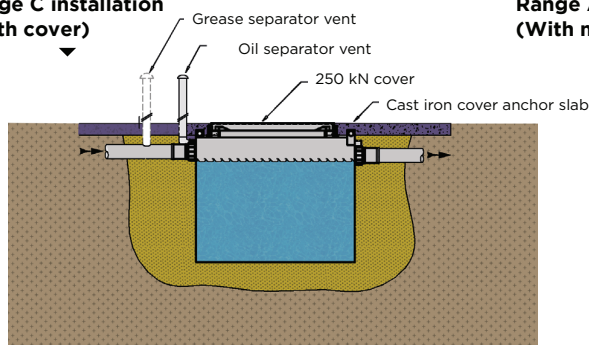
IN057-D



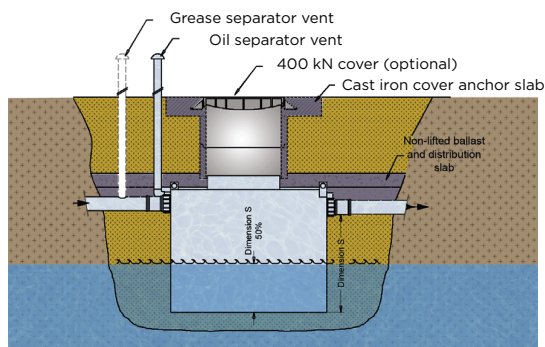
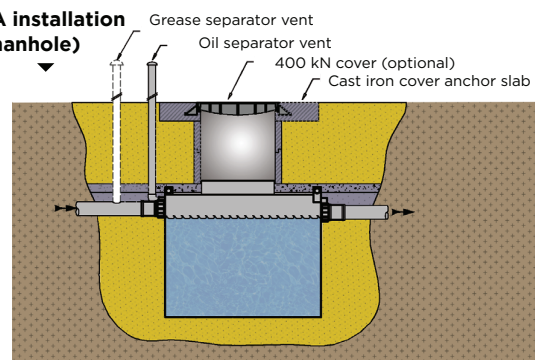
The reference guide remains
the one supplied with the unit

- 1 - Position the unit horizontally on a stabilised base (sand or lean concrete).
- 2 - Connect the pipework inlet and outlet, use our TSC adapter sleeves.
- 3 - Connect the vent in the event of underground installation, pass through an ICT63 sheath for the alarm cable (optional).
- 4 - Fit the extension if applicable, adjust the height depending on the ground (C range).
- 5 - Fill the unit with clean water.
- 6 - For oil separators, raise the float and release it when the water level is stabilised.
- 7 - Backfill with sand.
- 8 - **Installation under green space:** the base of the unit cannot be at a depth > 2.5m compared to the original ground. Below this, use a protection slab.
- 9 - **Installation under pavements and car parks:** separator with 250 kN cast iron cover (C range). Frames should be secured in a concrete slab supporting the edges of the excavation (see diagram below).
- 10 - **Installation under road:** separator with manhole (A range), a concrete slab will always be created before raising the unit with a concrete manhole, provide 400 kN covers (see diagram below).
In the presence of groundwater: separator with manhole, create a non-lifted ballast and distribution slab above the unit - only if the water level does not exceed 50% of the outlet water level (dimension S, see diagram opposite).
- 11 - Check that the float is on the surface.
- 12 - **Above ground installation :** oil separator, the outlet pipework must be ventilated, provide an overfill alert system. Grease separator, only use sealed light covers (see diagram opposite).

**Range C installation
(With cover)**

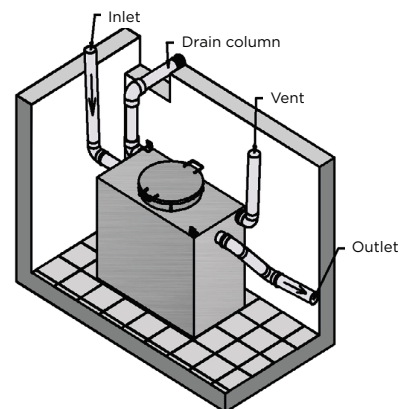


**Range A installation
(With manhole)**



**Above ground
installation**

**Installation of range A
in the presence of
groundwater.**



Note : specific case of starch separators or separators with drain column :

Starch separator: the spray nozzle must be connected to the network and linked to peeler operation (15/21 solenoid valve ref.: EV1521).

Separator with drain column: the drain column must be extended to the original ground or ground floor.



Installation of water treatment units

Steel vertical cylindrical unit [Appendix A-VII]



INSTALLATION SHEET

IN055-B



The reference guide remains
the one supplied with the unit

Unloading and storage:

Visually inspect the unit to make sure there is no damage, particularly to its coating.

If there are any defects, note reservations on the transport company's initialled slip

Position the unit somewhere it is protected from impacts. Do not allow rain to penetrate the unit.

Handling:

Before handling, pump the wastewater in each compartment.

- The coating of steel tanks is vulnerable to shocks and impacts.
- The unit should be handled using suitable lifting machinery.
- Use all unit lifting rings at the same time.
- Once suspended, the unit should be guided using ropes.

Basic precautions:

- **Do not use compacting equipment** to stabilise the unit's backfill. Use self-compacting gravel.
- **Do not place a concrete element directly on the unit**, create an adapted and "floating" base slab (No load transfer must be possible between the concrete and unit).
- The unit's temperature should never exceed 60°C at any time.
- If exposed to dynamic loads (e.g. vehicle traffic), the protection slab is mandatory regardless of depth. This slab must be floating and supporting the edges of the excavation. **The structural dimensions of this slab will be calculated by a Civil Engineering design office.**
- The presence of **specific dynamic loads** can sometimes require **peripheral reinforcement** in addition to the protection slab. (Contact your Civil Engineering design office).
- Be aware of the presence of **groundwater, hydromorphic ground** or a **layer of impermeable soil** (rocky or clay) **which can retain surface water**. Any risk of excavation flooding makes steps 3 and/or 10 crucial. Check the soil study to evaluate the risk of water in contact with the unit. (The sites <http://www.inondationsnappes.fr> and www.argiles.fr help assess this risk)
- The unit supports static loads (backfilling and hydrostatic thrust) associated with the following limits:

Fe (max water level depth/NS)	N (max groundwater level)
1 m	$N \leq \text{Fe unit}$

- Beyond the depths above, a **protection slab is mandatory** (See #10).

The unit should not be exposed to residual pressure exceeding the pressure associated with the limits above.



Installation of water treatment units

Steel vertical cylindrical unit [Appendix A-VII cont and end]



INSTALLATION SHEET

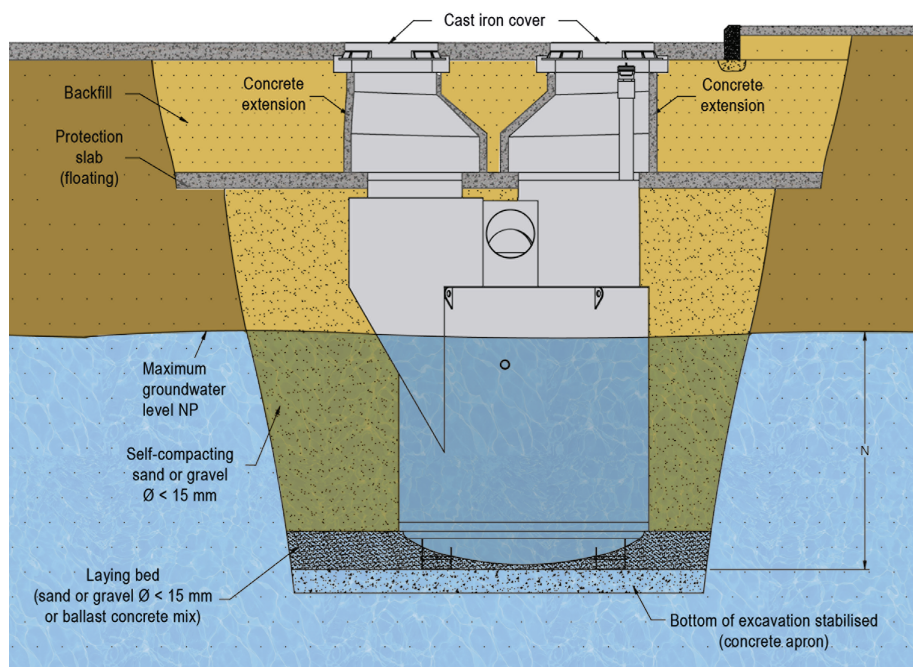
IN055-B



The reference guide remains
the one supplied with the unit

Underground unit installation procedure:

- 1 - Stabilise the bottom of the excavation and ensure it is flat and horizontal.
- 2 - Position the unit on the bed of sand **after removing any transport cradles** and protection.
- 3 - If the unit needs to be ballasted (see § “Mechanical Strength”), pour concrete around the lower part of the unit. The weight of the concrete will be calculated to offset the buoyant force when the unit is empty.
- 4 - Backfill the unit with sand and/or gravel ($\varnothing < 15$ mm) in layers of 300 mm maximum.
 - Stabilise by spraying between each layer.
 - Take care with enclosed spaces
- 5 - Connect the unit inlet and outlet and any vents. Sleeves are provided for the PVC tube.
- 6 - Connect the alarms, use sheaths to pass through cables.
- 7 - Backfill with gravel $\varnothing < 15$ mm until the inlet and outlet pipes are covered, continuing to fill the unit with clean water.
- 8 - Finish filling the unit with water. Raise the stopper float if applicable until the inner water level is stable.
- 9 - Stabilise the backfilled area by spraying it.
- 10 - If required (see § “Mechanical Strength”): Create the load distribution slab. NB: this slab could also ballast the unit.
- 11 - Fit any extensions and adjust them to the level of the finished ground.
- 12 - Backfill using the natural terrain.





Installation of water treatment units

Underground POLYETHYLENE horizontal cylindrical unit

[Appendix A-VIII]



INSTALLATION SHEET

IN060-1i



The reference guide remains
the one supplied with the unit

UNLOADING AND STORAGE

- > Visually inspect the body of the unit to make sure there is no damage.
If there are any defects, note reservations on the transport company's slip
- > Position the unit somewhere it is protected from impacts, and secure it.

HANDLING:

Before handling, **check there is no water at all** inside the tank.
Tanks are vulnerable to the impact of forklift truck forks, excessive friction and impacts.
Use **suitable machinery. Proceed with caution and smoothly**. The suspended unit should be guided using ropes.

BASIC PRECAUTIONS:

- > Prioritise a location not exposed to rolling loads, and allowing a reduced unit installation depth to make ongoing maintenance easier. Keep a distance from tree roots.
- > Outside a traffic road, prioritise a light and adjustable PE extension (option) to keep the original cover.
- > Near to construction, do not install the tank in an area with mechanical stress from foundations (see DTU 13.11 & 13.12).
- > Do not use compacting equipment to stabilise the unit's backfill. Use self-compacting gravel Ø15 mm.
- > During the site phase, mark out the tank area to prohibit vehicle traffic and material storage.
- > Tanks are designed to resist maximum installation depths (dimension G) in the table on page 2. Beyond this, a protective structure (see #8 of the procedure) is required. It must sit against stable excavation edges and its structural dimensions must be calculated by a Civil Engineering design office (The unit must not be exposed to residual pressure exceeding static loads equivalent to the limits (see table page 2).
- > Ensure that no load transfer is possible through direct contact of the concrete against the unit (floating installation).
- > If exposed to additional static loads (embankments, piles of different materials, high gradient, concrete extension, etc.) or dynamic loads (vehicle traffic, etc.) a protective structure is also required, regardless of depth.
- > If installed under roads, the plastic cover must be removed. (Provide an adapted cover)
- > At the tank location, assess the risk of groundwater (hydromorphic ground). The presence of water can be linked to rising groundwater, or low permeability of the surrounding soil which, limiting rainfall infiltration, causes accumulation in the excavation around the tank (permeability coeff. $K < 10^{-5}$ cm/s. rocks, clay, loam, etc.) See the soil study. Failing this, the site <http://www.georisques.gouv.fr> also helps to assess whether there is groundwater.
- > The maximum submersion level (dimension N) associated with your model is indicated on page 2. Select a model with a submersion capacity adapted to the installation configuration. If unsure, do not install the tank and contact us.
- > Evaluate the tank's ballast requirements. The weight of the concrete must offset the buoyant force when the unit is empty.
- > The diagrams on page 2 describe ballasting solutions.
- > In addition to their low permeability (see above), clay soils cause high stress linked to the clay shrink/swell phenomenon. In the event of medium to high exposure (see <https://www.georisques.gouv.fr>), add 200 kg of cement per m³ of gravel during tank backfilling.
- > Maximum inner temperature: 30 °C for polyethylene, 50 °C for polyester and painted steel, 90 °C for stainless steel.
- > Drain the tank if there is a risk that the contents might freeze.
- > Installation & filling above ground with conditions or impossible depending on model. Contact us for verification and adapted procedure.

UNDERGROUND TANK INSTALLATION PROCEDURE

- 1 - Stabilise the bottom of the excavation. Ensure it is horizontal. If necessary (see above), create a ballast concrete apron including anchoring bars.
- 2 - Create a laying bed (gravel Ø < 15 mm) that is 100mm thick.
- 3 - Put the tank in place, after removing any cradles or the transport pallet.
- 4 - If there is groundwater, and depending on the model (see page 2): **Secure the anchorage rings** in the bottom part to the concrete apron. Or, **insert the anchoring frame** (optional) in the concrete. Or, **strap (belt) the tank** to the apron, without pre-stressing.
- 5 - Add a volume of **clean water** V_{Ec} in the tank to stabilise it:
 For a tank volume $V \leq 8 \text{ m}^3$, fill the tank **to at least 50 %** clean water: $V_{Ec} \geq V_{\text{tank}}/2$
 For a tank volume $V \geq 10 \text{ m}^3$, **do not exceed 20%** of the tank's useful volume: $V_{Ec} \leq V_{\text{tank}}/5$
This step does not apply to regulation tanks with an outlet at the bottom of the tank, nor chemical effluent retention tanks (empty).
- At the same time, **backfill** the tank with self-compacting gravel Ø < 15 mm, **in layers ≤ 200 mm thick**
Attention: if exposed to the clay shrink/swell phenomenon, add 200 kg of cement per m³ of gravel.
Take care with enclosed spaces at the bottom to ensure a perfect base for the tank.
Continue to at least 50% of the tank height, depending on the model, create a mix of peripheral ballast concrete (see diagram page 2).
- 6 - Beyond this level, continue backfilling using self-compacting gravel Ø < 15 mm.
Excluding clay soil, the use of surrounding soil is tolerated, provided that it does not contain rocks Ø > 15 mm
- 7 - Connect the tank (Ø standard PVC), as well as the any vents (depending on the model).
- 8 - If necessary (see § "Precautions"), create the protective (and/or ballasting) concrete structure.
- 9 - Before surface backfilling, fit and adjust the potential extension. Use gravel Ø < 15 mm around the extension and/or cover. *Stop slightly back from the cover to avoid gravel falling into the tank when open.*



Installation of water treatment units

Underground POLYETHYLENE horizontal cylindrical unit

[Appendix A-VIII cont]



INSTALLATION SHEET

IN060-3J

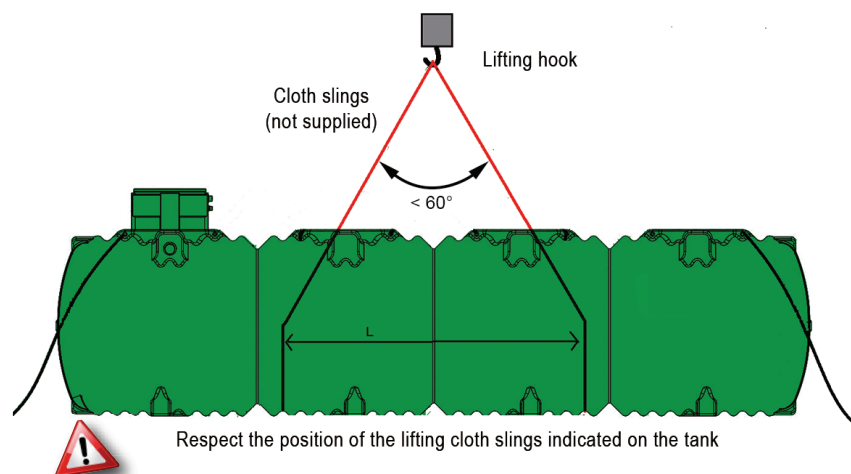


The reference guide remains
the one supplied with the unit

- > Tank delivered without straps or lifting rings.
- > Use cloth lifting straps in the indicated positions (yellow labels on the tank).
Keep a slinging angle < 60°.
- > Use suitable lifting machinery.
- > Proceed smoothly when lifting and moving the tank.
- > After unloading, place the tank on flat and even ground.

Schematic diagrams cannot be used as an installation plan

Tank model		Anchoring/Ballasting				Lifting
		CSSA frame or SA1824 straps.				
Ext. Ø	Volume	Qty	Position			Dist. between Slings
m	m³		Ø (m)	A (m)	B (m)	L (m)
Ø 1.94	10	4	0.85	1.35	0.55	/
	15	4	0.85	1.9	1.35	3.0
	20	4	0.85	1.9	3.25	4.0
Ø 2.45	14	3	0.9	0.7	/	1.6
	20	4	0.9	1.35	0.7	2.3
	25			1.55		1.51
	30			1.1	1.8	2.29
	35	5	1.3	1.55	2.63	
	40		0.9	2	3.60	
	45	6	0.9	1.8	3.99	
	50			2	4.03	
	55	8	1.3	1.55	4.81	
	60		0.9	1.8	4.81	
	65	10	0.9	1.5	7.68	
	70			1.65	7.68	
	75			1.8	8.65	





Installation of water treatment units

Underground POLYETHYLENE horizontal cylindrical unit

[Appendix A-VIII cont & end]



INSTALLATION SHEET

IN060-3J



The reference guide remains
the one supplied with the unit

Tank model	Example	Level N Groundwater submersion		At the tank's upper generator:	
				Depth G	⇔ Acceptable Vertical Pressure P_{v.adm}
Version ET..... (Standard)	A	N < 1.0 m	Do not install the tank if submersion risks exceeding the indicated limit N	G ≤ 0.65 m	⇔ Beyond: protective structure P_{v.adm} ≤ 12 kN/m²
Version ETX..... (reinforced)	B	N < 1.0 m		G ≤ 1.0 m	⇔ Beyond: protective structure P_{v.adm} ≤ 18 kN/m²
	C	1.0 < N < 2.0 m		Upper ballast slab	⇔ P_{v.adm} ≤ 12kN/m²

> In the presence of additional surface loads, the dimensions of the protective structure must be calculated to respect the acceptable vertical pressure on the tank's upper generator.

> In the event of significant submersion (example C), create a concrete slab above the tank to ballast it and, if needed, protect it against additional surface loads

Above ground installation of these tanks requires an adapted procedure. Contact us

> If a sealing check is required, do not fill until completing step 5 of the underground installation procedure (see General Instructions, page 1). Then compare changes to the level 12 hours after filling with water

Example A & Example B no additional surface load	
Example C + Example A & B adaptation > if dimension G is exceeded (Deep installation) > and/or in the presence of additional surface loads	



Installation of water treatment units

POLYESTER or STEEL horizontal cylindrical unit

[Appendix A-IX]



INSTALLATION SHEET

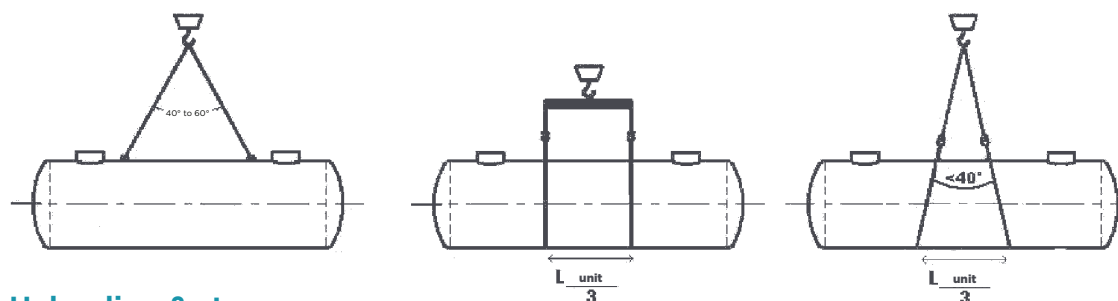
IN501-A



The reference guide remains
the one supplied with the unit

Handling:

- Before handling, check there is no water in each compartment.
- The unit should be handled using suitable lifting machinery.
- If available, use the lifting rings provided on the unit; in the absence of lifting rings, respect the lifting diagrams below. Only use cloth straps, **steel cables are PROHIBITED**.
- Once suspended, the unit should be guided using ropes.



Unloading & storage:

- Visually inspect the body of the unit to make sure there is no damage.
- If there are any defects, note reservations on the transport company's initialled slip*
- Place the unit somewhere it is protected from impacts, and secure it. Do not allow rainfall to enter (the unit must be empty during handling).

Basic precautions:

- To understand your unit's installation limit conditions (backfilling height, groundwater level), refer to its data sheet or contact us.
- **Never fill the unit with water when not supported (raised).** In the event of a filling sealing check, do not fill until completing step 5 of the underground installation procedure or by following the aboveground installation procedure. Then compare changes to the level 12 hours after filling with water
- **Do not use compacting equipment** to stabilise the backfill around the tank, just spraying.
- In the event of exposure to **additional static loads** (embankment, significant gradient, deep, etc.), contact us to reinforce the tank (or protect it, where appropriate). In the event of dynamic loads (vehicle traffic, etc.). A **protection slab** must be created.
- In the event of **vehicle traffic**, the use of concrete extensions and cast iron covers is possible provided that they sit on suitable distribution slabs separated from the tank with a 500 mm layer of sand/gravel.
- The structural dimensions of the slabs will be calculated by a competent design office.
- Water saturation (even partial) of the excavation by groundwater or surface water run-off might require tank ballasting (see **Speed Chassis Option** or anchoring to the concrete apron).
- If unsure, refer to the installation standards **NF P16-442, NF 976-2** or contact **TECHNEAU**.



Installation of water treatment units

POLYESTER or STEEL horizontal cylindrical unit

[Appendix A-IX cont]



INSTALLATION SHEET

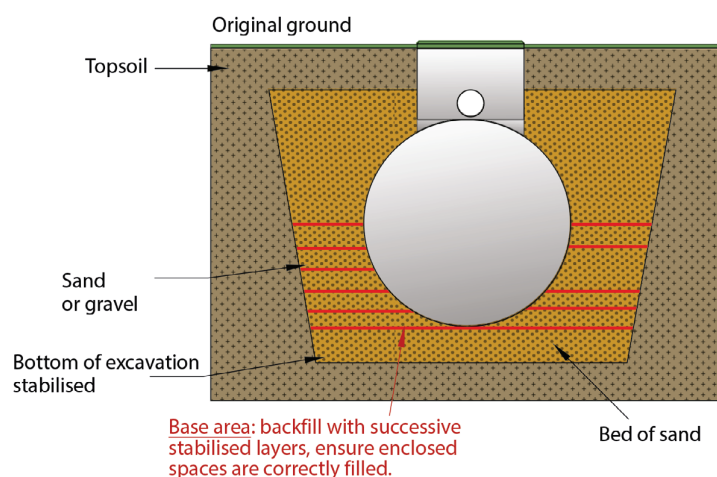
IN501-A



The reference guide remains
the one supplied with the unit

Underground installation procedure:

- 1 - Stabilise the bottom of the excavation and ensure it is horizontal. If the unit needs to be anchored (see § "Precautions"), create a concrete apron at the bottom of the excavation and include anchoring rebars. The weight of the concrete will be calculated to offset the buoyant force when the unit is empty.
- 2 - On the stabilised bottom of the excavation, create a 100 mm bed of sand.
- 3 - Position the unit on the bed of sand after removing any transport cradles and protection.
- 4 - Adjust the straps/belts or anchoring tensioners (optional) without pre-stressing the tank. If there is no anchoring, fill the unit with clean water (20% of total capacity) to stabilise it.
- 5 - Backfill the lower part of the unit with sand and/or gravel 10-14 in layers of 300 mm maximum. Stabilise by spraying between each layer (**Mechanical compacting is not allowed**). Take care with enclosed spaces at the bottom to ensure a perfect base. Continue to 50% of the tank height.
- 6 - Connect the inlet and outlet. Sleeves are provided for the PVC tube.
- 7 - Backfill with 10-14 sand or gravel until the outlet pipe is covered.
- 8 - Stabilise the backfilled area by spraying it.
- 9 - If necessary, (see § "Basic precautions"): create a protection slab.
- 10 - Fit any extensions and adjust them to the level of the finished ground.
- 11 - Backfill using the natural terrain.





Installation of water treatment units

POLYESTER or STEEL horizontal cylindrical unit

[Appendix A-IX cont & end]

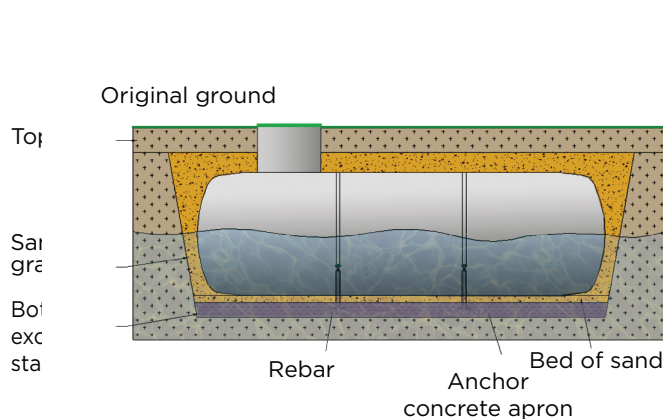


INSTALLATION SHEET

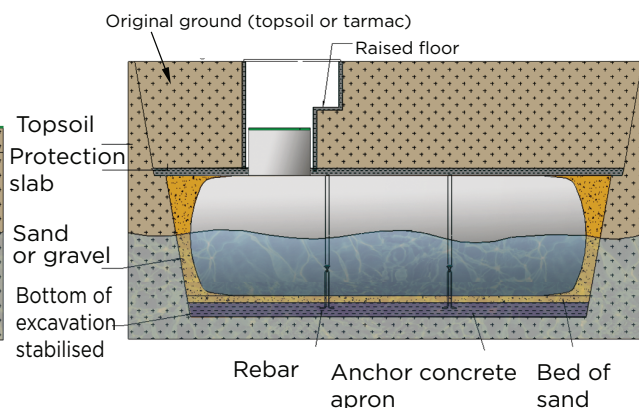
IN501-A



The reference guide remains the one supplied with the unit



Standard installation



Installation under protection slab

Above ground installation procedure:

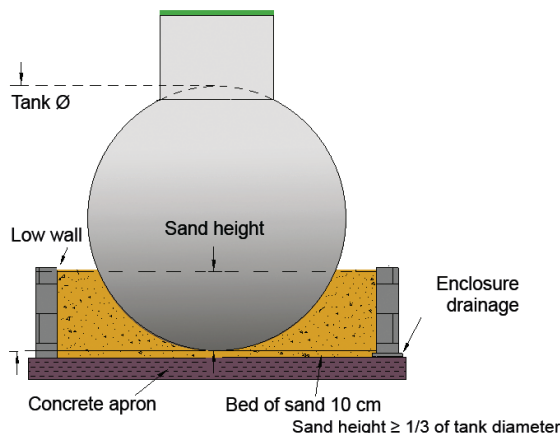
> Example n° 1: With TECHNEAU specific cradles:

- 1 - The ground must be stable, horizontal, free of stones and bumps. Create a clean concrete apron if needed.
- 2 - Position the unit on the specific metal cradles (supplied optionally).

Respect the position of the cradles described in the associated data sheet.

> Example n° 2: Without TECHNEAU specific cradles:

- 1 - The ground must be stable, horizontal, free of stones and bumps. Create a clean concrete apron if needed.
- 2 - Create a walled enclosure whose dimensions can accommodate the tank, keeping a gap of 30 cm to be able to backfill all around it. This walled enclosure will be used to backfill the unit to at least 1/3 of its height. Provide a drain so this walled enclosure cannot retain run-off water.
- 3 - Create a 10 cm bed of sand.
- 4 - Position the tank on the bed of sand after removing any transport cradles.
- 5 - Fill the tank to 20% of its capacity to stabilise it.
- 6 - Backfill the base of the tank using 10-14 gravel or sand, taking care with the enclosed spaces in the lower part. If using sand to backfill, compact it with spraying.
- 7 - The backfill height must reach **at least 1/3 of the unit's diameter**.



Above ground
installation



Installation of water treatment units

POLYETHYLENE GM1E grease collector [Appendix A-X]

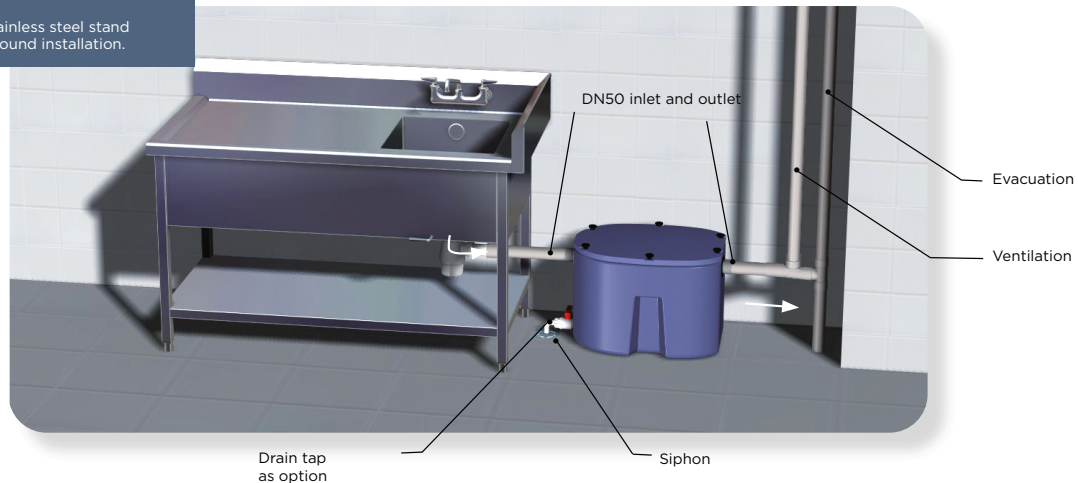


The reference guide remains the one supplied with the unit

Warning

To respect hygiene rules, ensure you:

- seal the surrounding edge with a silicon seal for direct installation on the ground.
- provide a stainless steel stand for above ground installation.



Installation procedure:

- 1 - The GM1E is a grease separator for a kitchen dishwashing sink. It must be installed outside meal preparation areas.
- 2 - The GM1E is studied to receive water from a single standard dishwashing sink.
- 3 - Install the GM1E near the sink, the pipe gradients must be greater than or equal to 2 cm/m. Respect the connection DN: DN50.
- 4 - The removal pipe must be as straight as possible (to avoid pressure losses).
- 5 - Connect the vent.
- 6 - Raise the GM1E on a stand to make cleaning easier.
- 7 - Fill the unit with water.

Maintenance procedure (excluding service periods):

- 1 - Complete weekly maintenance: remove the cover, then skim off the layer of grease on the surface. Replace the cover.
- 2 - Complete monthly maintenance:
 - Remove the cover (then connect the drain valve using a pipe*).
 - Skim off the layer of grease on the surface.
 - Drain the contents of the GM1E (in the ground siphon using the drain valve*).
 - Remove the reducer at the unit inlet (it is held in place with a screw).
 - Clean the reducer with hot water, then replace it (close the drain tap*).
 - Refill the GM1E with water to the top, replace the cover (remove the drain valve pipe*).

*If drain tap option.



Installation of water treatment units

Mini GR stainless steel grease collector [Appendix A-XI]



The reference guide remains
the one supplied with the unit

Warning

To respect hygiene rules, ensure you:

- seal the surrounding edge with a silicon seal for direct installation on the ground.
- provide a stainless steel stand for above ground installation.



Installation procedure:

- 1 - The MINIGR is a grease collector for a kitchen sink.
It must be installed outside meal preparation areas.
- 2 - The MINIGR is designed to receive water from one or several standard dishwashing sinks.
- 3 - Install the MINIGR near the sink, the pipe gradients must be 2 cm/m. Respect the connection DN.
- 4 - The removal pipe must be as straight as possible (to avoid pressure losses). Connect the vent.
- 5 - Fill the unit with water.

Maintenance procedure (see page 97)



Installation of water treatment units

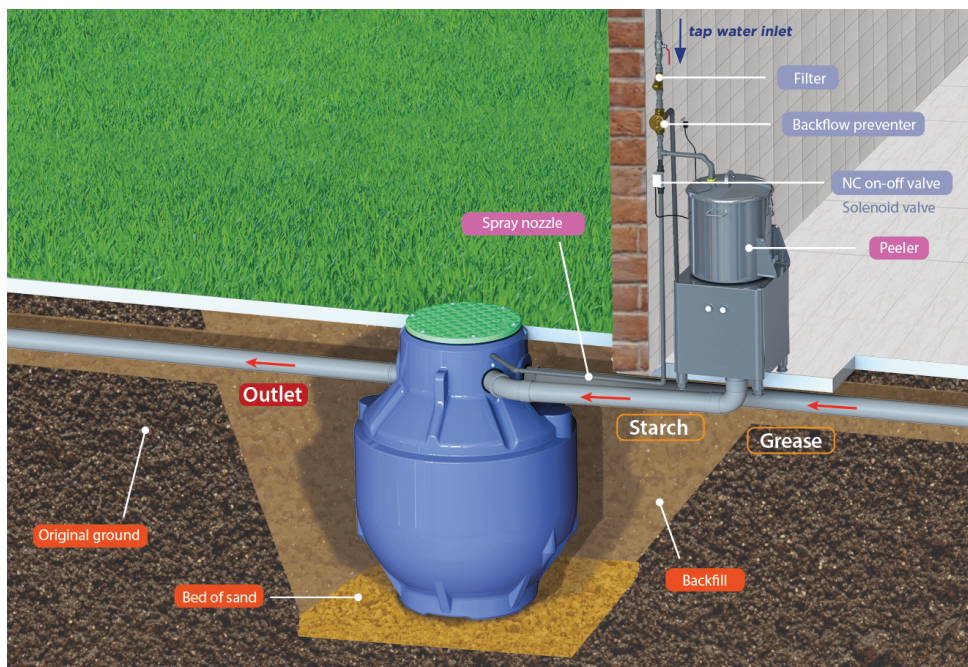
Grease and starch separator POLYETHYLENE SPHÈRE type

[Appendix A-XII]

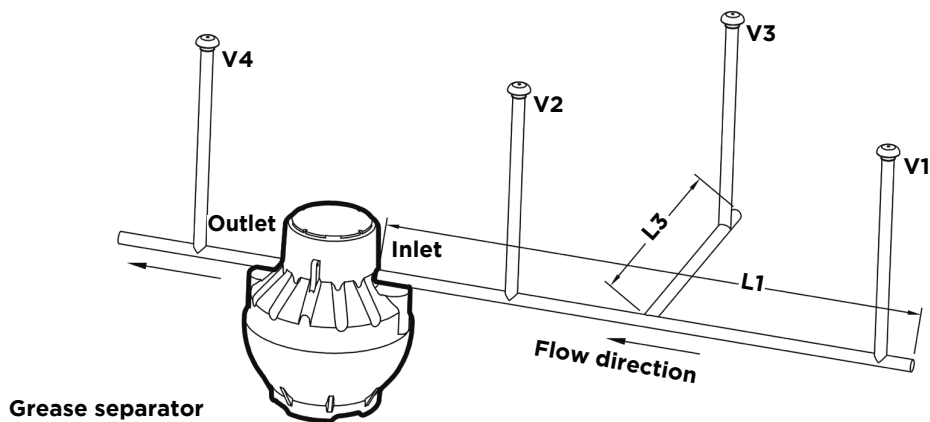
Connection principle:



The reference guide remains
the one supplied with the unit



Grease separator ventilation diagram (according to NF EN 1825-2)



According to EN1825-2, the grease separator vents must be connected as follows:

Pipe upstream from grease separator:

If $L1 \leq 10$ m, connect vent V1 on the roof.

If $L1 > 10$ m, connect vents V1 and V2 on the roof. The V2 tap will be as close as possible to the grease separator.

The branches of the main pipe ≥ 5 m ($L3$) must be ventilated on the roof (V3).

Pipe downstream from grease separator:

The separator's downstream pipe must be connected on the roof (V4).

For optimal ventilation, Techneau recommends fitting vents with a minimum diameter of 100 mm.



Questionnaire

Oil separator

Complete and send to us at info@techneau.com

Reference :

Town/City :

Country :

Booklet 70
Standard
NF P 16-442

Site technical parameters:

Size/dimensions

Required size: l/s calculation depending on surface area: m²

Required inlet and outlet DN: mm

Dimensions:

Bypass prohibited:

☐ fuel distribution area

☐ washing area:

- roll-over (⚠ 5 m³ sludge trap)

- high-pressure cleaner (⚠ large sludge trap)

☐ underground or covered car park: m²

☐ basin outlet after flow regulator

Bypass authorised:

Waterproof surface area: m²

Installation limitations:

☐ Under road (distribution slab mandatory)

☐ Under green space (installation without distribution slab depending on range)

☐ "Green space" PE cover

☐ Cast iron cover

Mechanical strength installation category:

Inlet Level depth

☐ 0.8 m to 1 m

☐ 1 m to 1.5 m

☐ over 1.5 m

Do you want an extension calculation ☐ yes ☐ no

Presence of groundwater (provide ballast slab)

☐ Groundwater

☐ Hydromorphic ground (clay soil)

Range requested in technical specifications:

☐ Polyethylene

☐ Steel

☐ Polyester

☐ Variant possible

Installation categories

Category		Installation	Backfill height Hs (m)	Usage conditions
Category 1	a	-	$0 \leq Hs \leq 0.50$	- With groundwater that could reach the soil surface
	b	-	$0 \leq Hs \leq 1.00$	- No vehicle traffic
	c	-	$0 \leq Hs \leq 1.50$	- Without groundwater
	d	-	$0 \leq Hs \leq 0.50$	- No vehicle traffic
	e	-	$0 \leq Hs \leq 1.00$	
	f	-	$0 \leq Hs \leq 1.50$	



Questionnaire

Grease separator

Complete and send to us at info@techneau.com

Reference :

Town/City :

Country :

Site references:

☐ Tender ☐ Project ☐ Study - Reference :

Department:

Study data:

- Calculation parameters

Installation site:

- ☐ Canteen
☐ Restaurant
☐ Hospital
☐ Hotel

Number of meals/day:

Number of services:

- ☐ 1 Service (8 hours)
☐ 2 Services (16 hours)

Grease density:

- ☐ < 0.94
☐ > 0.94

Effluent temperature:

- ☐ < 0.60 °C
☐ > 0.60 °C

Detergent used:

- ☐ Never
☐ Occasionally
☐ Hospitals