

**ENVIA TNC**

STORAGE TANKS

INFILTRATION

PUMPING STATIONS

GREASE SEPARATORS

OIL SEPARATORS



# OIL SEPARATOR – ENVIA TNC

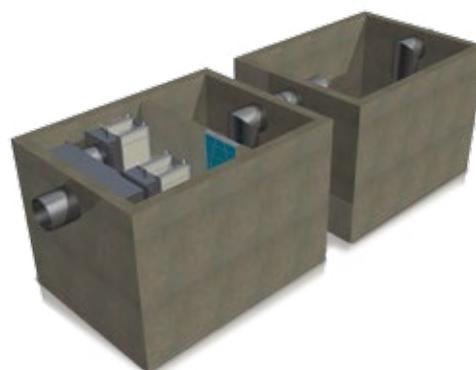
ENVIA TNC is a conventional equipment where proven technologies are complemented by efficient performance. In order to operate it no additional energy or chemicals are needed. The integrated safety valve protects the operator from accidental environmental consequences in case of emergency, by preventing further access to the basin.

The use and installation of this equipment is subject to vehicle traffic and/or ground water (fixing). ENVIA TNC is delivered ready assembled, it is easy to install into the sewage system, fits with a familiar fit.

The operation of the equipment is simple. The additional sensor is offered as an option, the alarm system installed is able to reduce operating costs significantly.

We offer site visits and consultations in order to choose the best viable solution, and in case of licensing requirements we offer help with the official procedures. The family unit is ÉME licensed.

In case it is needed we provide support with manufacturing the installation equipment and installing ENVIA TNC. All units of the ENVIA TNC comply by the emission limit value regulations in Hungary, outperforming the less stringent requirements of the EU.



Name	Capacity	Concrete quality	Tank 1	Tank 2	Tank 3	Weight
TNC 1,5 S-I	2 l/s	C35	1400x1100x1950	-	-	3.1 t
TNC 3 S-I	3 l/s	C35	1400x1100x1950	-	-	3.1 t
TNC 6 S-I	6 l/s	C35	1400x1100x1950	-	-	3.1 t
TNC 10 S-I	10 l/s	C35	1400x1100x1950	-	-	3.1 t
TNC 15 S-I	15 l/s	C35	1400x1100x1950	-	-	3.1 t
TNC 20 S-I	20 l/s	C35	3240x1740x1300	-	-	8 t
TNC 25 S-I	25 l/s	C35	3240x1740x1300	-	-	8 t
TNC 30 S-I	30 l/s	C35	3000x2300x1500	-	-	9.9 t
TNC 40 S-I	40 l/s	C35	3000x2300x2100	-	-	12 t
TNC 50 S-I	50 l/s	C35	3000x2300x2100	-	-	12 t
TNC 65 S-I	65 l/s	C35	3000x2300x2100	-	-	12 t
TNC 80 S-I	80 l/s	C35	3600x2800x1900	-	-	15 t
TNC 100 S-I	100 l/s	C35	3600x2800x1900	-	-	15 t
TNC 125 S-I	125 l/s	C35	3000x2300x2100	3000x2300x2100	-	23.9 t
TNC 150 S-I	150 l/s	C35	3000x2300x2100	3000x2300x2100	3000x2300x2100	35.9 t

Name	Capacity	Concrete quality	Tank 1	Tank 2	Tank 3	Weight
TNC 1,5 S-II	2 l/s	C35	1400x1100x1950	-	-	3.4 t
TNC 3 S-II	3 l/s	C35	1400x1100x1950	-	-	3.4 t
TNC 6 S-II	6 l/s	C35	1400x1100x1950	-	-	3.4 t
TNC 10 S-II	10 l/s	C35	1400x1100x1950	-	-	3.4 t
TNC 15 S-II	15 l/s	C35	3240x1740x1300	-	-	8.4 t
TNC 20 S-II	20 l/s	C35	3240x1740x1300	-	-	8.4 t
TNC 25 S-II	25 l/s	C35	3240x1740x1300	-	-	8.4 t
TNC 30 S-II	30 l/s	C35	3000x2300x1500	-	-	9.5 t
TNC 40 S-II	40 l/s	C35	3000x2300x2100	-	-	12.8 t
TNC 50 S-II	50 l/s	C35	3000x2300x2100	-	-	12.8 t
TNC 65 S-II	65 l/s	C35	3000x2300x2100	-	-	12.8 t
TNC 80 S-II	80 l/s	C35	3600x2800x1900	-	-	16 t
TNC 100 S-II	100 l/s	C35	3600x2800x1900	-	-	16 t
TNC 125 S-II	125 l/s	C35	3000x2300x2100	3000x2300x2100	-	24.8 t
TNC 150 S-II	150 l/s	C35	3000x2300x2100	3000x2300x2100	-	24.8 t

# DESIGN AID – OIL SEPARATOR TANK

## ENVIA TNC, ENVIA TNS, ENVIA TNB

### Introduction

#### How do oil separators work?

Oil separators can be fitted to surface water drainage systems to protect the environment from pollution by oils. They separate the oil from the water, and then retain the oil safely until it is removed. They are installed to contain oil leaks from vehicles and plant and accidental spillages. To be effective, oil separators need to be correctly designed, installed and maintained.

#### Where are separators needed?

Surface water may be contaminated by oil at a number of different sites. These sites need to have measures in place to prevent this oil from polluting the environment. These sites include:

- car parks typically larger than 800 m<sup>2</sup>
- in area or for 50 or more car parking spaces
- smaller car parks discharging to a sensitive environment
- areas where goods vehicles are parked or manoeuvred
- vehicle maintenance areas
- roads
- industrial sites where oil is stored or used
- refuelling facilities
- any other site with a risk of oil contamination.

For small park areas protection we can provide the ENVIA CRC device, easy to install and maintain.

If you do need an oil separator, you will need to consider where it will discharge. It is important to speak to us as early as possible if you plan to discharge to surface water drains, to a watercourse or to the ground, as you might require our consent. In Central Europe any discharge from an oil separator will require consent. We do not issue these consents automatically and, if we allow a discharge, we might impose strict controls on the level of polluting substances in it such as oils. If you install a separator discharging to surface water you will need a Class 1 separator (see page 62)

If your separator will discharge to a public sewer, you must contact your local sewer provider before doing so. For discharges to public sewer you will need a Class 1 or Class 2 separator (see page 62). If your separator will discharge to a surface water sewer that is owned by the sewer provider, you must also contact them before you connect to that sewer.

Drainage from areas such as scrapyards, storage and handling areas for chemicals (solvents, acids etc), and washing bays are likely to be contaminated with substances other than oil, and should normally drain to the foul sewer with the approval of the sewer provider. The local sewer provider might require the discharge to have a separator and you must consult them. Discharge from such areas is not suitable for drainage to surface water drains, a watercourse or to the ground.

Drainage containing detergents should not pass to a separator that discharges to surface water because the detergents prevent the separator from working properly.

### Choosing the right separator

Use the flow chart to help you select the appropriate system for your site. More than one separator might be required on larger sites or a site with many activities. You will need to consider the local circumstances and risk factors including:

- the discharge point of your proposed separator
- the environmental sensitivity of your location
- activities on your site

#### Separator classes

EN 858 refers to two 'classes' of separator, based on performance under standard test conditions.

**Class I separators** are designed to achieve a discharge concentration of less than 5 mg/litre of oil under standard test conditions. These separators are required for discharges to surface water drains and the water environment. Many Class I separators contain coalescing devices, which draw the oil droplets together and facilitate the separation.

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**Class II separators** are designed to achieve a discharge concentration of less than 100 mg/litre of oil under standard test conditions. They are suitable for dealing with discharges where a lower quality requirement applies such as discharges to the foul sewer (but check first with your sewer provider).

Both classes can be produced as 'full retention', 'bypass' or 'forecourt' separators (see below).

The oil concentration limits of 5 mg/litre and 100 mg/litre only apply under standard test conditions. You should not expect separators to always perform within these limits under field conditions. In addition, these levels of oil might be too high in some environmentally sensitive areas to allow the discharge to pass into the water environment without additional treatment.

### Full retention separators

Full retention separators treat the full flow that can be delivered by the drainage system. The 'full flow' is normally equivalent to the flow generated by a rainfall intensity of 65 mm/hour

Full retention separators are used where there is a risk of regular contamination with oil and a foreseeable risk of significant spillages e.g. vehicle maintenance areas and retail fuel forecourts.

You need to consider the flow rates of potential spillages delivered to the separator from the drainage system and the oil storage volume of the separator needs to be sufficient to retain the entire spillage. See Section 9 for more information about preparing for emergencies.

On large sites, some short-term storage upstream of the separator might be an acceptable means of limiting the flow rate and the size of separator needed. Any surface water stored cannot be pumped through the separator unless the separator is specifically designed to receive pumped inflows and a low-shear, non-emulsifying pump is used.

### Bypass separators

Bypass separators fully treat all flows, for the area served, generated by rainfall rates of up to 6.5 mm/hour. This covers most rainfall events. Flows above this rate are allowed to bypass the separator. These separators are used when it is considered an acceptable risk not to provide full treatment for high flows, e.g. where only small spillages can occur and the risk of spillage is small such as on short stay car parks.

In cases where a large spillage might occur, it is not acceptable to use a by-pass separator. The only exception to this is a major trunk road where the size and type of spillage is impossible to foresee and the surface area drained makes it impractical to provide a full retention separator. For major trunk roads a SUDS approach incorporating a number of SUDS techniques is likely to be more appropriate.

On sites where high levels of silt are likely to enter the separator, the build up of silt must not be allowed to compromise the operation of either the separator or the by-pass device. On such sites (e.g. major trunk roads and quarries) an adequately sized silt separation chamber should be installed upstream of the separator and appropriate management systems put in place to monitor the situation and remove the silt when necessary. The use of SUDS techniques can minimise the amount of silt in the surface water run-off.

### Forecourt separators

This document uses the term 'forecourt' to refer to all forms of liquid-fuel dispensing outlets, both retail and non-retail, including those where only diesel is dispensed. A forecourt separator must be a 'full retention' separator, large enough to serve the catchment area of the site and have a sufficient oil storage volume to retain any foreseeable spillages.

It is important to install a forecourt separator of an appropriate size. On a forecourt where tanker deliveries are received, a separator with an oil storage capacity of 7,600 litres will meet the requirements of BS EN 858-2, clause 4.3.6. If a smaller unit is proposed, the size should be determined by undertaking a risk assessment incorporating catchment size, potential spillages during delivery, and other risks such as safety issues. If the compartment size of the tanker that delivers to your site is greater than 7,600 litres your separator should be sized accordingly. For detailed information on the design of fuel dispensing forecourts see Reference 10.

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### Sizing of separators

#### General

The sizing of light liquid separators shall be based on the nature and flow rate of liquids to be treated and will need to take account of:

- maximum flow rate of rain water
- maximum flow rate of waste water (trade effluent)
- density of light liquid
- presence of substances that may impede separation (e.g. detergents)

The size of the ENVIA TNC, TNP and TNB oil separators shall be calculated from the following formula:

$$NS = (Q_r + f_x * Q_s) * f_d$$

NS	nominal size of the oil separator
$Q_r$	maximum flow rate of rainwater, in l/s
$Q_s$	maximum flow rate of wastewater, in l/s
$f_d$	density factor for the relevant light liquid
$f_x$	impediment factor depending on the nature of the discharge

#### Impediment factor $f_x$

The impediment factor  $f_x$  allows for unfavourable separating conditions, e.g. where detergents are present in the wastewater. The minimum recommended impediment factors are listed below.

Name	$f_x$
a, to treat waste water (trade effluent) from industrial processes, vehicle washing, cleansing of oil covered parts or other sources, e.g. petrol station forecourts	2
b, to treat oil contaminated rainwater (run-off) from impervious areas, e.g. car parks, roads, factory yard areas	not relevant as $Q_s=0$ (only rainwater)
c, to retain any spillage of light liquid and to protect the surrounding area	1

#### Density factor $f_d$

The density factor  $f_d$  allows for differing densities of light liquids when using different combinations of system components. Additional information given in annex A.

Density g/cm <sup>3</sup>	up to 0,85	over 0,85 up to 0,90	over 0,90 up to 0,95
	Density factor $f_d$		
S-II-P	1	2	3
S-I-P <sup>a</sup>	1	1,5	2
S-II-I-P <sup>b</sup>	1	1	1

<sup>a</sup> For class I separators operating by gravity only, use  $f_d$  for class II separator.

<sup>b</sup> For class I and II separators.

#### Cleansing agents

Cleansing agent manufacturers shall submit a declaration stating that the products is free from organically combined halogen compounds or BTX aromas. Only cleansing agents which form temporary stable emulsions with light liquids and then de-emulsify after cleaning process should be used. Instructions for use shall also be provided, together with the effects of mixing with other cleansing agents, particularly regarding the separation process.

#### Combined drainage of rainwater and wastewater

If a separator is receiving rainwater and wastewater, e.g. from vehicle washing, and the two maximum flows are not expected to occur simultaneously, then the separator can be sized for the higher flow rate.

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## ENVIA TNC, ENVIA TNS, ENVIA TNB

### Wastewater

The wastewater inflow in accordance with 4.1 cas a., shall be calculated as the sum of the contributing flows from the following formula:

$$Q_s = Q_{s1} + Q_{s2} + Q_{s3} + \dots$$

where

$Q_{s1}$  is the flow from draw-off point, in l/s;

$Q_{s2}$  is the flow from car washes, in l/s;

$Q_{s3}$  is the flow from high pressure cleaning units, in l/s.

Any other contributing flow shall be added.

### Draw-off points

Where is not possible to determinate the maximum flow from draw-off points by measurement, it may be estimated by using Table 4. Table 4 takes account the probability of the likelihood of all draw-off points, irrespective of size, being used at the same time. Calculations should be based on the flow rates from the largest draw-off points first.

Density g/cm <sup>3</sup>	Flows from draw-off point $Q_{s1}$ in l/s				
	1st point	2nd point	3rd point	4th point	5th point and subsequent
Nominal diameter					
DN15	0,50	0,50	0,35	0,25	0,10
DN20	1,00	1,00	0,70	0,50	0,20
DN25	1,70	1,70	1,20	0,85	0,30

a Values given for supply pressure of about 4 to 5 bar, other supply pressures may cause different  $Q_{s1}$  values.

Example of  $Q_{s1}$  for 1 DN15, 1 DN20 and 2 DN25 points:

1st point	DN25 = 1,7 l/s
2nd point	DN25 = 1,7 l/s
3rd point	DN20 = 0,7 l/s
4th point	DN15 = 0,25 l/s
total $Q_{s1}$	= 4,35 l/s

### Automatic car washes

Wastewater from low pressure car washes (with a back pressure up to 20 bar) where only carriage bodies and chassis are cleaned does not usually contain significant amount of light liquid.

Should there be wastewater from high pressure car washes (with a back pressure up to 20 bar) and/or any additional washing procedures which will result in wastewater containing light liquids, then for every car wash place or drive through a wastewater value  $Q_{s2}$  of 2 l/s plus wastewater value  $Q_{s3}$  for each high pressure unit in accordance with 4.3.4.3. shall be included. When the car wash place is multiple used, e.g. for maintenance, for plants with higher quantities waste water i.e. without mechanical cleaning devices, the actual quantity of waste water has to be considered.

A reduction of the wastewater flow rate  $Q_{s2}$  for plants with water recirculation and overflow into a sewer is not admissible.

### High pressure units

Irrespective of the effective use of water from a high pressure unit, a wastewater value  $Q_{s3}$  of 2 l/s shall be considered. If there is more than one high pressure unit an additional 1 l/s shall be included for each unit.

If a high pressure unit is being used together with an automatic car wash for this unit a wastewater value  $Q_{s3}$  of 1 l/s shall be included.

### Rainwater flow rate

For category b, uses (see 4.1), the size of the separator will depend on the design, rainfall intensity and the catchment area draining to the separator.

The maximum rainwater flow rate  $Q_r$  in l/s shall be calculated using equation (4) in accordance with EN 752-4

$$Q_r = \Psi * i * A$$

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where

- i rainfall intensity, in l/s\*ha  
 A area receiving rainfall, measured horizontally, in ha  
 $\Psi$  run-off coefficient, dimensionless

In most cases the value of the run-off coefficient can be taken as  $\Psi = 1$ .

The rainfall intensity is mainly depends on the analysis of local rainfall data and shall be adopted according to local regulations. For very large rainfall receiving areas, the rainwater flow can be divided by catchment areas and drained into several separators.

NOTE Surface areas covered by a canopy will receive reduced rainfall. For purpose of the equation, the value A may be reduced for these areas.

### Spillages

For any spillage of light liquid and to protect the surrounding area uses separator system shall be sized sufficiently to retain any spillage of liquid. A higher storage capacity may be necessary.

### Quantity of light liquid

When, in certain cases, a higher light liquid storage capacity than that specified in EN 8585-1 is required, e.g. when more than the usual amount of light liquid is expected, the following options can be considered:

- using a larger nominal size separator than calculated or
- creating light liquid storage capacity outside the separator or
- emptying the separator more frequently than usually

### Special cases

Separators operating under special conditions, e.g. for transformer stations, compressor stations, shall be reviewed on a site-specific basis. Separators receiving wastewater from trade or industrial manufacturing processes may need to be specially sized after investigating the composition and properties of the wastewater.

### Sludge traps

Sludge traps shall only be fed from the design inlets and not positioned to allow flow directly from the surface.

NOTE This does not apply to drainage channel type silt collection, e.g. in car washes, to retain solids.

Separator systems shall incorporate a sludge trap either as a separate unit or as an integral part of the separator.

Quantity of sludge anticipated for e.g.:		Minimum sludge trap volume liter	Note
None	• condensate	Not required	-
Small	• processing waste water defined small sludge volume • all rainwater collecting areas where a small amount of silt from traffic or similar appears, i.e. catchment basins on petrol tank areas and covered filling stations	100x	Not for separators smaller than or equal NS 10, expect for covered car parks.
Medium	• filling stations, car wash by hand, part washing • bus washing places • waste water from garages, vehicle parking lots • power plants, machinery plants	200x	Minimum volume of sludge traps 600 l
High	• washing plants for site vehicles, site machines, farm machines • truck wash places	300x	Minimum volume of sludge traps 600 l
	• automatic car washes i.e. roll-over, drive-through	300x	Minimum volume of sludge traps 5000 l

# DESIGN AID – OIL SEPARATOR TANK

## ENVIA TNC, ENVIA TNS, ENVIA TNB

The PURECO oil separators marking is made up of the following components:

### TNC 100-2-A

#### First tag

TN means tank third letter indicates the material

**TNC** concrete

**TNS** steel

**TNB** plastic box

#### Second tag

Indicates the capacity of the separator

if concrete 1-150 l/s

if steel 1-300 l/s

if box 0,5-10 l/s

#### Third tag

Indicates the efficiency

5 mg/l FOG

2 mg/l FOG

#### Fourth tag

Indicates the size of sludge trap

A is with 100x sludge trap

P is with 200x sludge trap

M is with 300x sludge trap

(only for request)

#### Example

Description: 6 500 m<sup>2</sup> park area in Budapest, part of the car park is an Automatic car wash. The recipient is a natural watercourse.

	Select the capacity	How to?	Example
Step 1.	$Q_r$ Calculate the max flow rate of rain $Q_r = \Psi * i * A$	Select the surface run off factor from annex, if you don't have detailed information use 1, Select rain intensity from annex find on page 287	$0,9 \times 220 \times 0,65 = 128,7$ l/s
Step 2.	$Q_s$ Wastewater quantity $Q_s = 2$ l/s	x100   x50   x20   x10   x5	$128,7 + 2 \times 2 = 132,7$
Step 3.	Multiply by: Peak flow coefficient as stated in BS EN 1825	1, if your density up to 0,85 if higher please select the value from density factor table on page 58	$132,7 \times 1 = 132,7$ l/s
Step 4.	Round up to available NS size ENVIA TNC 1-150 ENVIA TNS 1-300 ENVIA TNB 0,5-10	TNC concrete separator, TNS steel separator TNB plastic separator	round up to 150 selected material is steel, capacity is 150 l/s
	Select Class	How to?	Example
Step 5.	Select your recipient	For Public Sewer inlet choose 5 mg/l FOG (Class II) For Surface Water inlet 2 mg/l FOG (Class I) On page 62 you will find detailed table for selection	The recipient is a natural watercourse TNS 150-2 (Class I)
	Select Sludge Trap	How to?	Example
Step 6.	Select sludge trap size	- Roads x100 marked with A - Park area x200 marked with P - Car wash x300 marked with M (only for request) please select the value from table on page 60	Water collection area is a parking area TNS 150-2-P
Final	The selected oil separator	The selected oil separator is a steel oil separator with 150 l/s capacity, efficiency is 2 mg/l FOG, the sludge trap size is 200x	TNS 150-2-P

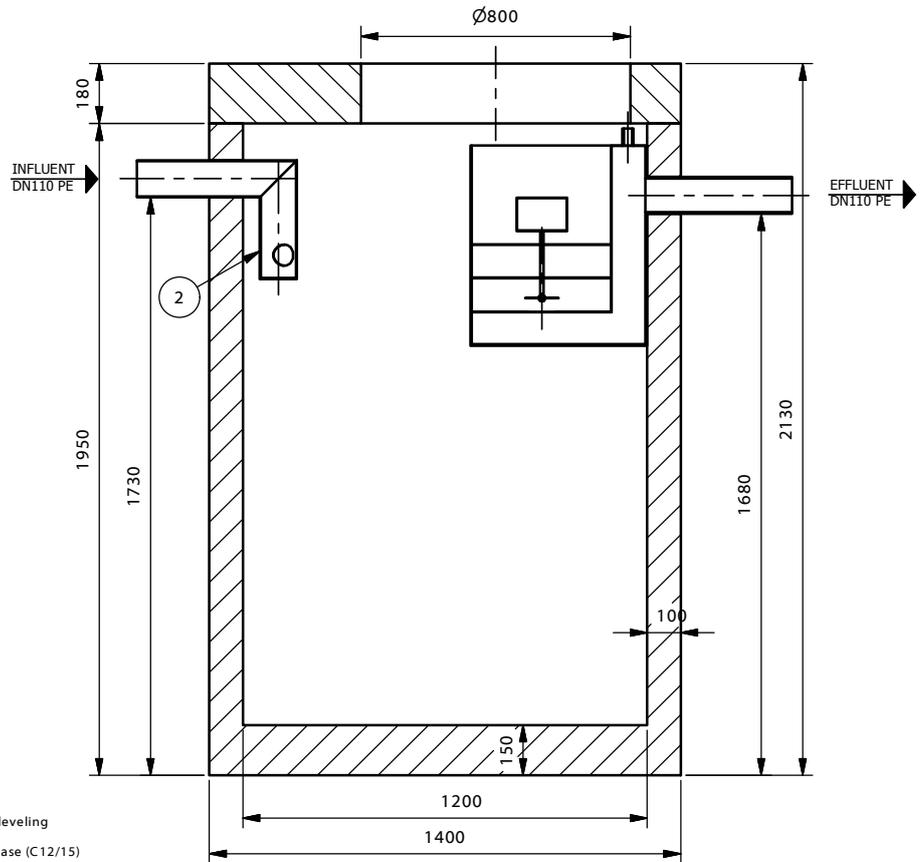
# DESIGN AID – OIL SEPARATOR TANK

## ENVIA TNC, ENVIA TNS, ENVIA TNB

	Application	Remarks	Treatment before discharge into		Example
			P.S. <sup>a</sup>	S.W. <sup>a</sup>	
1	Rainwater from the petrol station	May not contain detergents of cleaning activities	S-II-P	S-I-P	Additional storage capacity for light liquid may be required.
2	Rainwater from oil storage and oil transfer territories		S-II-P S-IIb-P <sup>b</sup>	S-I-P	
3	Rainwater from vehicle parks etc.		S-II-P S-IIb-P <sup>b</sup>	S-I-P	
4	Rainwater from roads etc. in special cases	e.g. water catchment areas	S-II-P S-IIb-P <sup>b</sup>	S-I-P	
5	Cleaning (spillage and leakage) floors of work-shops, test centres, factories etc.				Use of absorbents.
5.1	With use of cleaning agents		S-I-P		Collect spills and drains on dry materials.
5.2	Without use of cleaning agents		S-II-P		
6	Vehicle wash				
6.1	By hand	Cleaning only car surfaces, cleansing agents free of hydrocarbons	S-P		
6.2	Automatic car washes	Cleaning only car surfaces, including underwash (low pressure), cleansing agents free of hydrocarbons	S-II-P		
6.3	By high pressure cleaner				
6.3.1	Cleaning only vehicle surfaces without oil contamination	Cleansing agents free of hydrocarbons	S-P		It is advisable to re-use the treated wastewater.
6.3.2	Cleaning vehicle surfaces with oil contamination				
6.4	Underwash		S-I-P <sup>c</sup>		
6.5	Engines		S-II-EBS-P		
6.6	Self-service by high-pressure cleaner				
7	Cleaning (expect car wash)	Cleaning engines or parts			It is advisable to re-use the treated wastewater.
7.1	With high-pressure cleaner		S-I-P S-II-EBS-P		
7.2	With rotocleaner		S-I-EBS-P		
8	Removal of paraffin wax or similar, e.g. from new vehicles, including anti-rust treatment		S-II-EBS-P		
9	Scrapyards		S-II-P		Collect spills and drains on dry materials, to avoid water pollution.
10	Soil treatment		S-II-P		
11	Treatment (plans) for sludge and light liquids from separators		S-I-P		
<sup>a</sup>	After treatment the effluent is discharged in a public sewer (P.S.) or in surface water (S.W.). Effluents may be discharged if the quality is conform to the discharge standard required by local authorities				
<sup>b</sup>	Subject to local regulations				
<sup>c</sup>	- pressure less than 60 bar - pH neutral - temperature less than 60 °C - using of cleansing agents in accordance 4.3.2.3				
S	Sludge trap				
I	Class I separator				
II	Class II separator				
IIb	Class II bypass separator				
P	Sampling shaft				
EBS	Emulsion break system or further treatment				

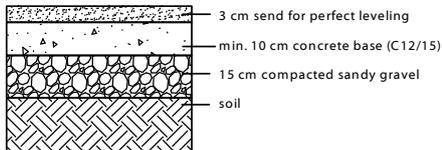
Discharge into surface water directly from the separator is not allowed. In very exceptional circumstances and with the agreement of the local authority the discharge into surface water with additional treatment after the separator may be permitted.

A-A ( 1 : 20 )

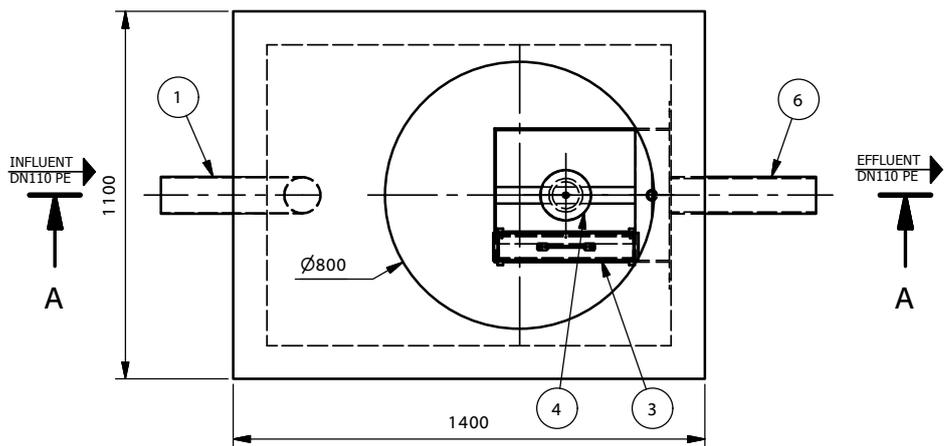


1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

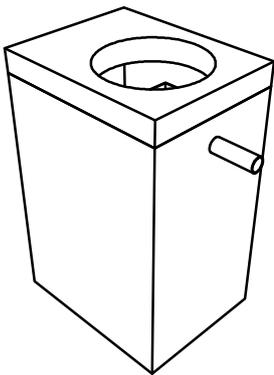
RECOMMENDED ORDER OF LAYERS:



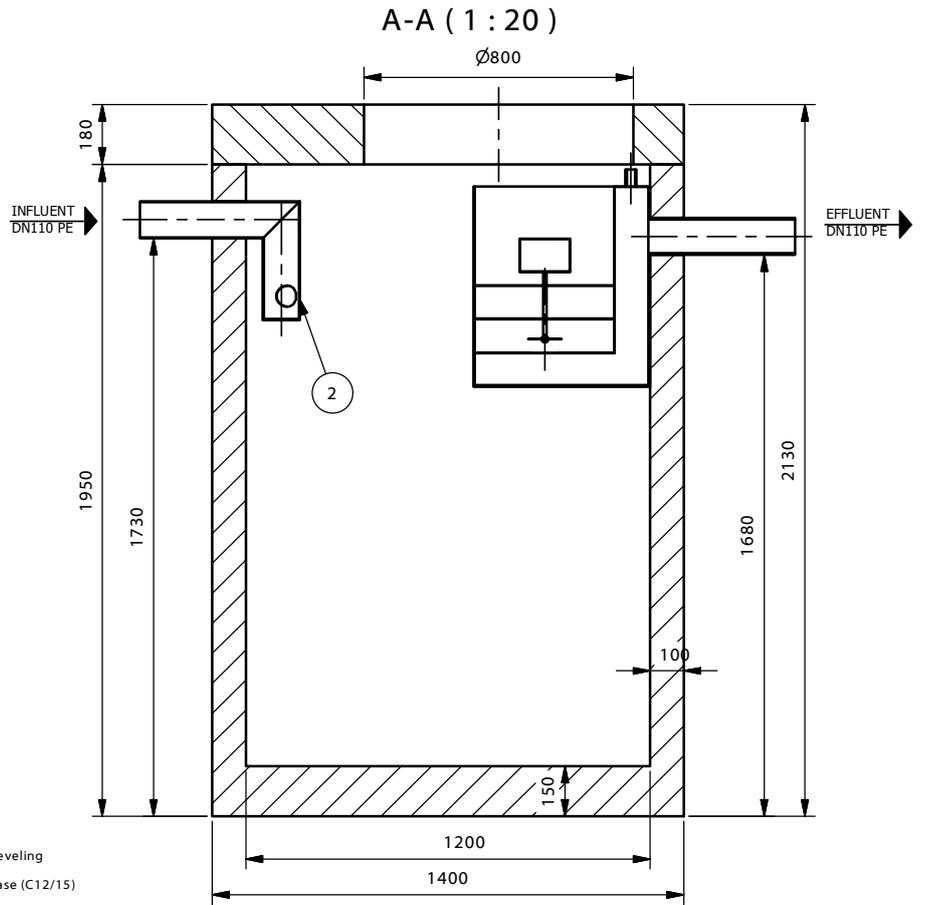
TOP VIEW ( 1 : 20 )



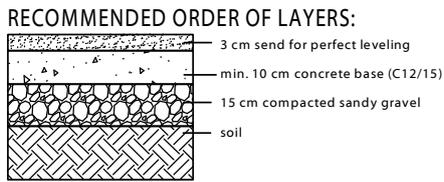
TNC 1,5-5-A



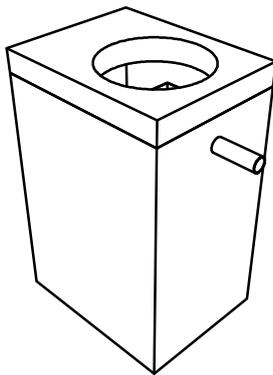
Cleaning capacity:	1,5	l/s
Efficiency:	5	mg/l FOG
Max element weight:	2,4	t
Total weight:	3,1	t



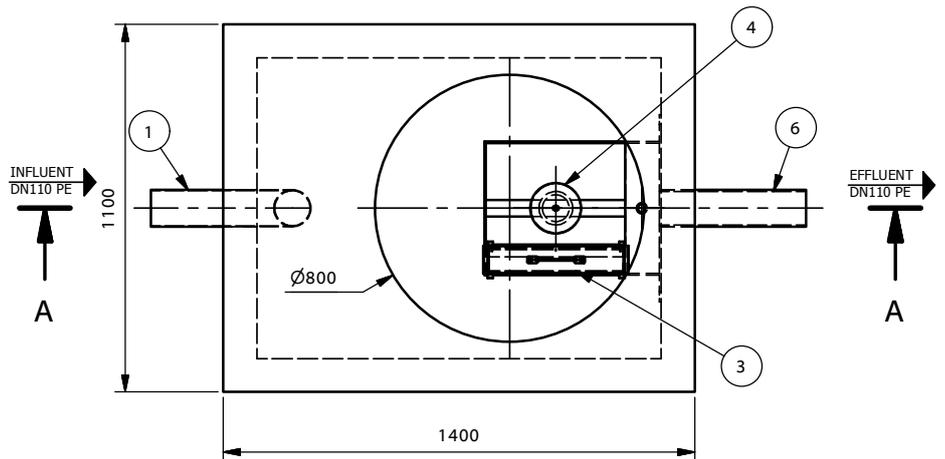
- 1. Influent pipe
- 2. Diffuser
- 3. Coalescent filter
- 4. Automatic closing device
- 5. Sludge level regulator
- 6. Effluent pipe
- 7. Pre-filter (only 2 mg/l device)



TNC 3-5-A



TOP VIEW (1 : 20)



www.pureco.hu

**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

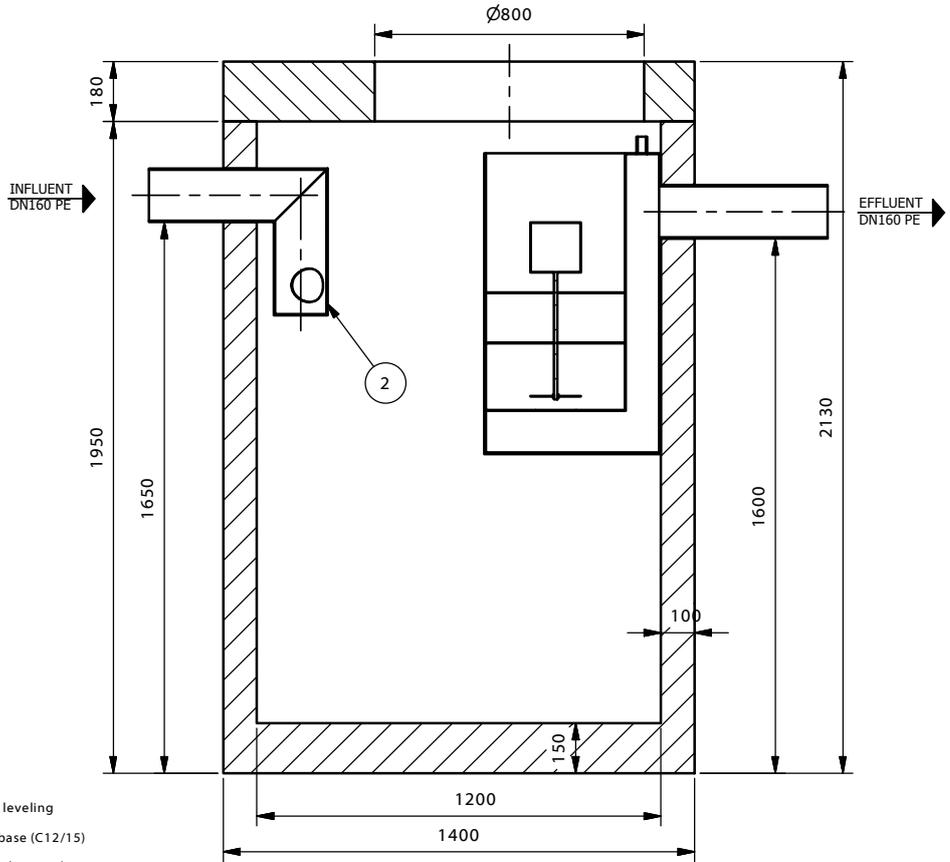
TYP:

**TNC 3-5-A**  
Informational drawing

M= 1:20

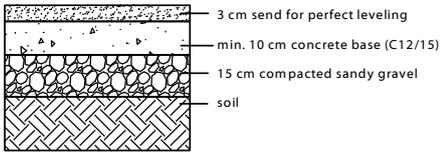
Cleaning capacity:	3	l/s
Efficiency:	5	mg/l FOG
Max element weight:	2,4	t
Total weight:	3,1	t

A-A ( 1 : 20 )

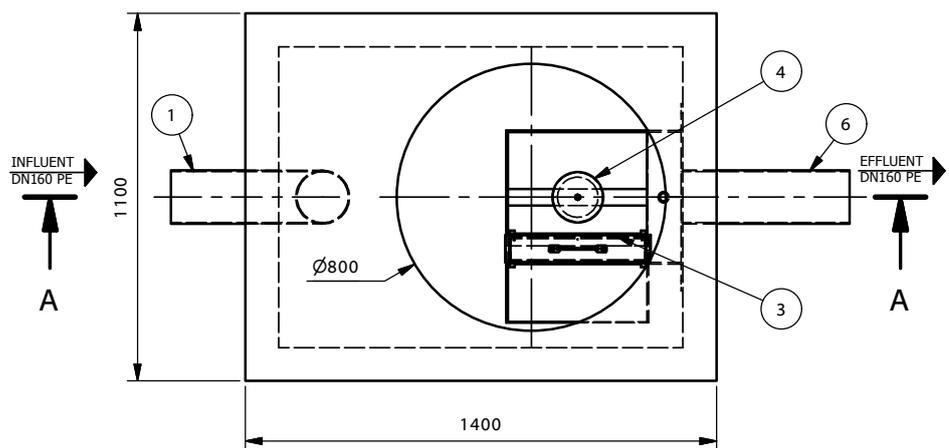


- 1. Influent pipe
- 2. Diffuser
- 3. Coalescent filter
- 4. Automatic closing device
- 5. Sludge level regulator
- 6. Effluent pipe
- 7. Pre-filter (only 2 mg/l device)

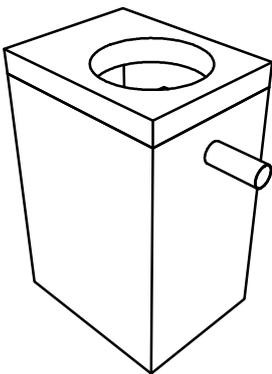
RECOMMENDED ORDER OF LAYERS:



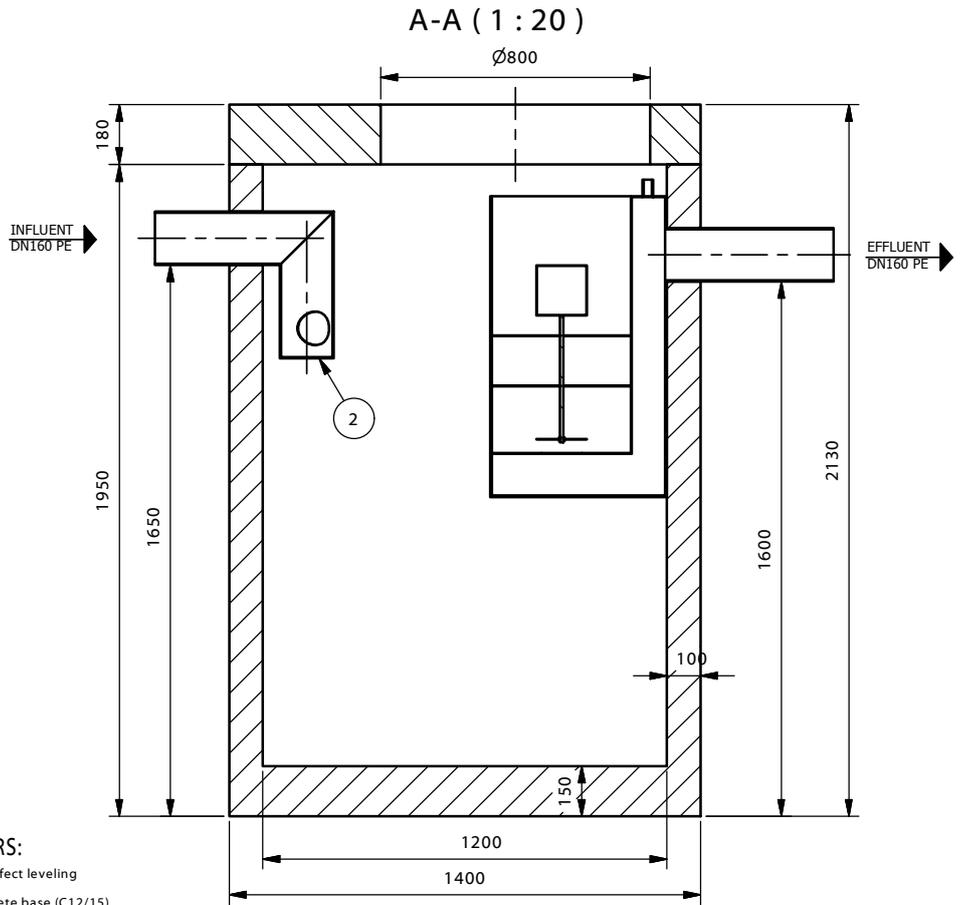
TOP VIEW ( 1 : 20 )



TNC 6-5-A

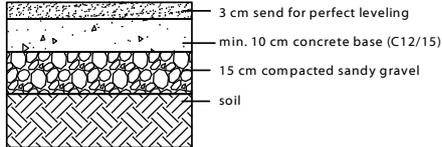


Cleaning capacity:	6	l/s
Efficiency:	5	mg/l FOG
Max element weight:	2,4	t
Total weight:	3,1	t

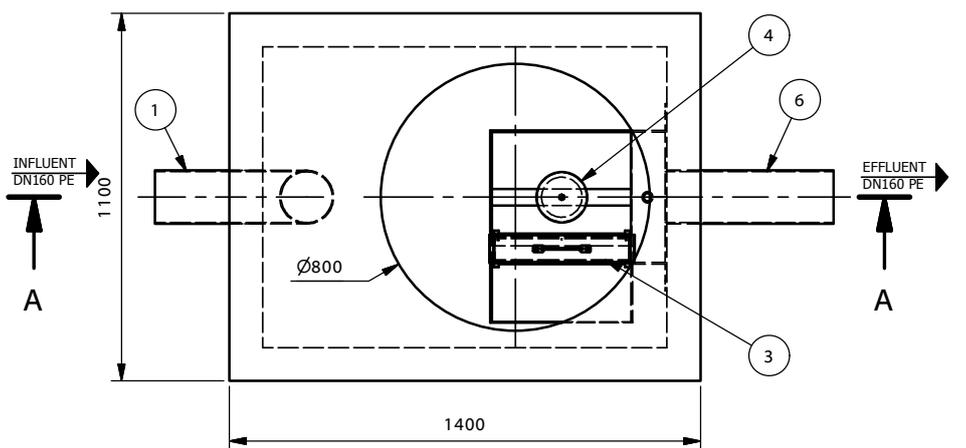


1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

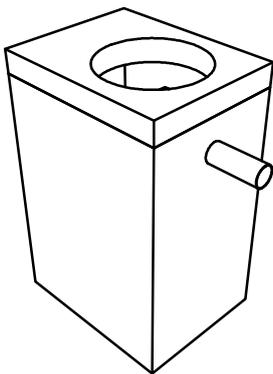
**RECOMMENDED ORDER OF LAYERS:**



**TOP VIEW ( 1 : 20 )**



**TNC 10-5-A**



[www.pureco.hu](http://www.pureco.hu)

**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

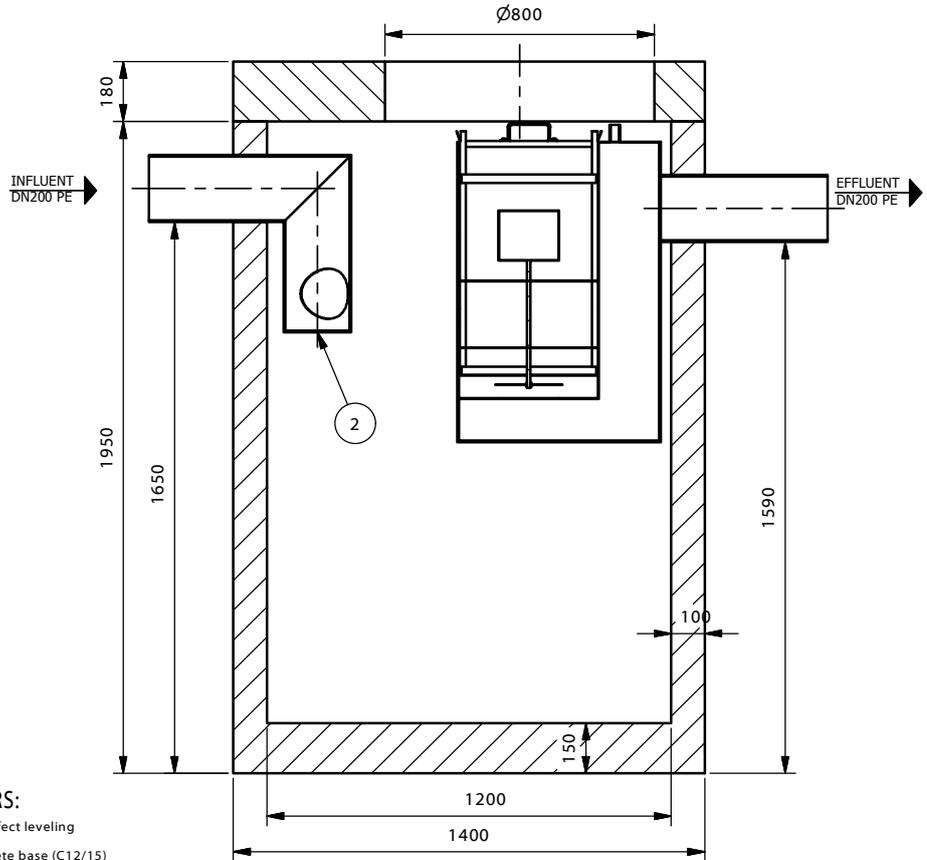
TYP:

**TNC 10-5-A**  
Informational drawing

M= 1:20

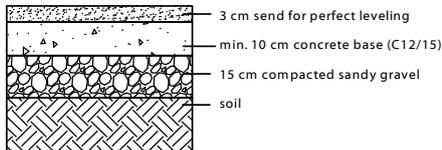
Cleaning capacity:	10	l/s
Efficiency:	5	mg/l FOG
Max element weight:	2,4	t
Total weight:	3,1	t

A-A ( 1 : 20 )

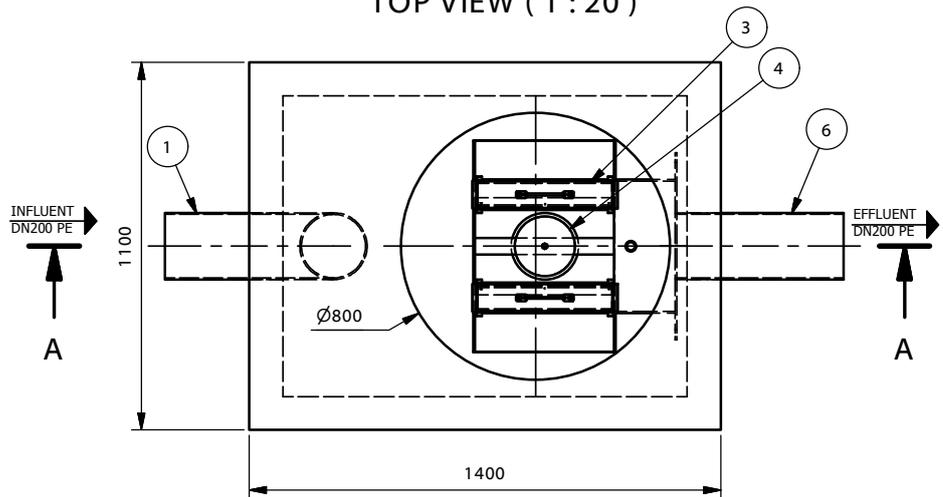


1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

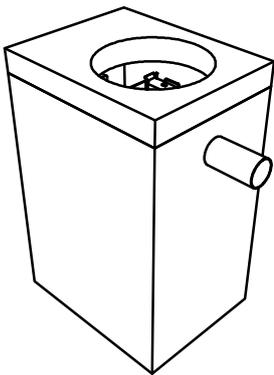
RECOMMENDED ORDER OF LAYERS:



TOP VIEW ( 1 : 20 )

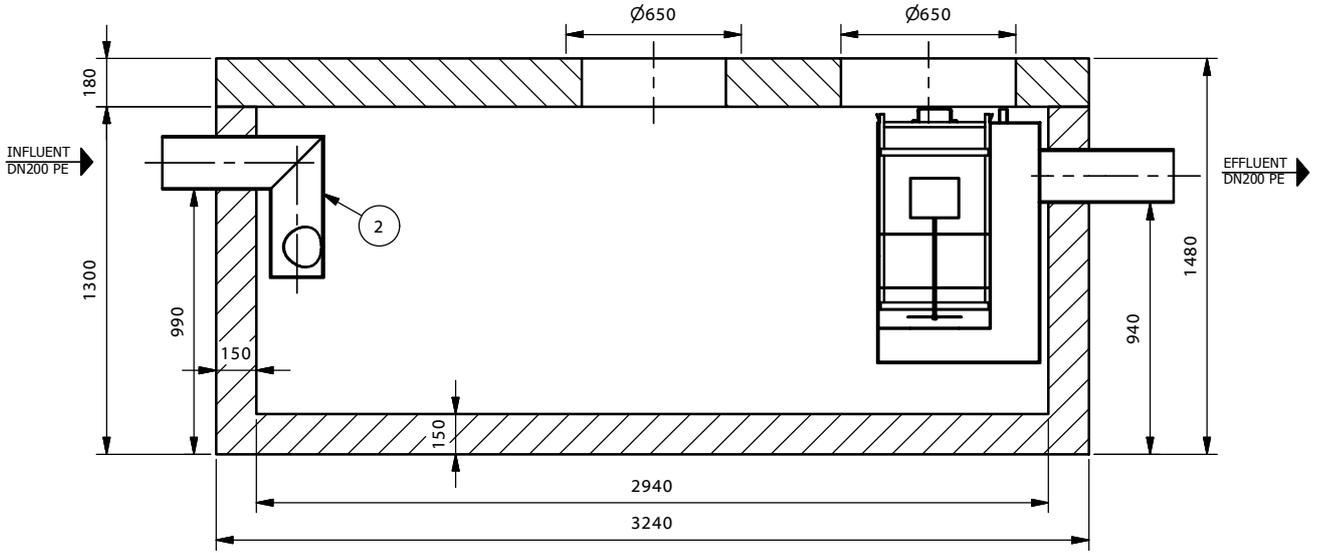


TNC 15-5-A

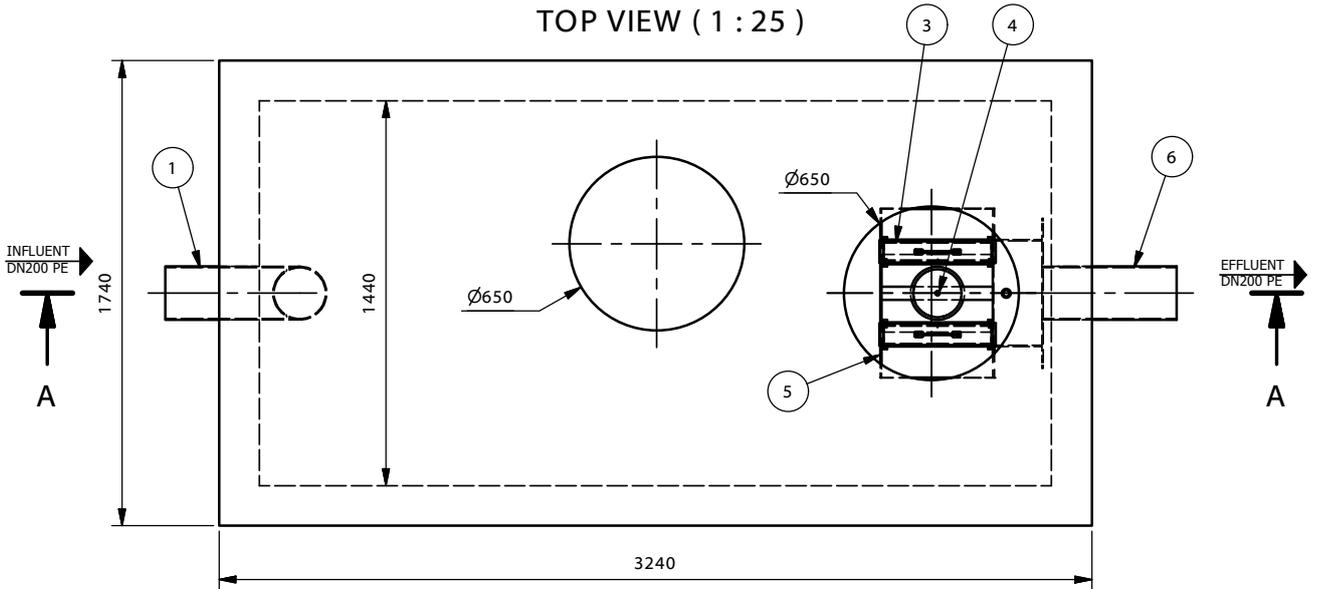


Cleaning capacity:	15	l/s
Efficiency:	5	mg/l FOG
Max element weight:	3,1	t
Total weight:	2,4	t

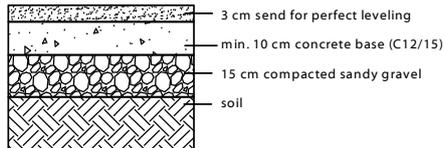
A-A ( 1 : 25 )



TOP VIEW ( 1 : 25 )

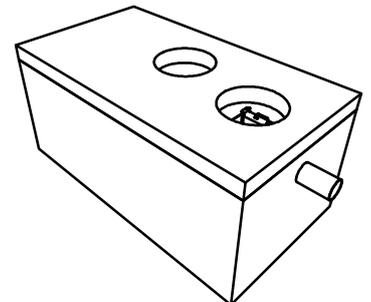


RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

TNC 20-5-A



www.pureco.hu

ENVIA TNC Oil- and light liquid separator with sludge trap in concrete shaft

TYP:

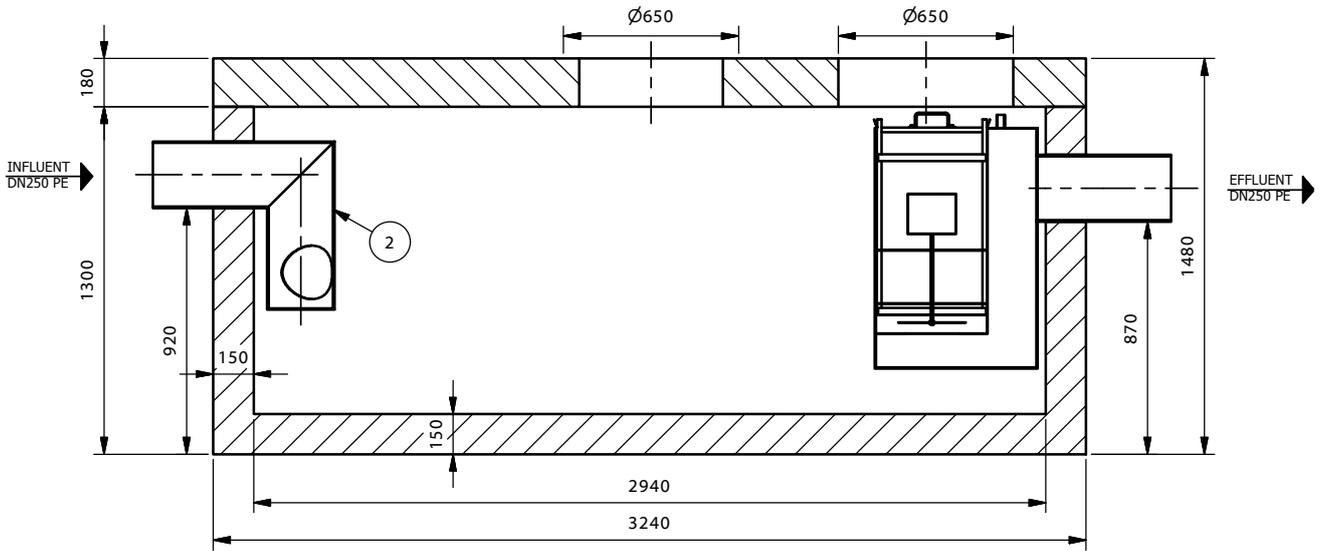
TNC 20-5-A

Informational drawing

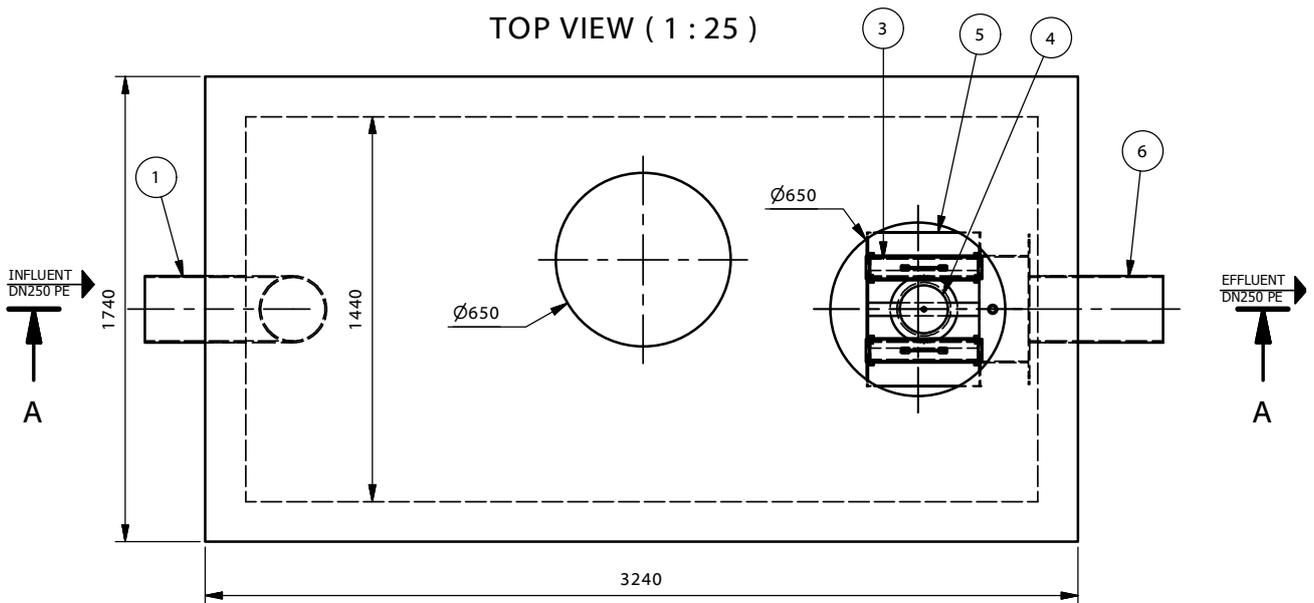
M= 1:25

Cleaning capacity:	20	l/s
Efficiency:	5	mg/l FOG
Max element weight:	5,7	t
Total weight:	8,0	t

A-A ( 1 : 25 )

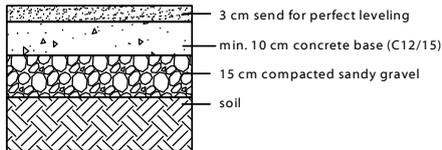


TOP VIEW ( 1 : 25 )

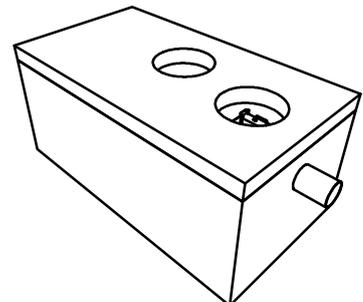


TNC 25-5-A

RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)



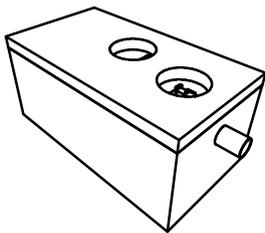
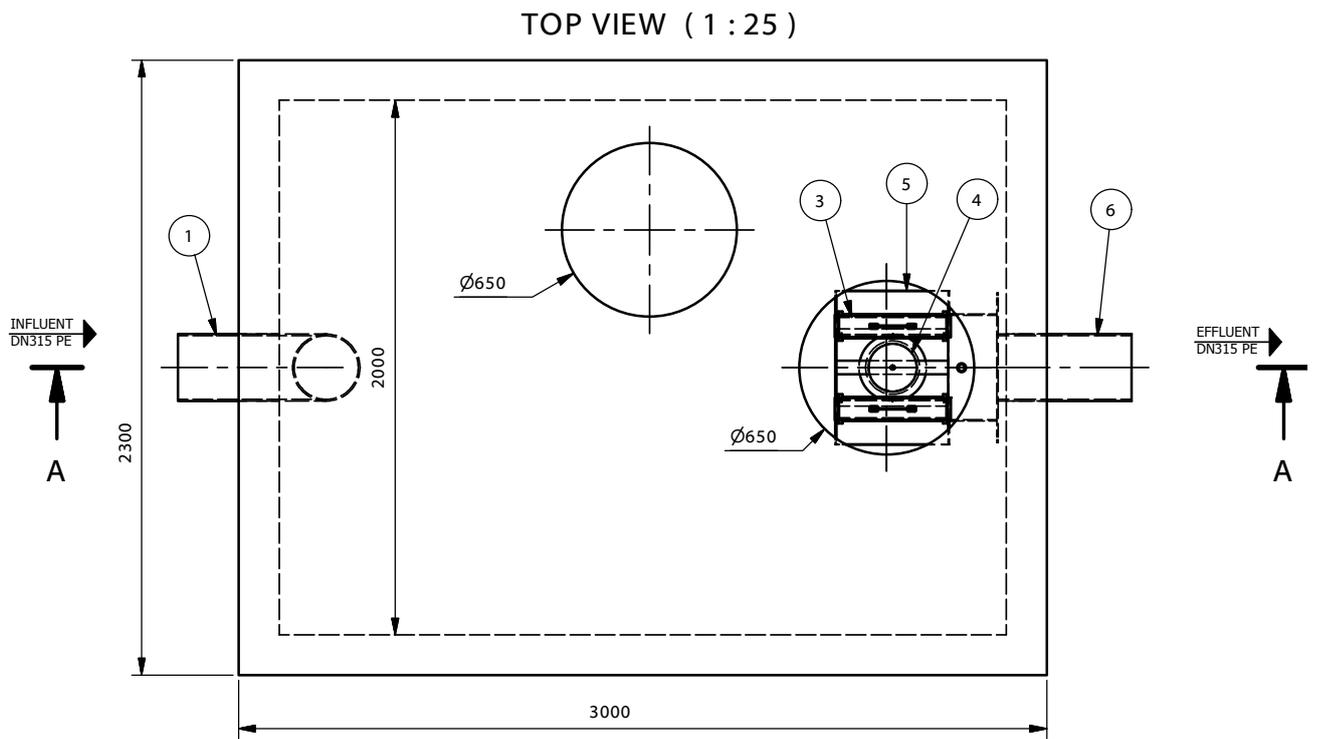
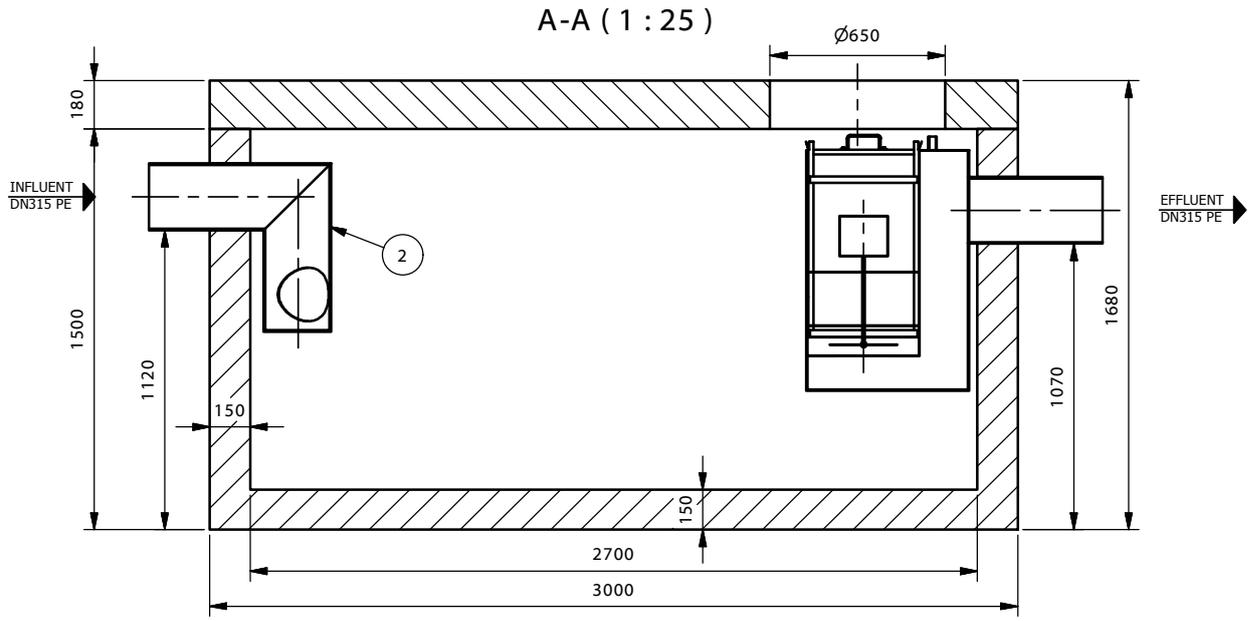
www.pureco.hu

**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

TNC 25-5-A  
Informational drawing

M= 1:25

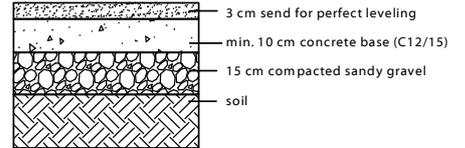
Cleaning capacity:	25	l/s
Efficiency:	5	mg/l FOG
Max element weight:	5,7	t
Total weight:	8,0	t



TNC 30-5-A

1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

RECOMMENDED ORDER OF LAYERS:



www.pureco.hu

ENVIA TNC Oil- and light liquid separator with sludge trap in concrete shaft

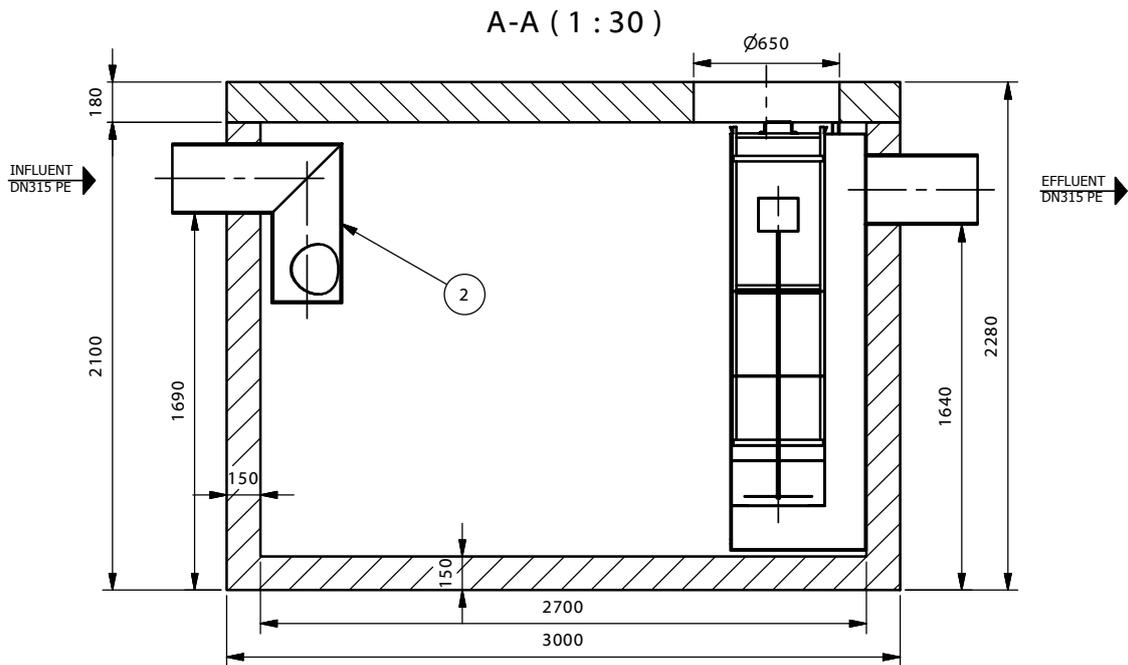
TYP:

TNC 30-5-A

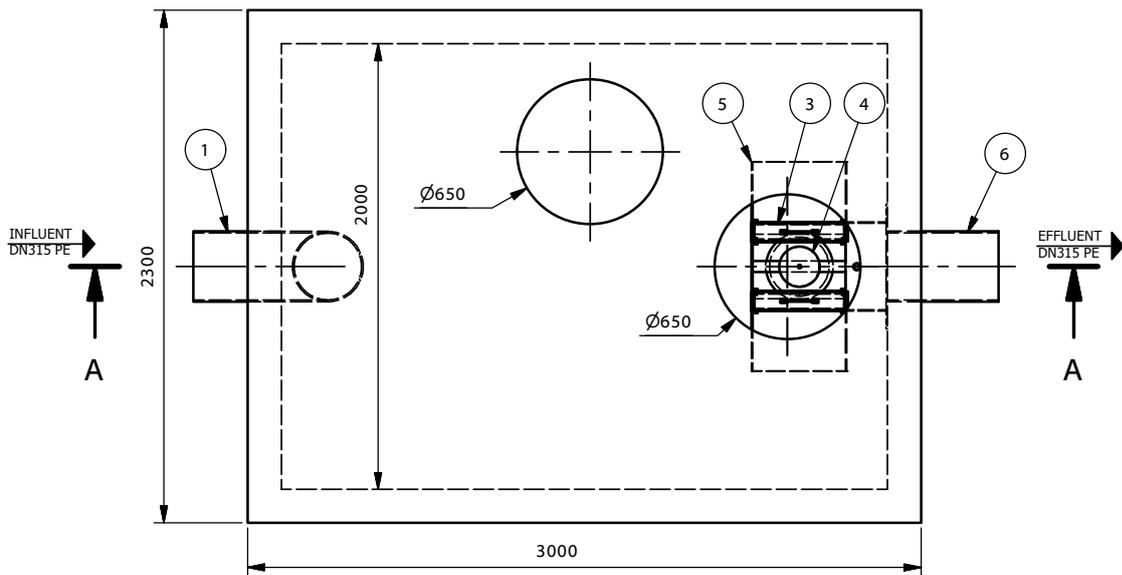
Informational drawing

M= 1:25

Cleaning capacity:	30	l/s
Efficiency:	5	mg/l FOG
Max element weight:	7,0	t
Total weight:	9,9	t

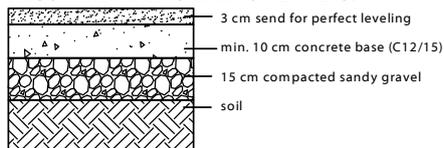


TOP VIEW ( 1 : 30 )

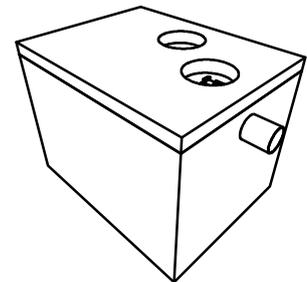


TNC 40-5-A

RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)



www.pureco.hu

**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

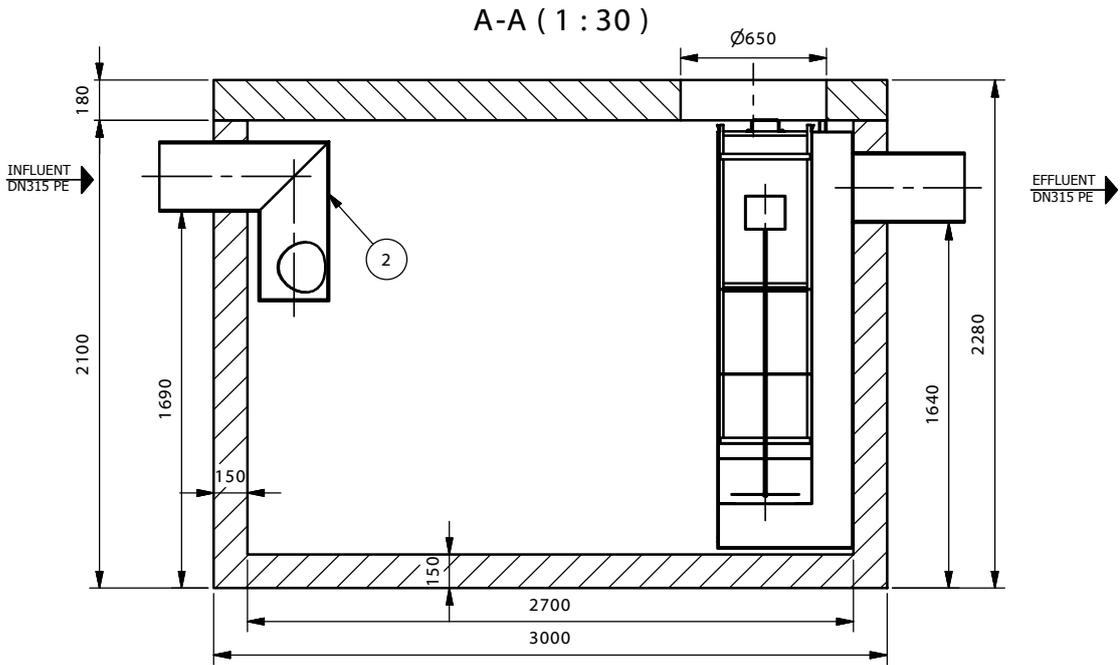
TYP:

TNC 40-5-A

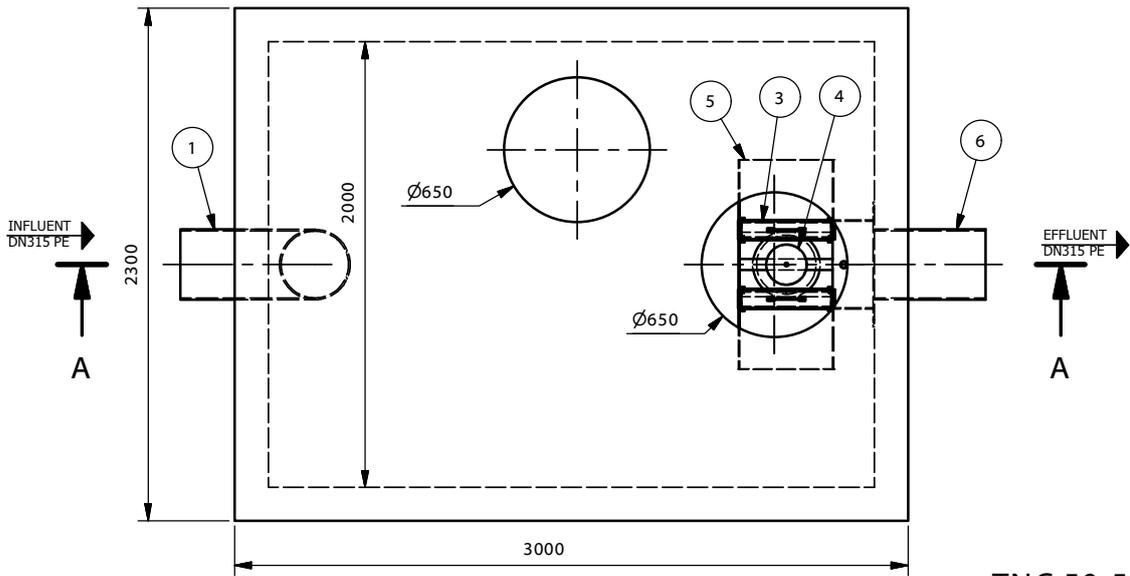
Informational drawing

M= 1:30

Cleaning capacity:	40	l/s
Efficiency:	5	mg/l FOG
Max element weight:	9,1	t
Total weight:	12,0	t

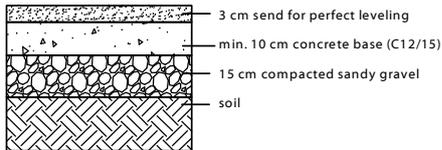


TOP VIEW ( 1 : 30 )

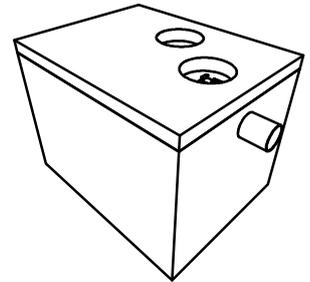


TNC 50-5-A

RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)



www.pureco.hu

**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

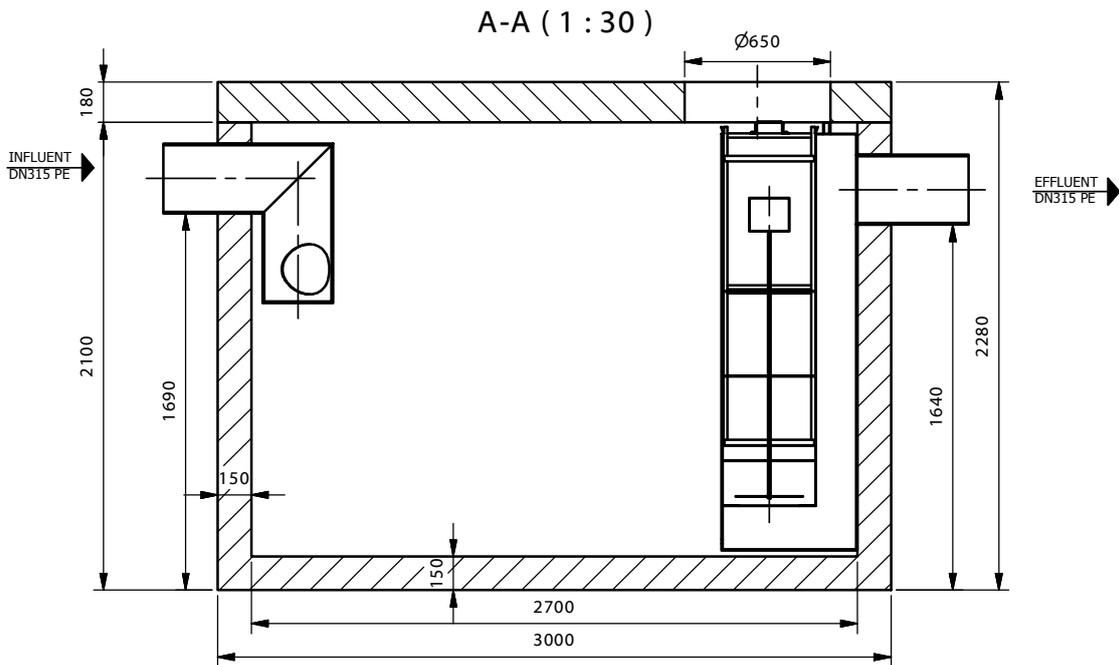
TYP:

TNC 50-5-A

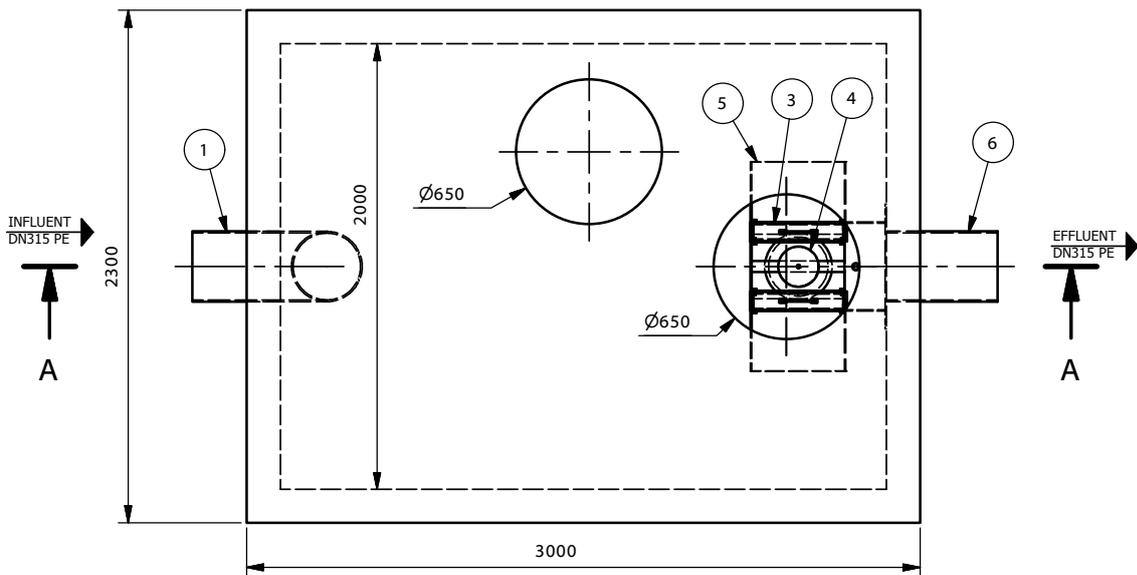
Informational drawing

M= 1:30

Cleaning capacity:	50	l/s
Efficiency:	5	mg/l FOG
Max element weight:	9,1	t
Total weight:	12,0	t

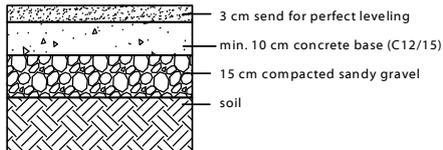


TOP VIEW ( 1 : 30 )

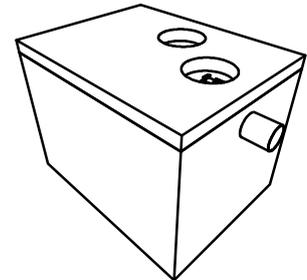


TNC 65-5-A

RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)



www.pureco.hu

**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

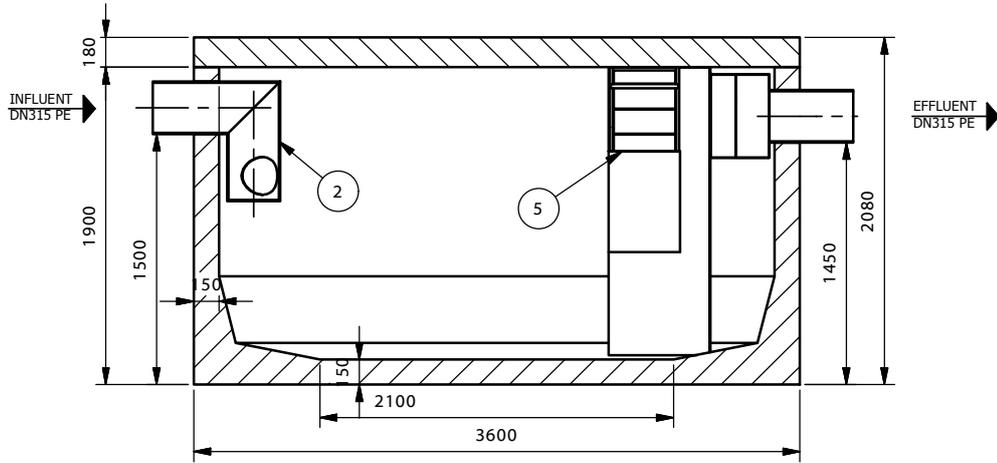
TYP:

**TNC 65-5-A**  
Informational drawing

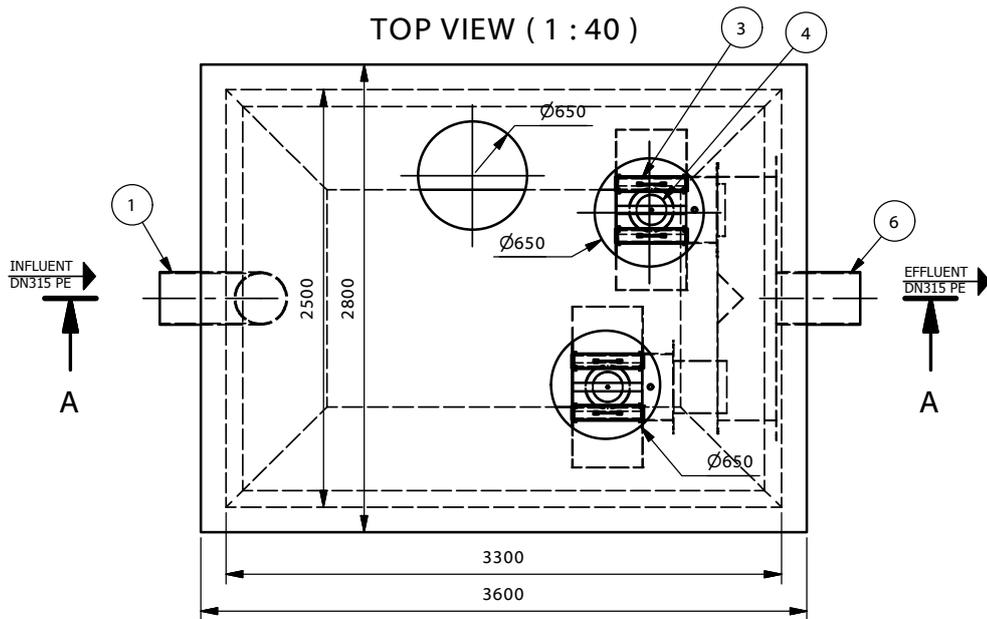
M= 1:30

Cleaning capacity:	65	l/s
Efficiency:	5	mg/l FOG
Max element weight:	9,1	t
Total weight:	12,0	t

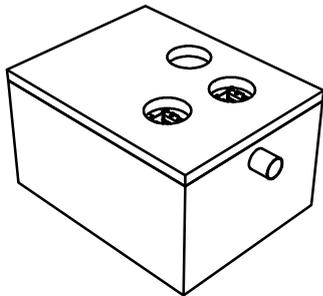
A-A ( 1 : 40 )



TOP VIEW ( 1 : 40 )

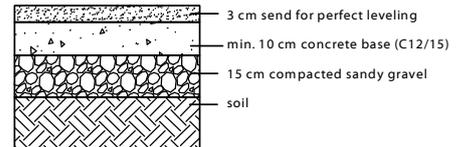


TNC 80-5-A



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

RECOMMENDED ORDER OF LAYERS:



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**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

TYP:

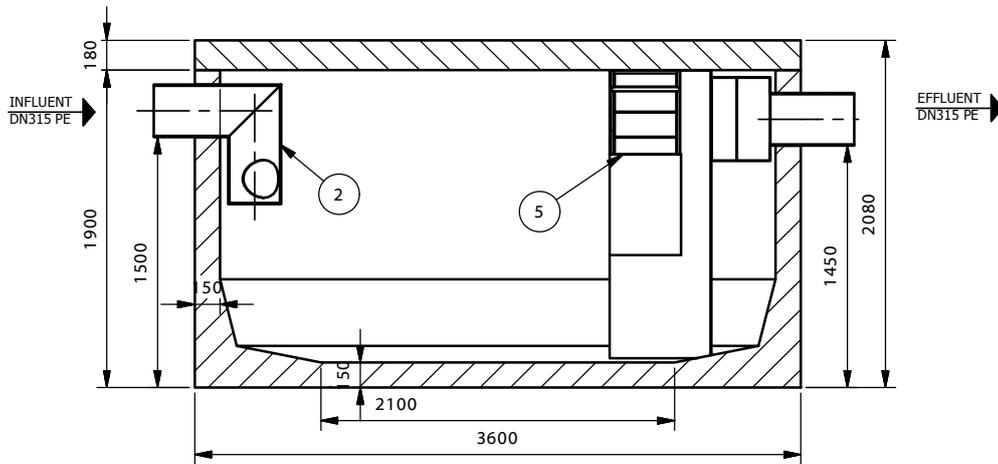
TNC 80-5-A

Informational drawing

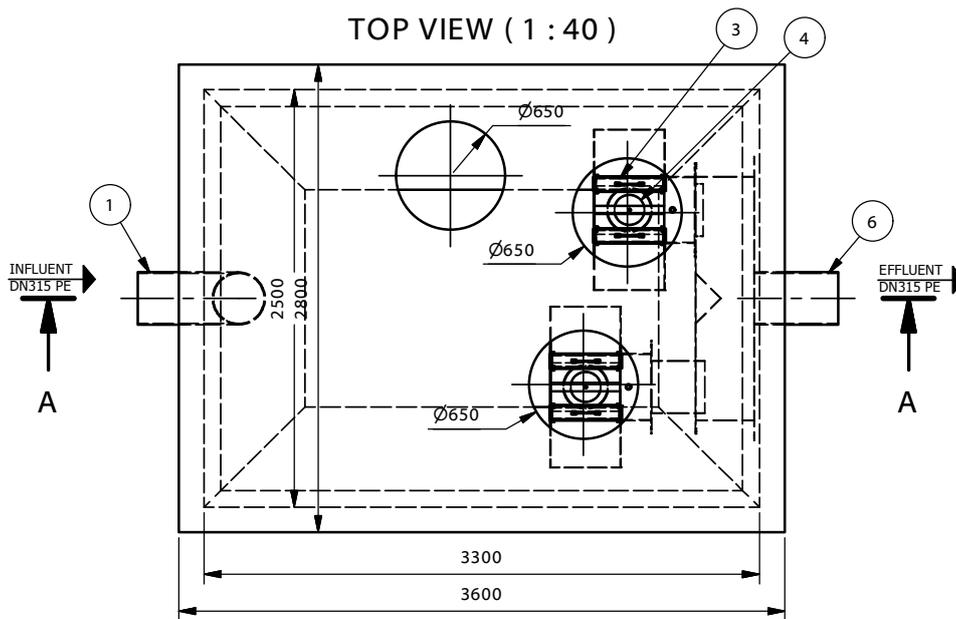
M= 1:40

Cleaning capacity:	80	l/s
Efficiency:	5	mg/l FOG
Max element weight:	10,8	t
Total weight:	15,0	t

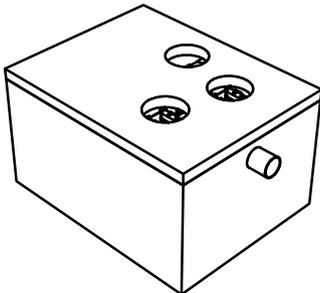
A-A ( 1 : 40 )



TOP VIEW ( 1 : 40 )

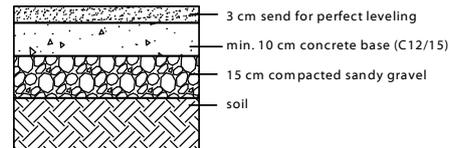


TNC 100-5-A

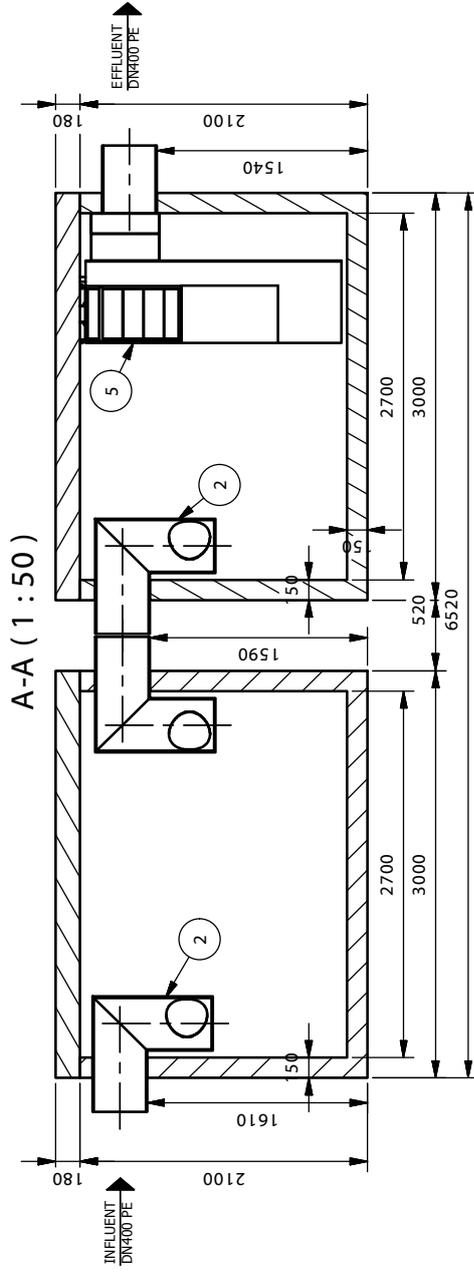


1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

RECOMMENDED ORDER OF LAYERS:

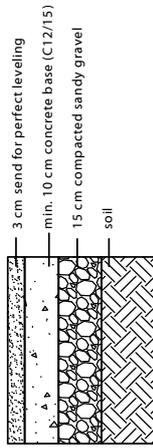


Cleaning capacity:	100	l/s
Efficiency:	5	mg/l FOG
Max element weight:	10,8	t
Total weight:	15,0	t

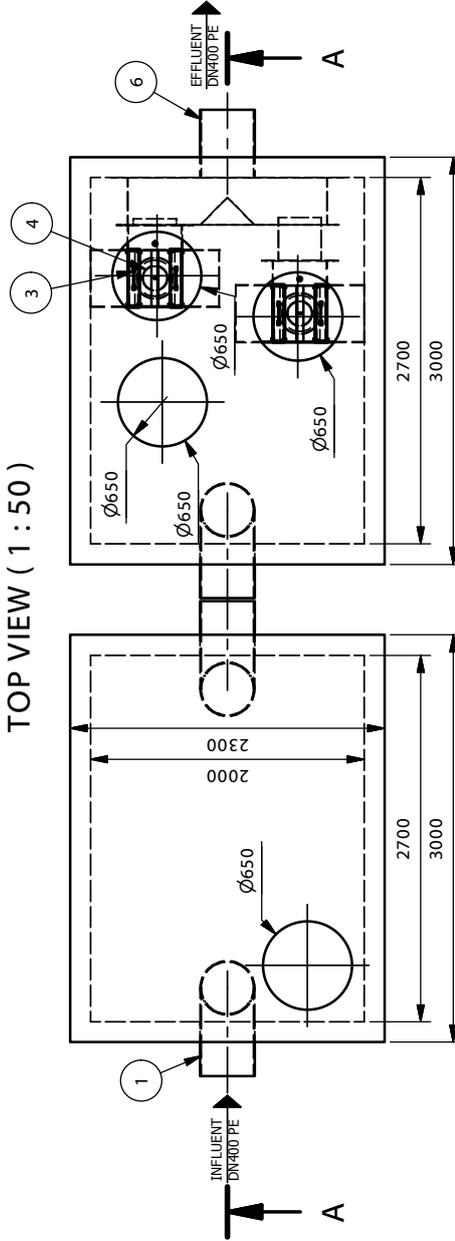


1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

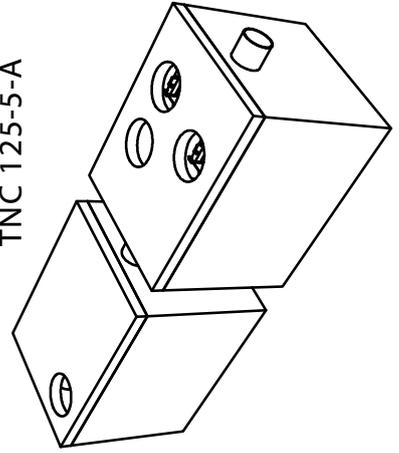
## RECOMMENDED ORDER OF LAYERS:



## TOP VIEW (1 : 50)



TNC 125-5-A

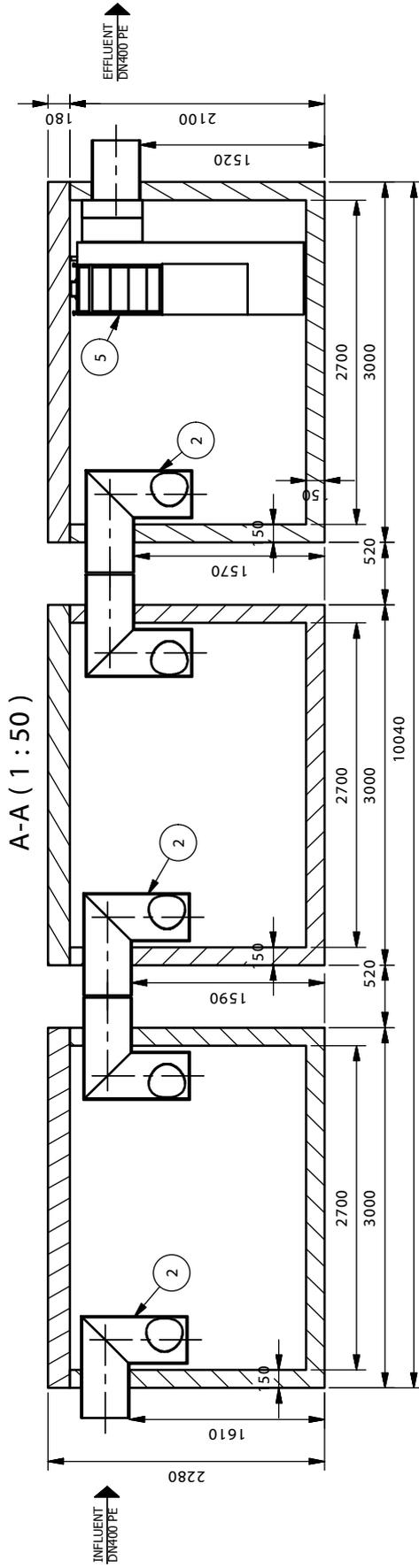


**PURECO**  
THE PURE ECO

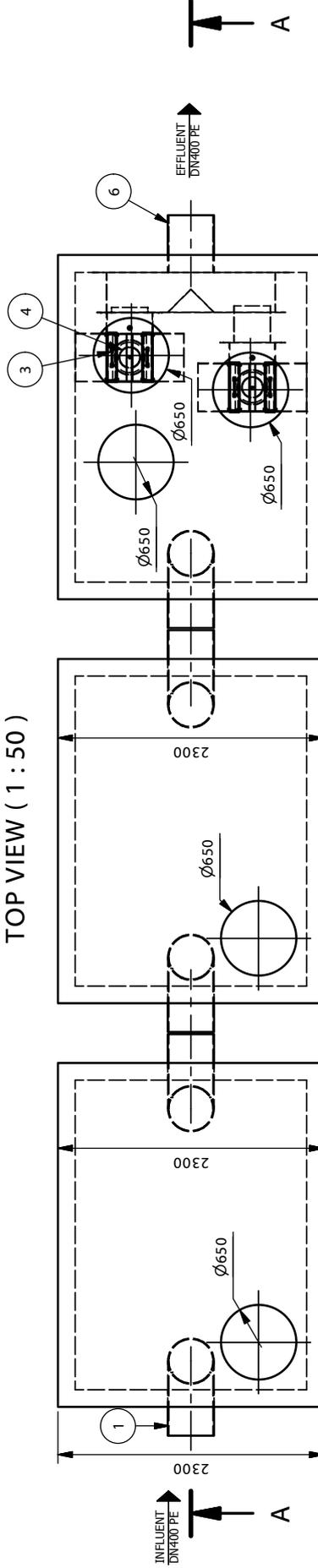
**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft  
TYP: **TNC 125-5-A**  
Informational drawing  
M= 1:50

Cleaning capacity:	125	l/s
Efficiency:	5	mg/l FOG
Max element weight:	9,1	t
Total weight:	23,9	t

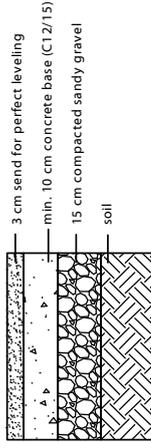
[www.pureco.hu](http://www.pureco.hu)



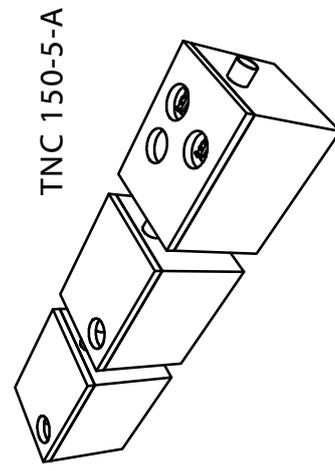
TOP VIEW ( 1 : 50 )



RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)



TNC 150-5-A

**PURGOC**  
THE PURE ECO  
[www.pureco.hu](http://www.pureco.hu)

**ENVIA TNC Oil- and light liquid separator with sludge trap in concrete shaft**

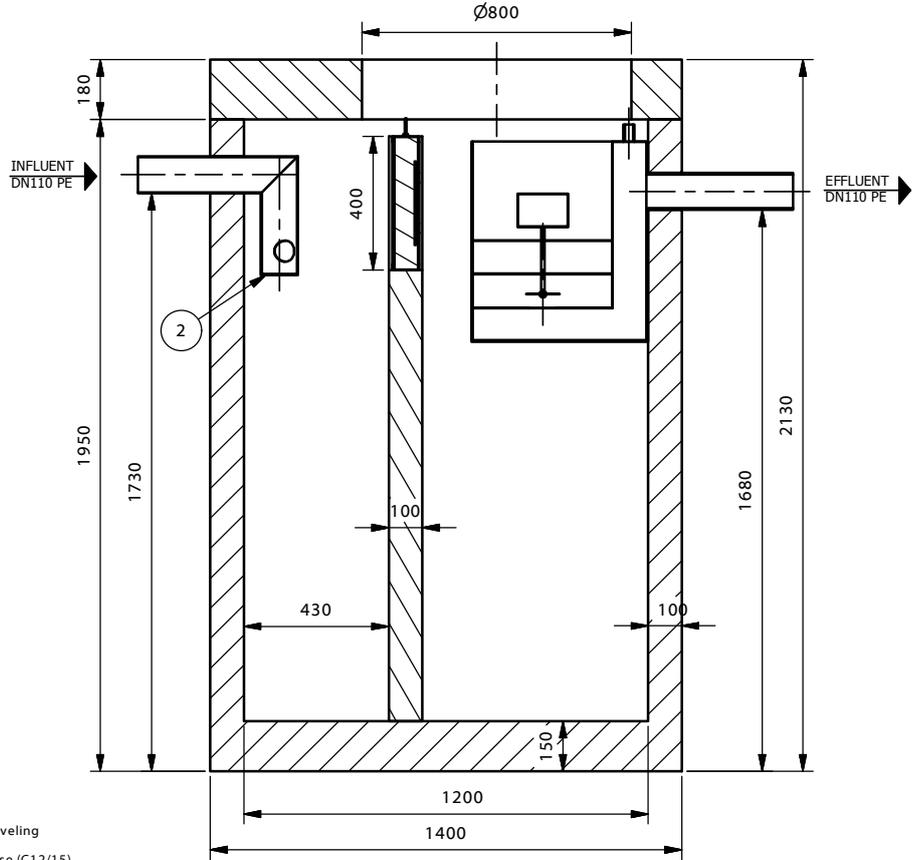
TYPE: **TNC 150-5-A**

Informational drawing

Cleaning capacity:	150	l/s
Efficiency:	5	mg/l FOG
Max. element weight:	9,1	t
Total weight:	35,9	t

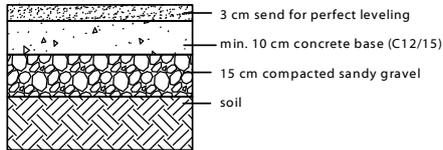
M= 1:50

A-A (1 : 20)

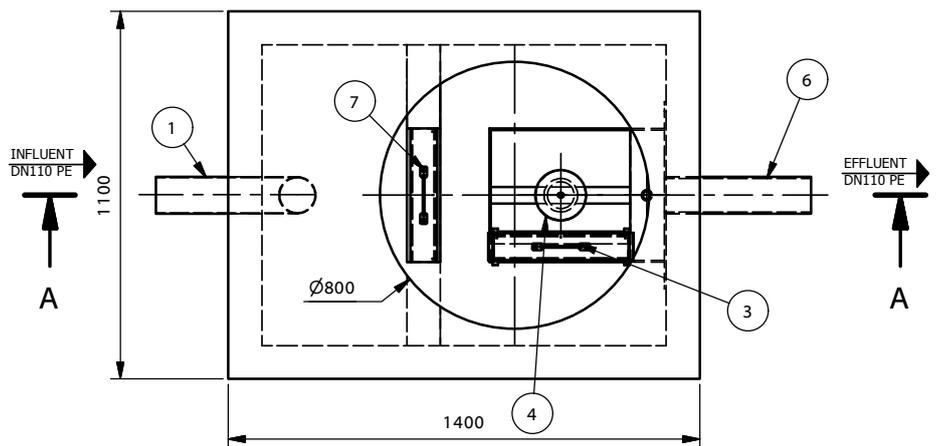


- 1. Influent pipe
- 2. Diffuser
- 3. Coalescent filter
- 4. Automatic closing device
- 5. Sludge level regulator
- 6. Effluent pipe
- 7. Pre-filter (only 2 mg/l device)

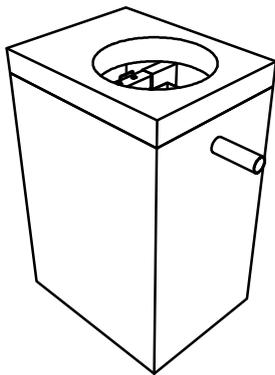
RECOMMENDED ORDER OF LAYERS:



TOP VIEW (1 : 20)



TNC 1,5-2-A



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**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

TYP:

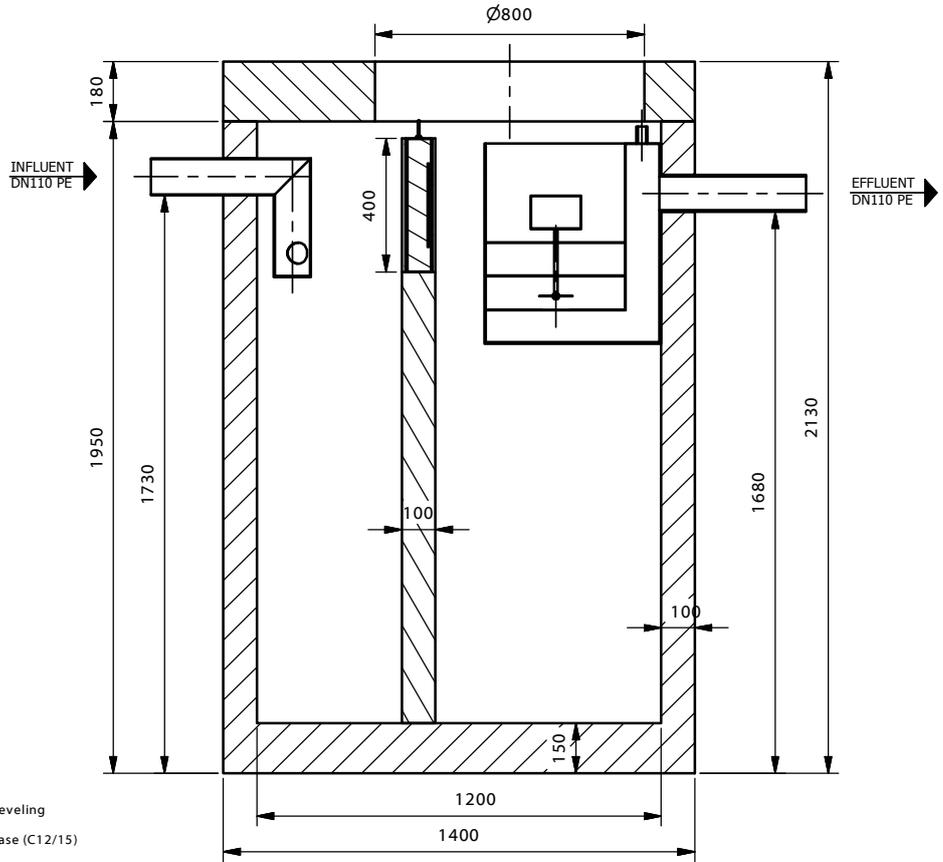
TNC 1,5-2-A

Informational drawing

M= 1:20

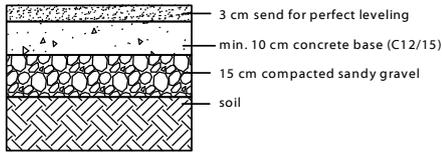
Cleaning capacity:	1,5	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	2,8	t
Total weight:	3,4	t

A-A ( 1 : 20 )

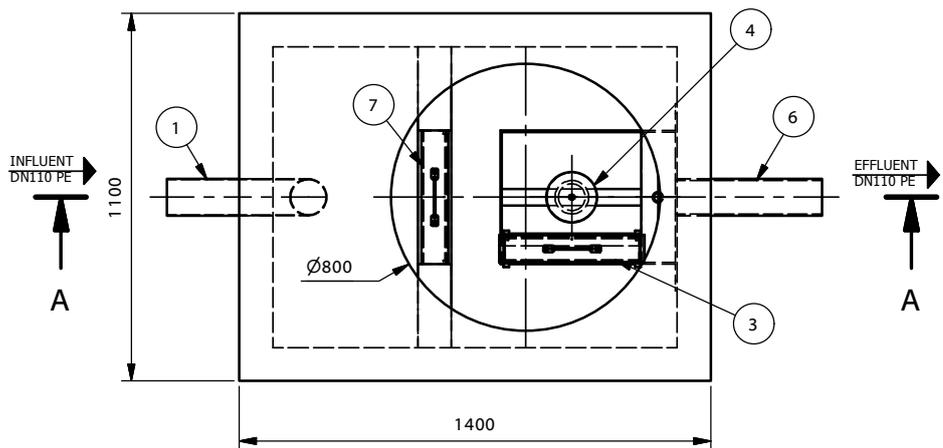


1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

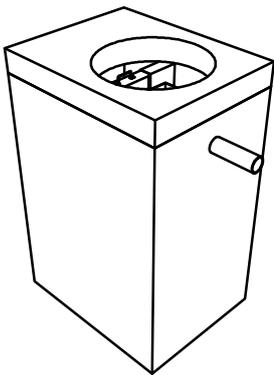
RECOMMENDED ORDER OF LAYERS:



TOP VIEW ( 1 : 20 )



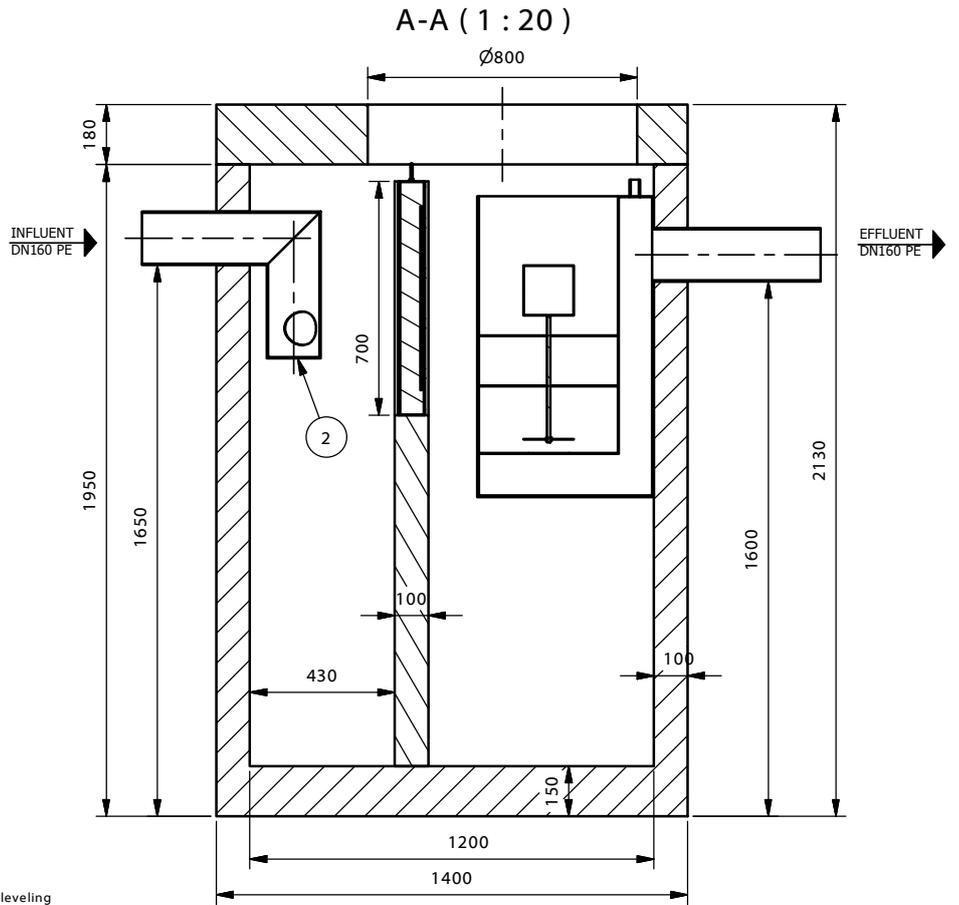
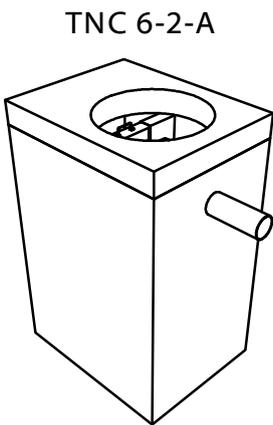
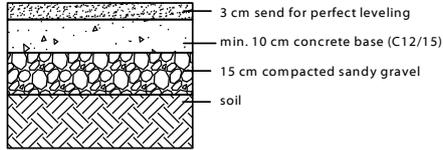
TNC 3-2-A



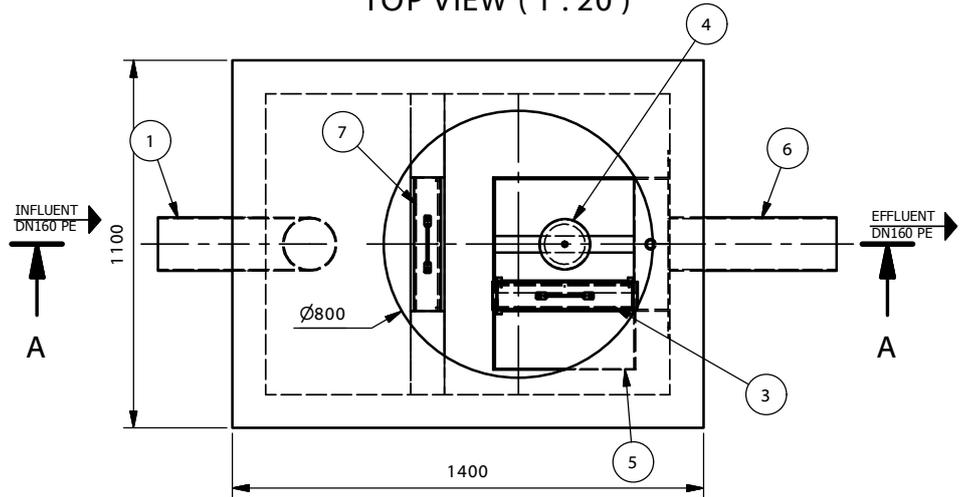
Cleaning capacity:	3	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	2,8	t
Total weight:	3,4	t

1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

RECOMMENDED ORDER OF LAYERS:



TOP VIEW (1 : 20)



**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft



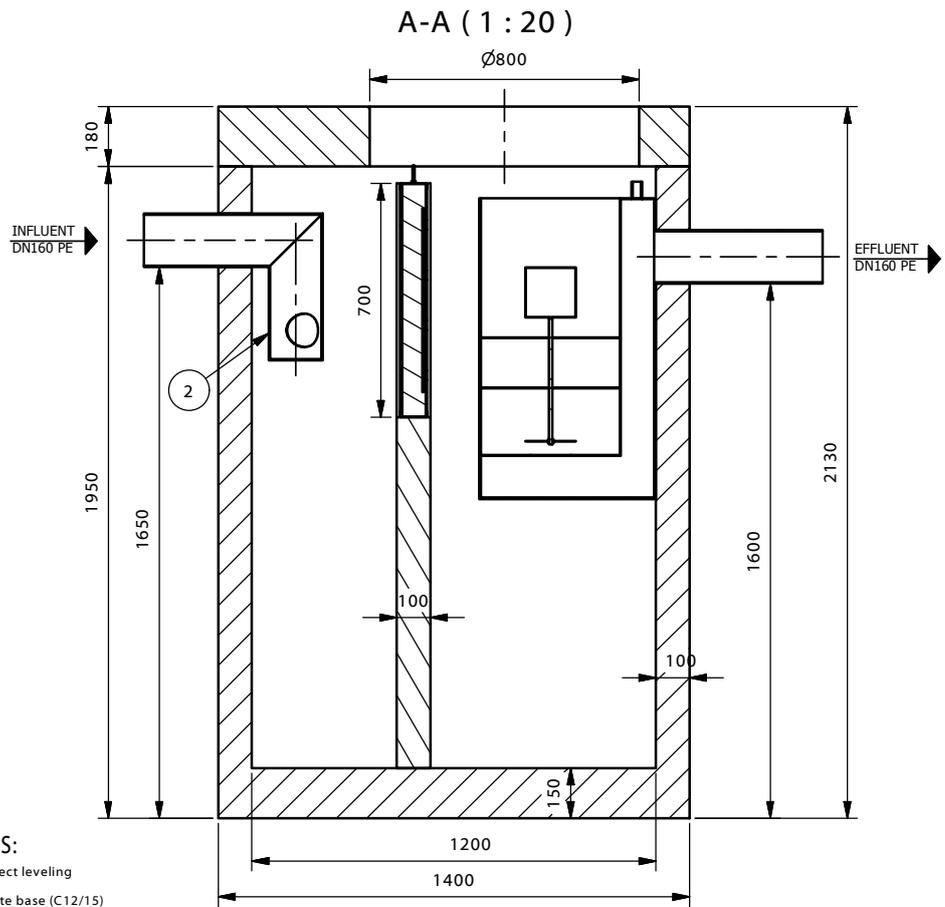
www.pureco.hu

TYP:

**TNC 6-2-A**  
Informational drawing

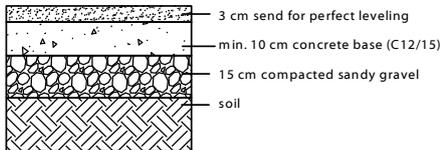
M= 1:20

Cleaning capacity:	6	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	2,8	t
Total weight:	3,4	t

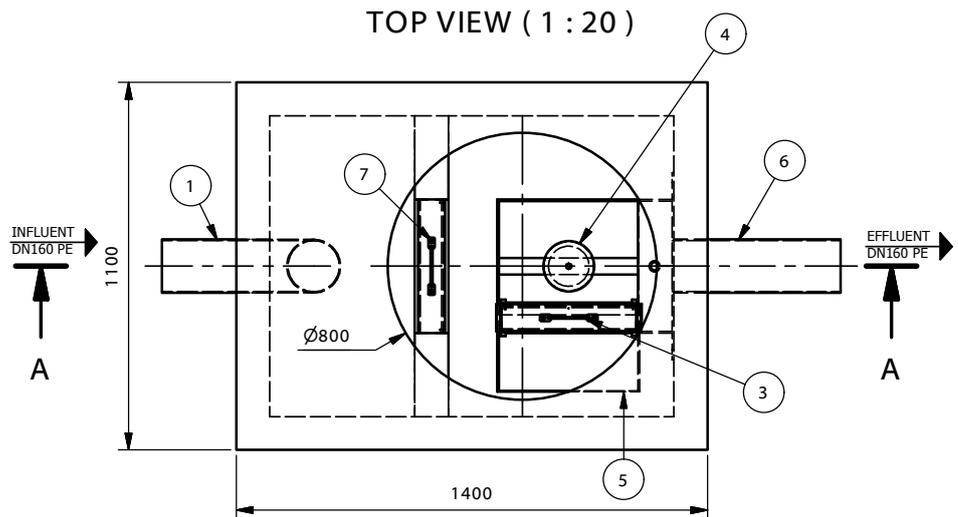
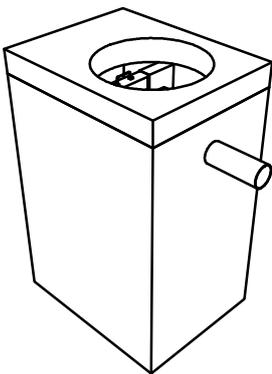


1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

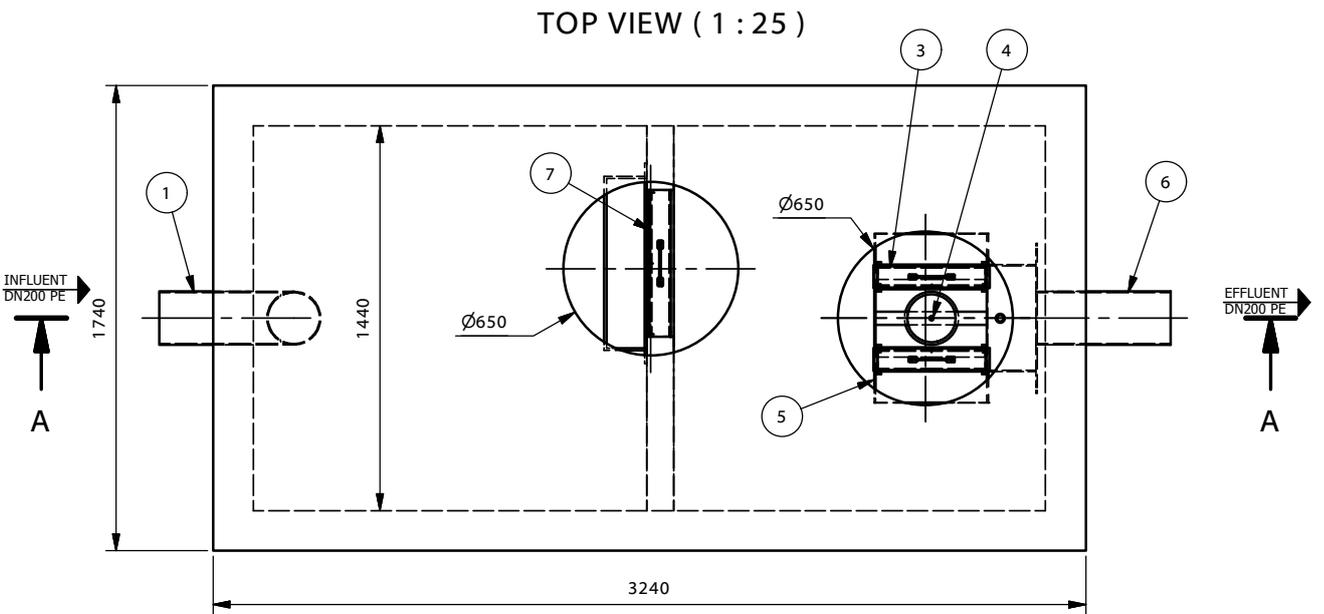
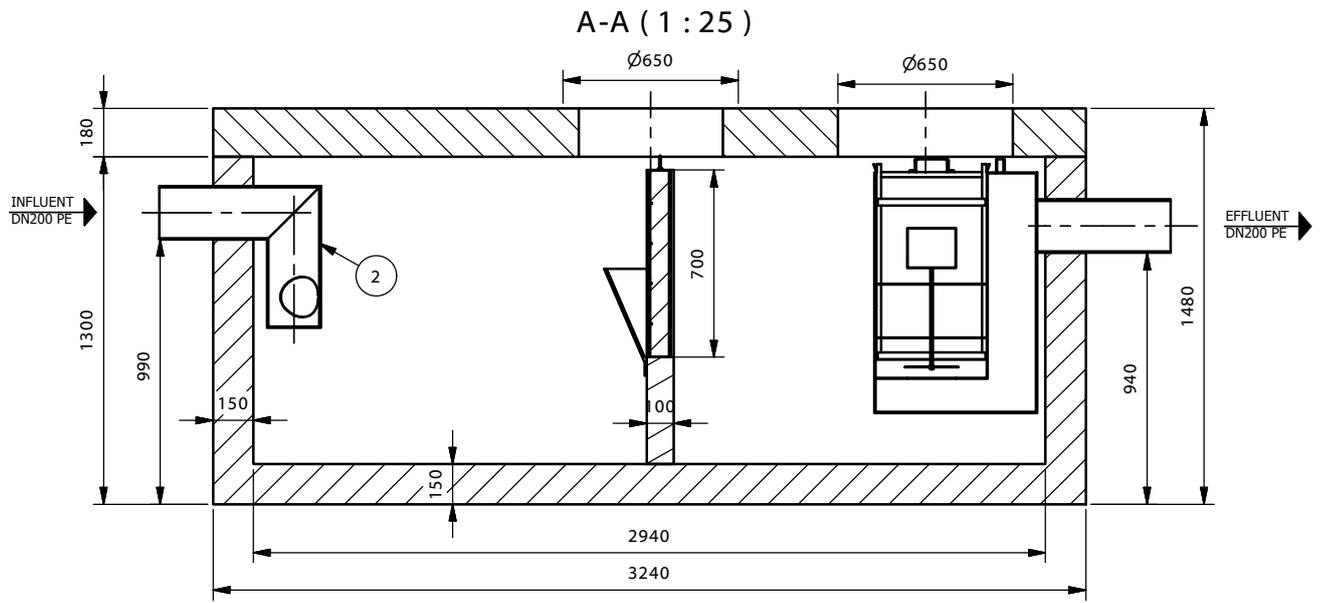
**RECOMMENDED ORDER OF LAYERS:**



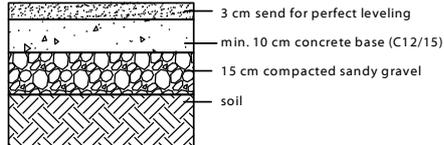
**TNC 10-2-A**



Cleaning capacity:	10	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	2,8	t
Total weight:	3,4	t

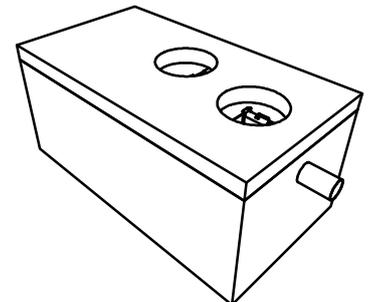


RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

TNC 15-2-A



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ENVIA TNC Oil- and light liquid separator with sludge trap in concrete shaft

TYP:

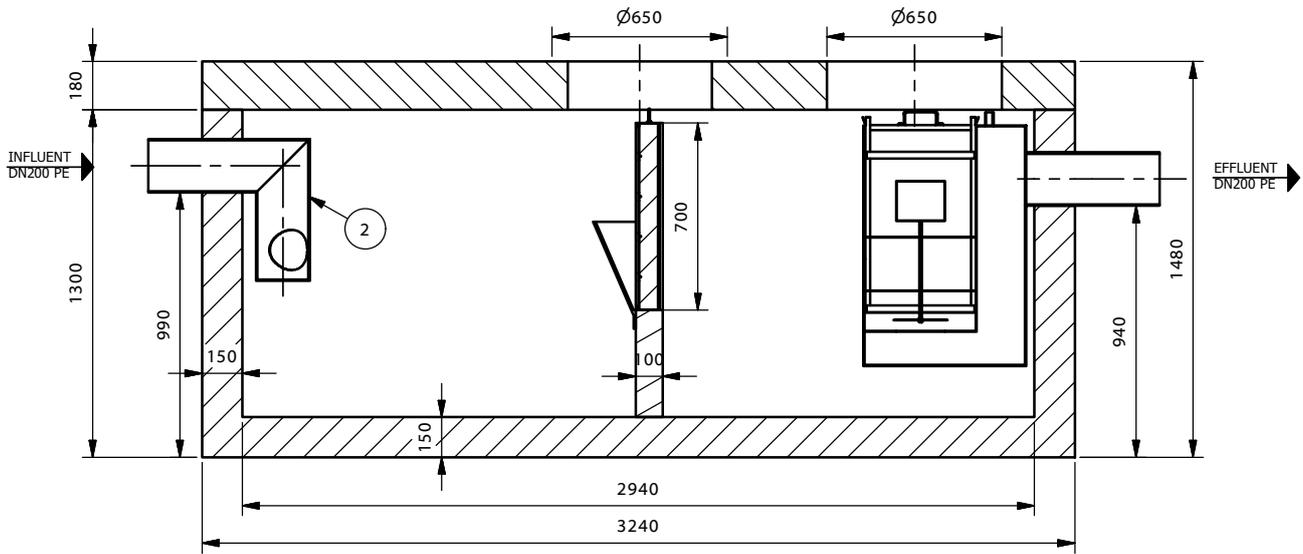
TNC 15-2-A

Informational drawing

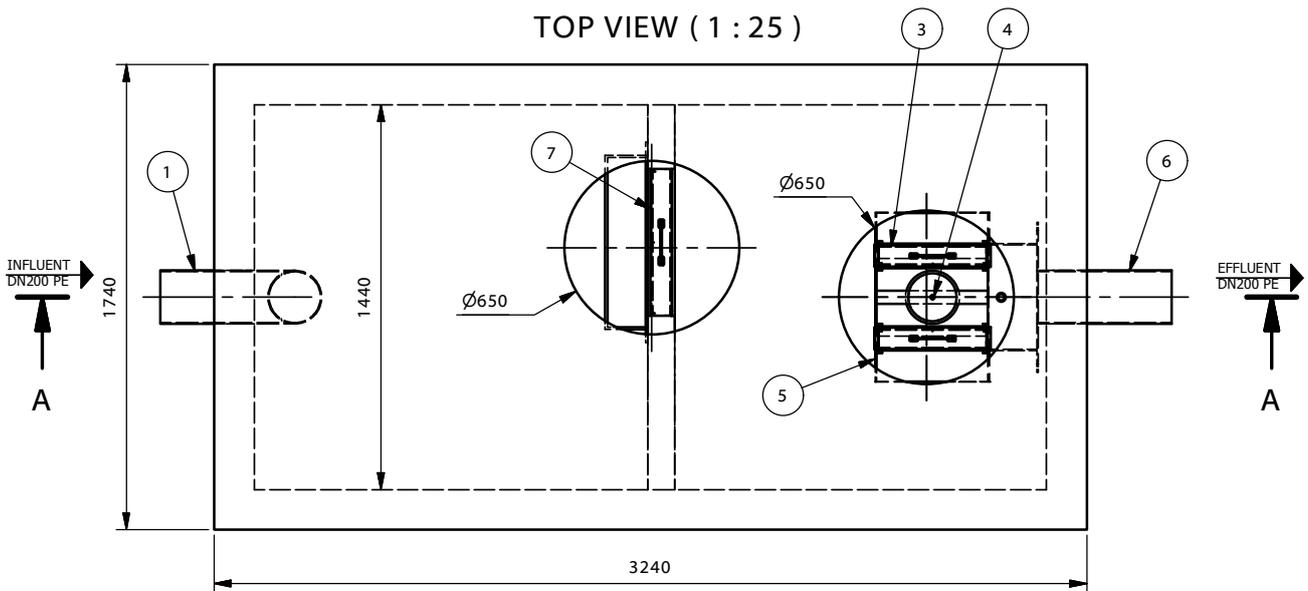
M= 1:20

Cleaning capacity:	15	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	6,0	t
Total weight:	8,4	t

A-A ( 1 : 25 )

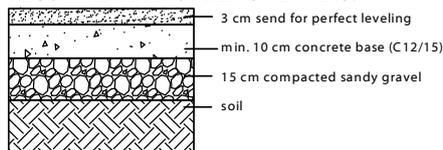


TOP VIEW ( 1 : 25 )

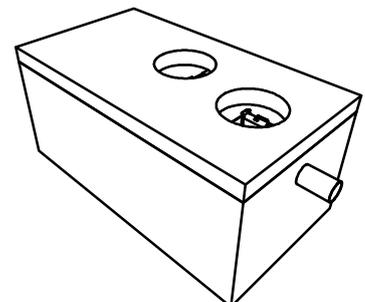


TNC 20-2-A

RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)



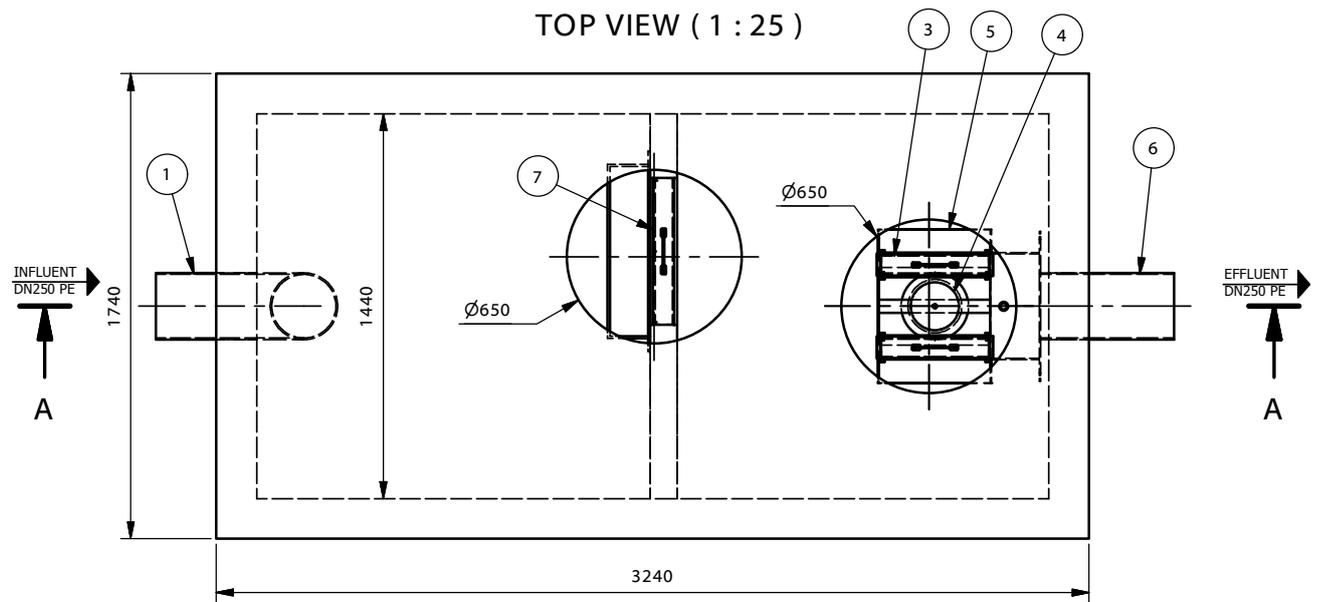
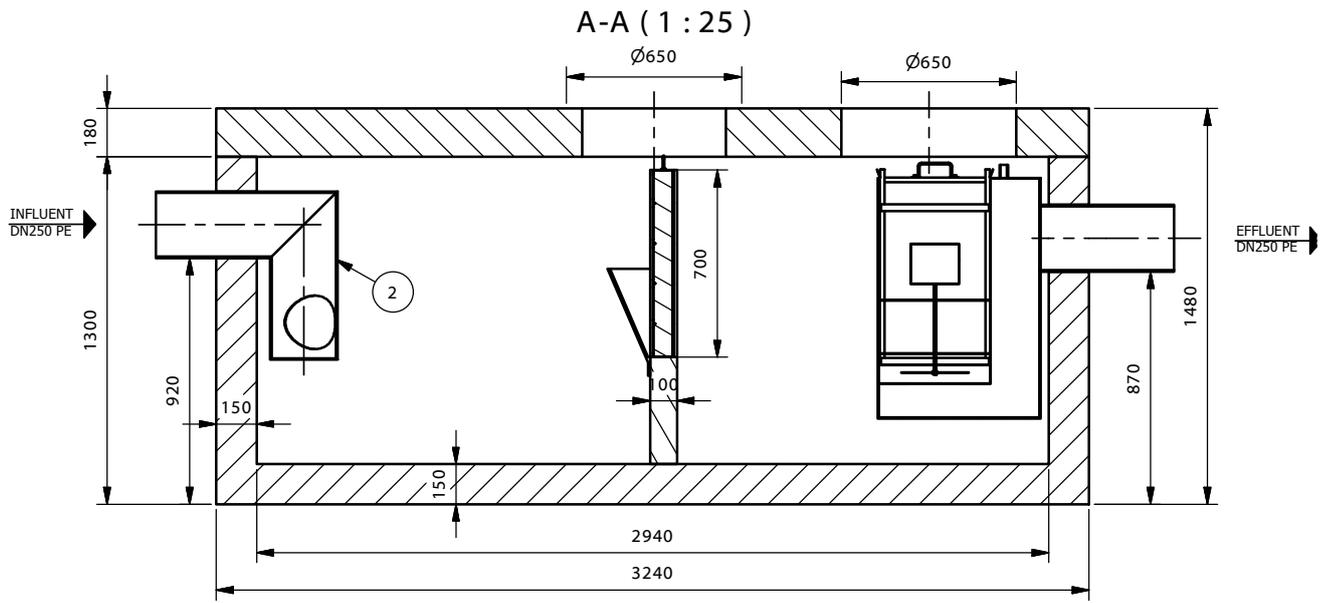
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**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

TNC 20-2-A  
Informational drawing

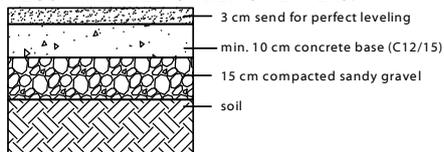
M= 1:25

Cleaning capacity:	20	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	6,0	t
Total weight:	8,4	t

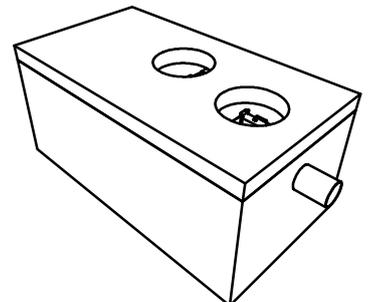


TNC 25-2-A

RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)



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ENVIA TNC Oil- and light liquid separator with sludge trap in concrete shaft

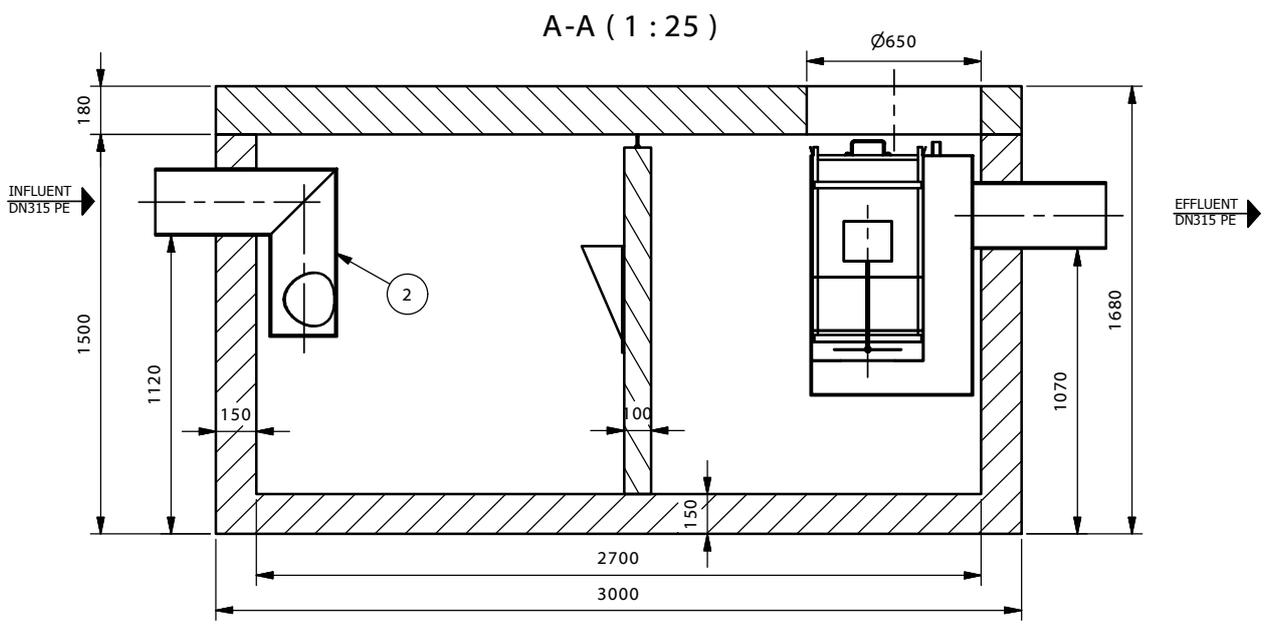
TYP:

TNC 25-2-A

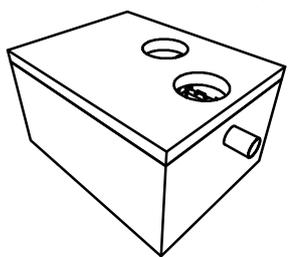
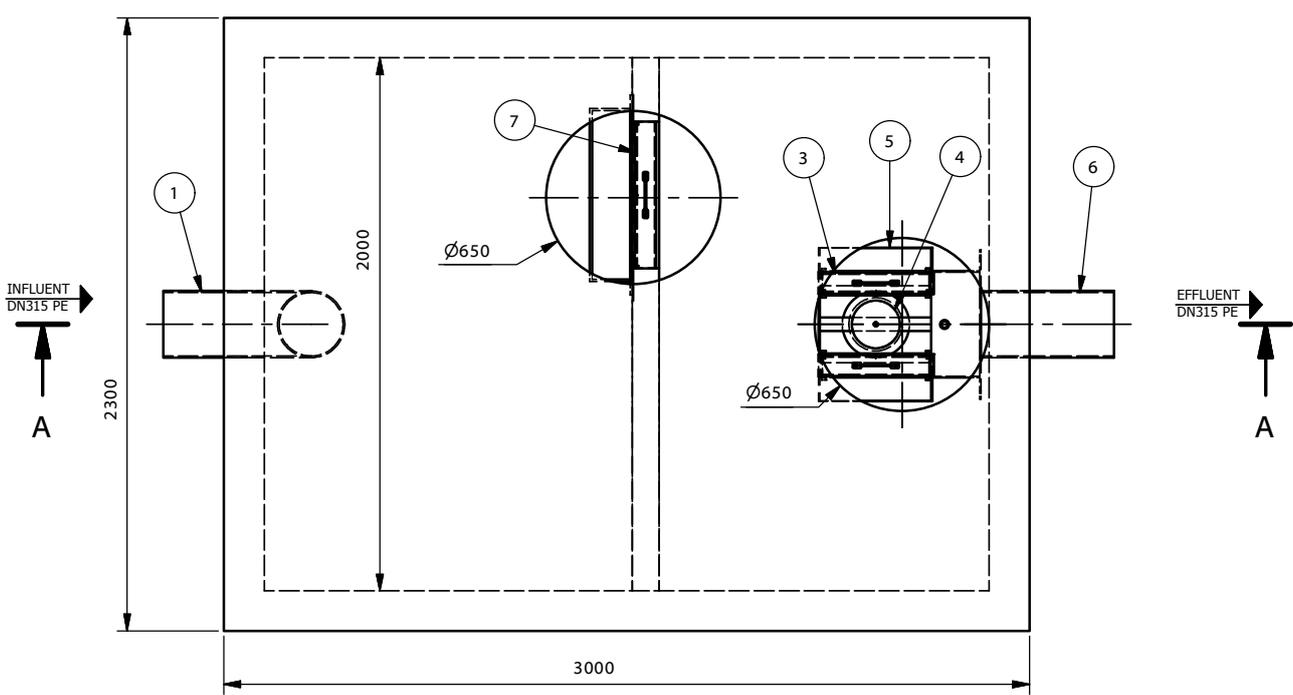
Informational drawing

M= 1:25

Cleaning capacity:	25	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	6,0	t
Total weight:	8,4	t



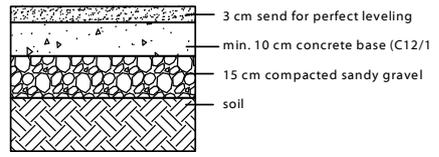
TOP VIEW ( 1 : 25 )



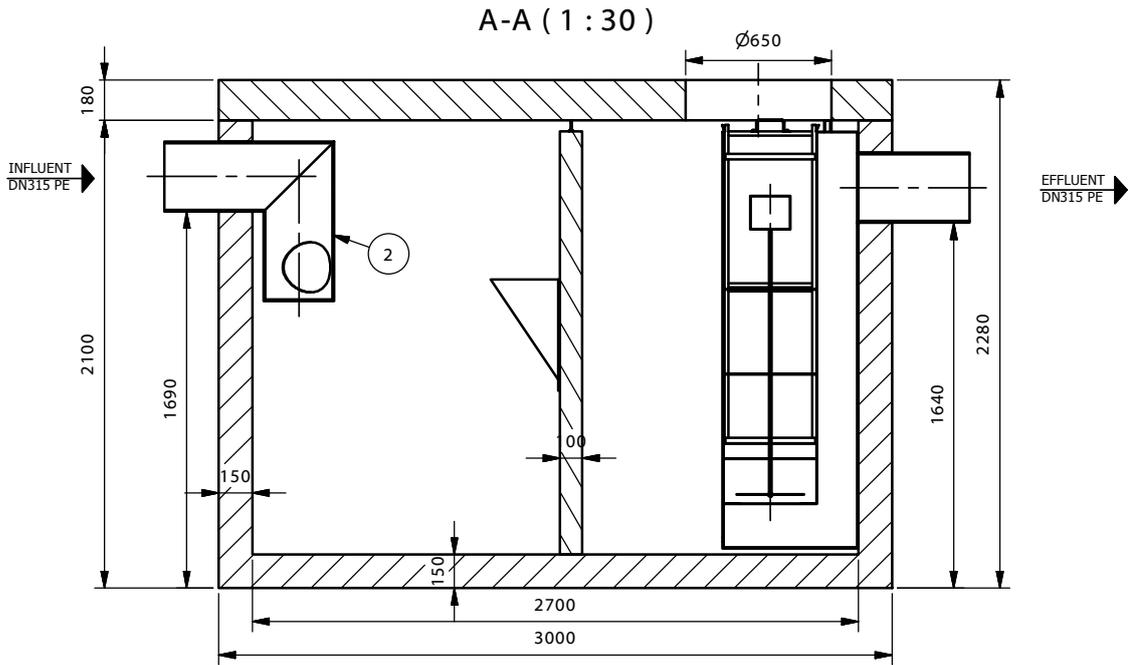
TNC 30-2-A

1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

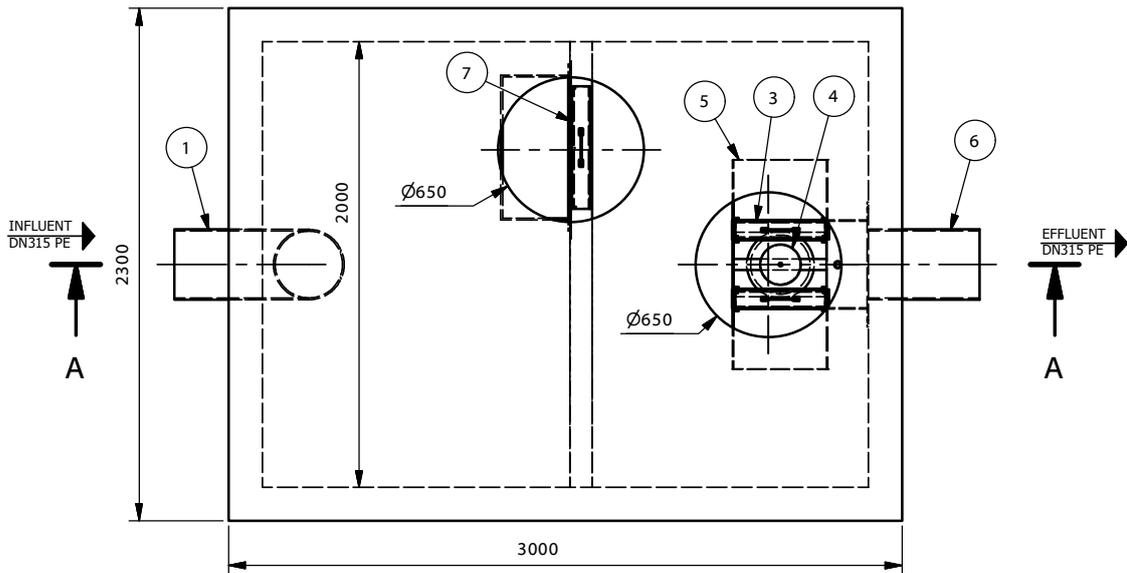
RECOMMENDED ORDER OF LAYERS:



Cleaning capacity:	30	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	7,6	t
Total weight:	9,5	t

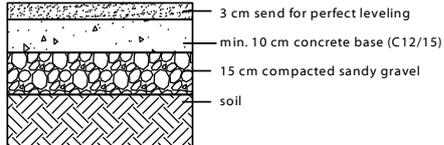


TOP VIEW ( 1 : 30 )

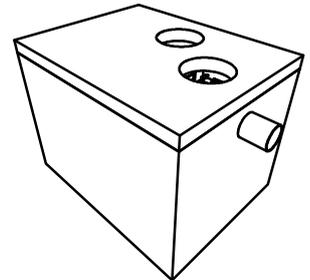


TNC 40-2-A

RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)



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ENVIA TNC Oil- and light liquid separator with sludge trap in concrete shaft

TYP:

TNC 40-2-A

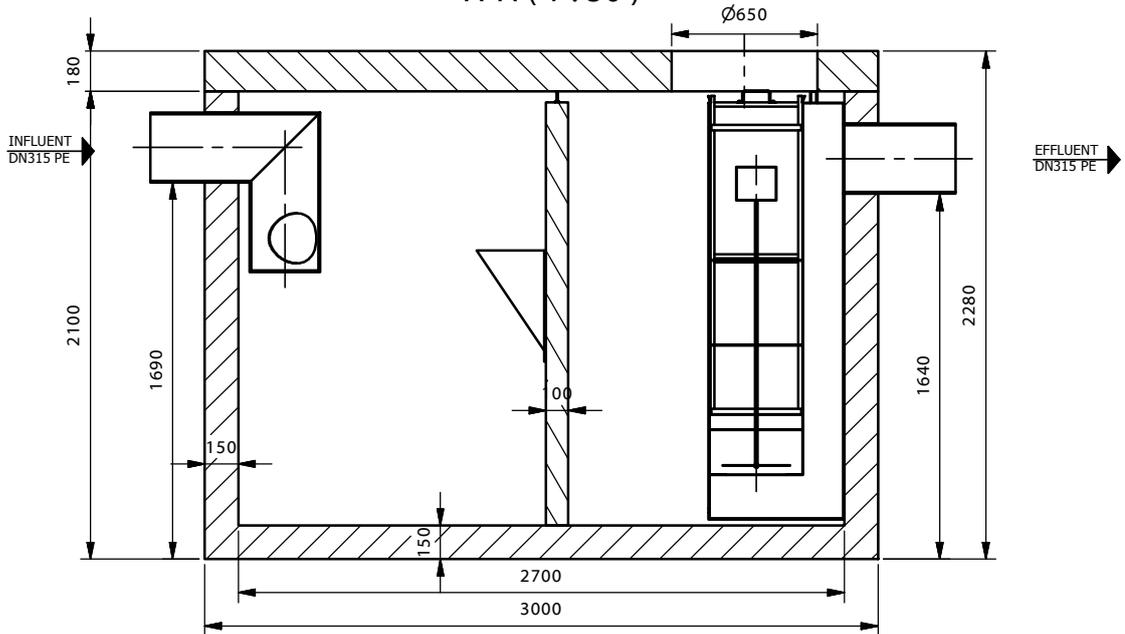
Informational drawing

M= 1:30

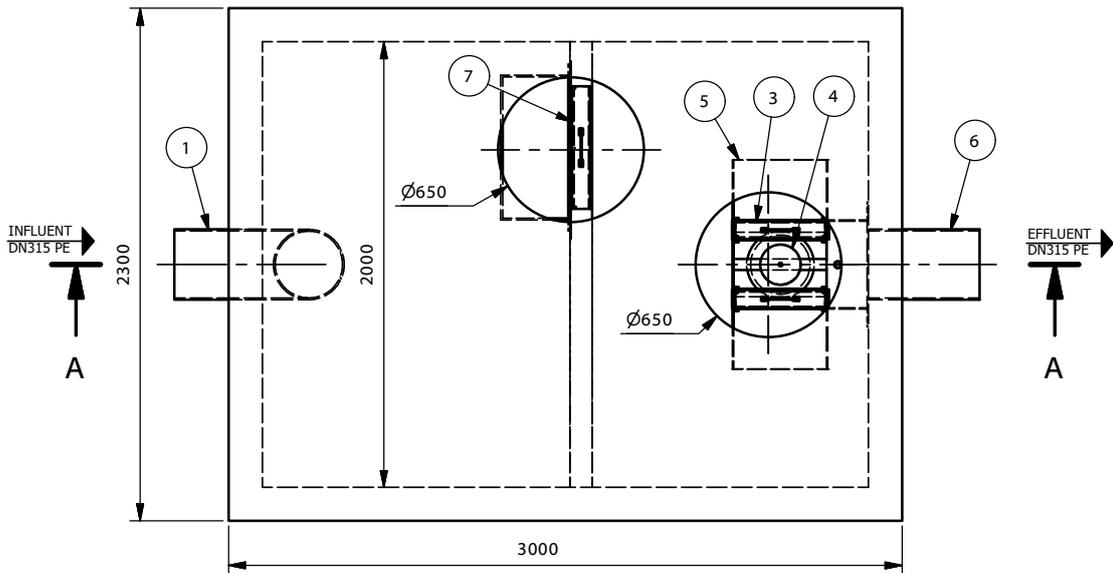
Cleaning capacity:	40	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	10,0	t
Total weight:	12,8	t



A-A ( 1 : 30 )

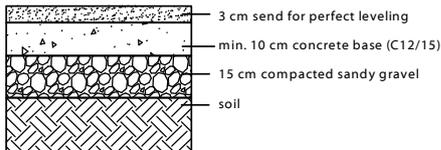


TOP VIEW ( 1 : 30 )

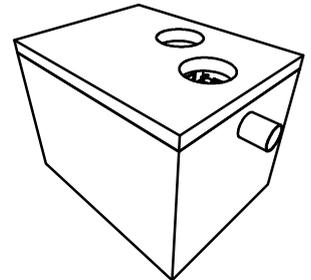


TNC 65-2-A

RECOMMENDED ORDER OF LAYERS:



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)



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**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

TYP:

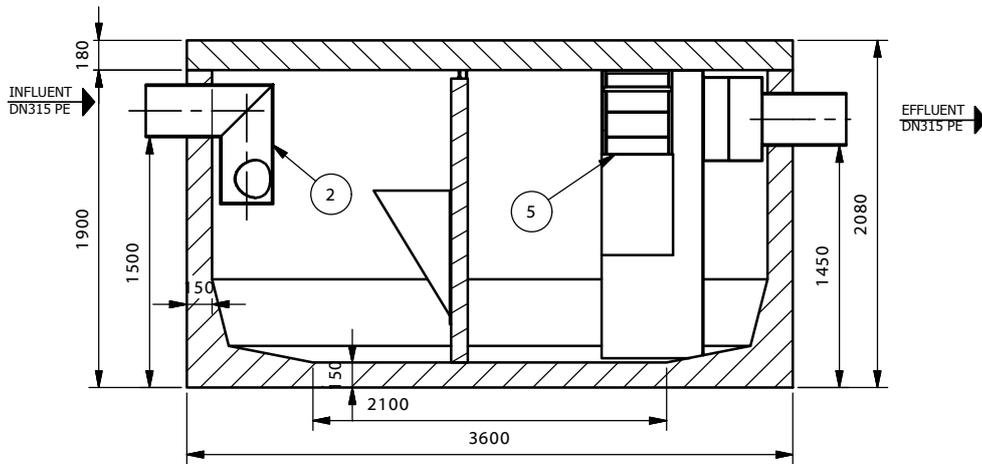
TNC 65-2-A

Informational drawing

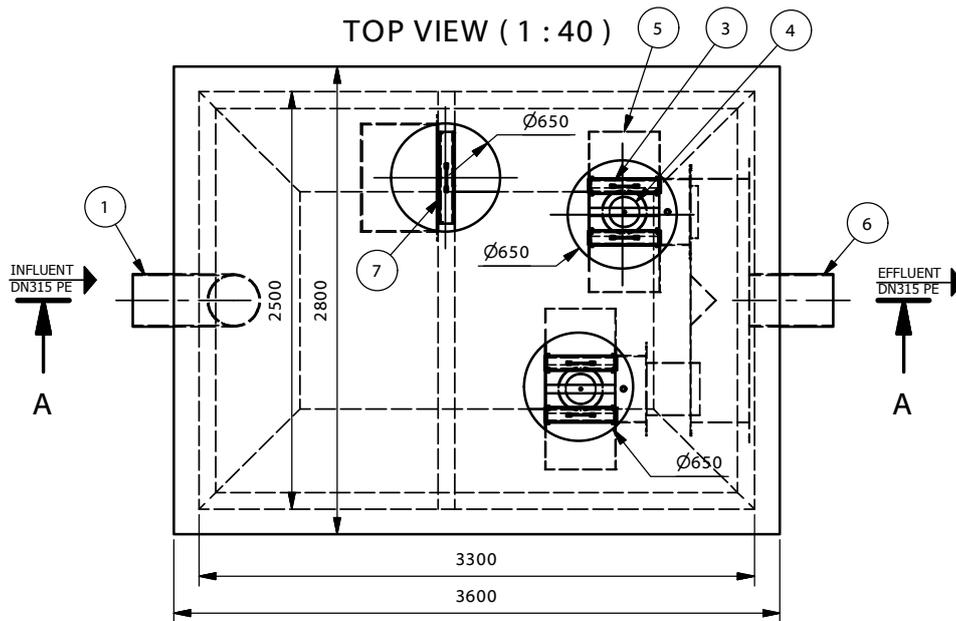
M= 1:30

Cleaning capacity:	65	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	10,0	t
Total weight:	12,8	t

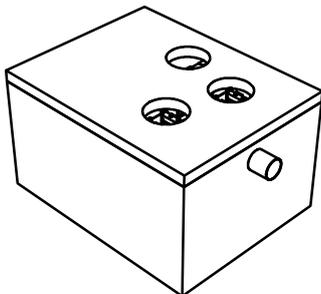
A-A ( 1 : 40 )



TOP VIEW ( 1 : 40 )

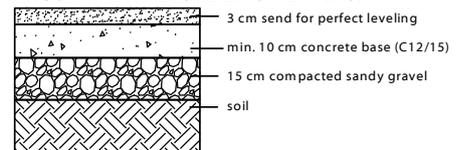


TNC 80-2-A



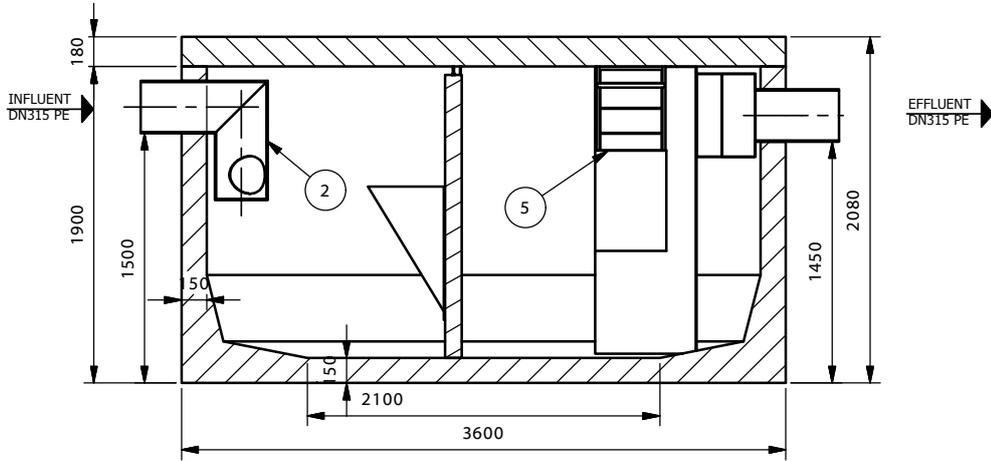
1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

RECOMMENDED ORDER OF LAYERS:

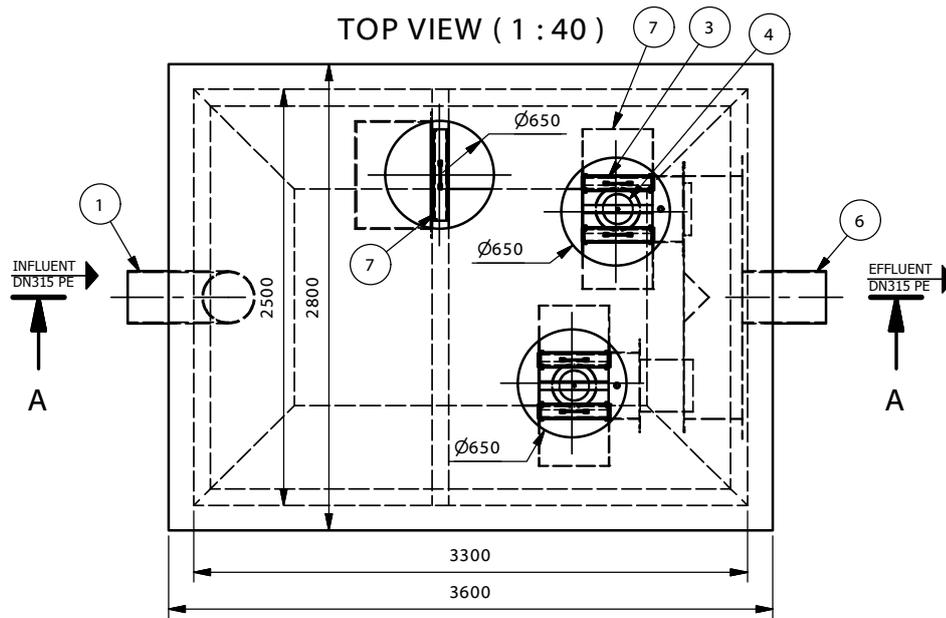


Cleaning capacity:	80	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	11,8	t
Total weight:	16,0	t

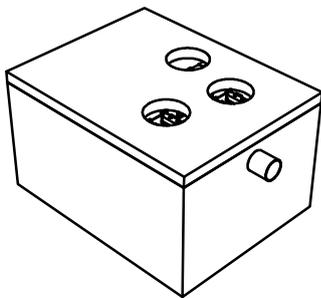
A-A ( 1 : 40 )



TOP VIEW ( 1 : 40 )

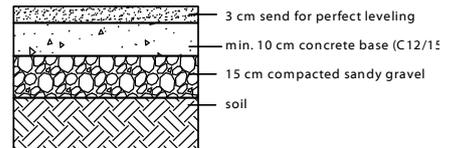


TNC 100-2-A



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

RECOMMENDED ORDER OF LAYERS:



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**ENVIA TNC** Oil- and light liquid separator with sludge trap in concrete shaft

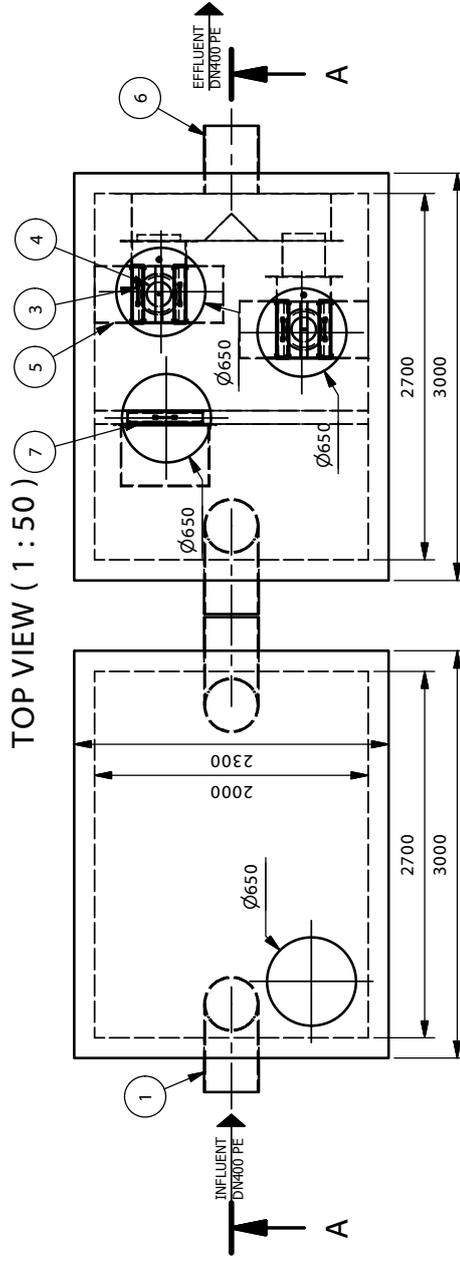
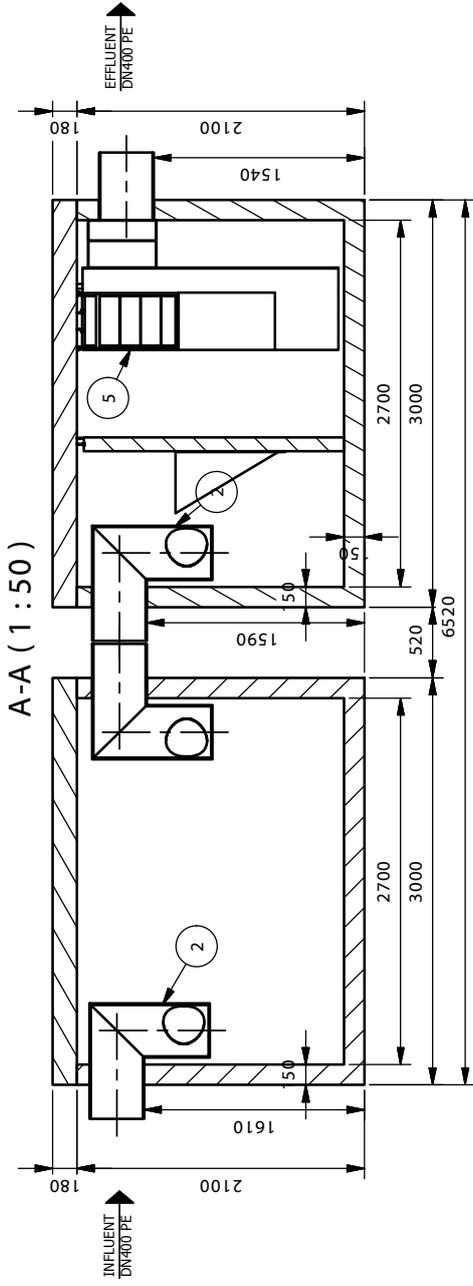
TYP:

TNC 100-2-A

Informational drawing

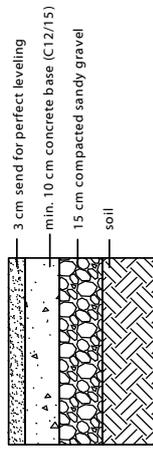
M= 1:40

Cleaning capacity:	100	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	11,8	t
Total weight:	16,0	t

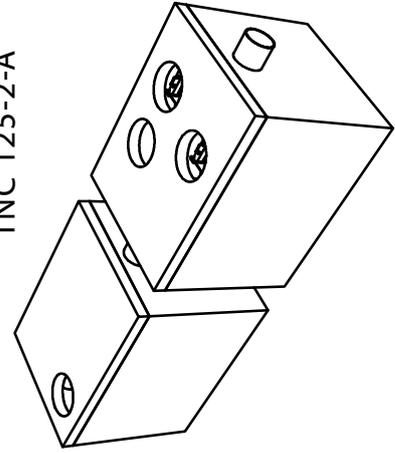


1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

**RECOMMENDED ORDER OF LAYERS:**



TNC 125-2-A



**ENVIA TNC Oil- and light liquid separator with sludge trap in concrete shaft**

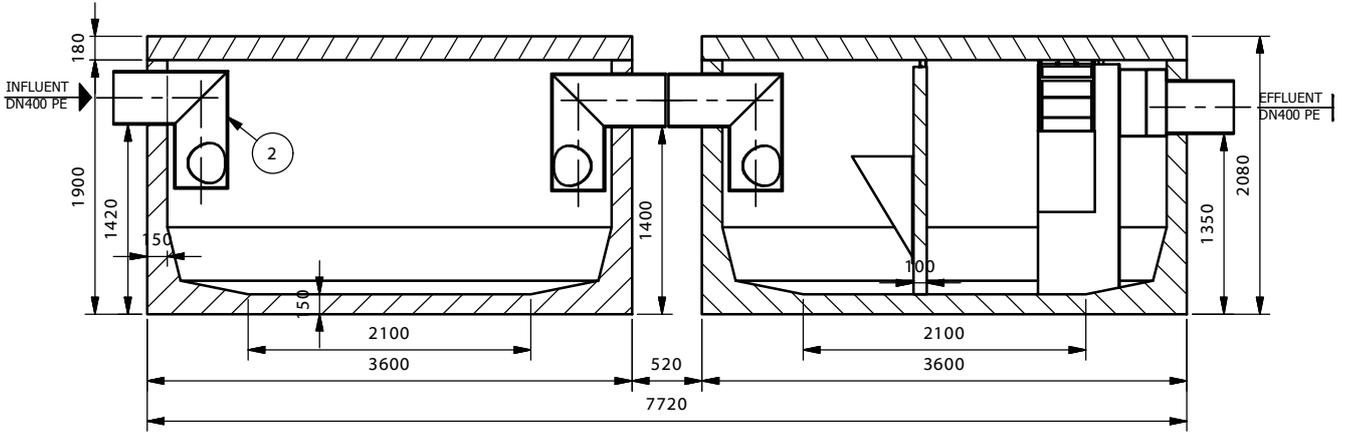
TYP: TNC 125-2-A

Informational drawing

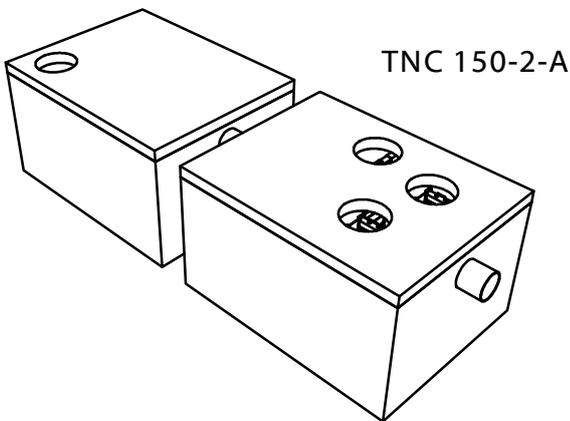
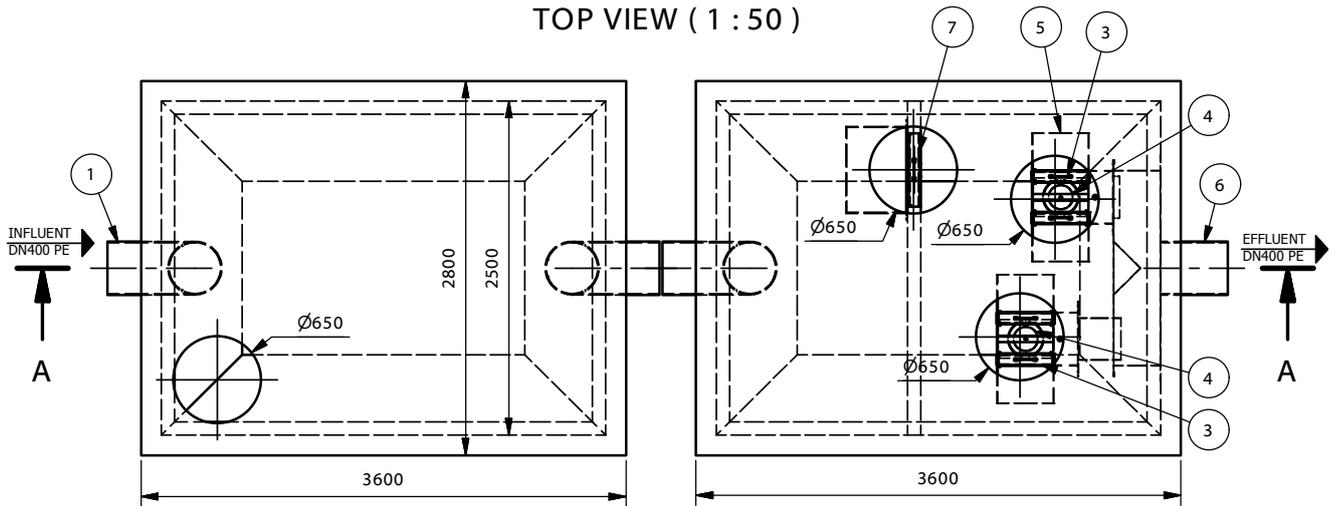
Cleaning capacity:	125	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	9,1	t
Total weight:	24,8	t

M= 1:50

A-A (1 : 50)

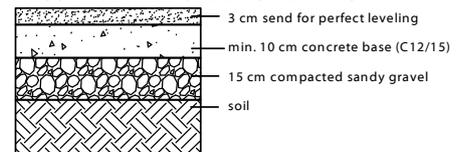


TOP VIEW (1 : 50)



1. Influent pipe
2. Diffuser
3. Coalescent filter
4. Automatic closing device
5. Sludge level regulator
6. Effluent pipe
7. Pre-filter (only 2 mg/l device)

RECOMMENDED ORDER OF LAYERS:



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ENVIA TNC Oil- and light liquid separator with sludge trap in concrete shaft

TYP:

TNC 150-2-A  
Informational drawing

M= 1:50

Cleaning capacity:	150	l/s
Efficiency:	0,1	mg/l FOG
Max element weight:	9,1	t
Total weight:	24,8	t

# GENERAL INSTALLATION GUIDE – ENVIA TNC

## I. PREPARATIONS ON SITE

### Excavation of working pit:

- Effective size, width/length: is the outline measurement of the equipment + roughly 70 cm, considering projecting pipes of the equipment, craning conditions respectively compacting conditions.
- Depth: thickness of receiving base and the overall height of equipment (storage tank, reinforced concrete slab, cast iron manhole cover, setting ring as needed, neckpiece)

It is not allowed to place the equipment directly into the working pit; receiving base should be built in accordance with soil conditions:

- in case of soil having good load-bearing capacity (verified by soil mechanics expertise) roughly 15 cm thick gravel ballast, sandy gravel base needed;
- in case of average load-bearing soil 8-10 cm concrete base (C6 quality),
- in case of unfavorable soil conditions roughly 15 cm reinforced concrete base needed,
- additionally in all cases roughly 2-3 cm sand layer is needed for leveling.

If prepared base would be soiled/contaminated it should be cleaned before installation.

By the preparatory works on site it is also should be considered that the equipment(s) are transported to site with 24 ton vehicles, also extra space for fixing-soles of cranes should be ensured.

In order to guarantee safety at works, the smallest possible working pit should be excavated, ensuring that the position of the crane (lifting axle) should not fall far from the axis of location. It is important to ensure that fixing sole/support of crane should fall outside of the line of soil-breakage.

Equipment units are delivered pre-fitted for anchoring, arrangement should be coordinated in advance with manufacturer.

Before lifting operations it is inevitable to check completeness and flawless condition of delivered tanks and their mechanical units; damages/deviations should also be reported to the manufacturer, and the same time it should be indicated on the construction checklist.

## II. PLACEMENT OF THE EQUIPMENT, PUTTING INTO OPERATION

Generally 3 pieces of lifting eye/lug is provided to place equipment into its working pit and at least 3 m long 3-branch craning cable should be used with adequate load-bearing capacity. It is important to keep the angle at top of lifting cables less than 60 degrees in all cases, if it would become more than 60 degrees there is a risk of buckling of the wall of the equipment. For damages and accidents resulting from above incorrect lifting manufacturer will not take responsibility!

We deliver and invoice 1 set (3 pieces) of lifting eye to all sold equipment. If they are transported back to us we will refund its cost.

It is indicated on tanks which is the ingoing and outgoing side, respectively in case of multiple tanks the process/installation order. Lifting in place should be carried out in accordance with those indications. There are match-marks indicating correct assembly position on tank and covering slab also. Top of tank sidewalls should be poured-around with laying mortar before putting on the covering slab. After that working phase it should be checked that manholes/openings on cover slab are in correct position, in addition to check whether the filtering units could be pulled up.

Tanks may be connected to each other and to the sewage system by double-siding socket, respectively by special rubber collar.

It is recommended to close ends of pipes in some way, if the equipment would be connected later to sewage network, in order to avoid mud getting into the unit.

Before filling back the soil into the work pit water-tightness test should be carried out in order to check connections. After that filling back of soil may be done by engineer's recommendations. It is advised to place cast iron manhole covers temporarily to openings, to avoid soil getting into tanks during works.

If soil backfill completed cast iron manhole covers should be leveled, frame of lid should be fixed by concrete.

Equipment should be constructed taking above information into consideration!

Before putting into operation tanks should be cleaned from casually infiltrated dirt/mud, in case of oil separators the lifting/pulling cable of float-valve should be hanged up to the hook fitted into the cover slab. After that the equipment should be filled up with clear water up to the level of outgoing pipe bottom level.

### III. SAFETY AT WORK AND HEALTH PROTECTION REGULATIONS

Before commencement of works responsible technical manager should inform employees on legal prescriptions, detailed safety at work and health precautions, pertaining to actual work-process. Works should be carried out in accordance with weather/climatic conditions and environmental circumstances, also taking into considerations technical specifications written in documents of related objects.

Before commencement of works condition of tools should be checked, work may only be carried out by adequately trained personnel, under continuous supervision and control.

During craning works general safety at work prescriptions pertaining to weight-lifting and weight-transportation, standing under crane effective radius or under suspended weight is STRICTLY FORBIDDEN!! Lifting should be directed by a responsible manager or crane-hook operator, the weight may be lifted and other operations carried out only after his signaling.

It is FORBIDDEN to stand on reinforced concrete units during lifting!

Protective gloves and helmet should be used during works.

Works should be carried out obeying relevant safety at work prescriptions!

Please return to us the Construction Checklist Form filled up by the Contractor/Client. For lack of that manufacturer may refuse demands for guarantee.

# HANDLING AND MAINTENANCE GUIDE – ENVIA TNC

## I. GENERAL DESCRIPTION OF SEPARATOR EQUIPMENTS

Function of the mud and oil separator equipment is to separate sump and grease from sewage/wastewater polluted by animal/vegetable oil/grease before submitting into public sewage system. It must be avoided to install sewage pump before the separator equipment, if installation of pumps can not be avoided, a pump operating on volumetric displacement principle should be used. Mud and mineral oil separator equipment retains material as by its function (mud, oily drift, buoyant mineral oil derivatives), separating them from water. The equipment is not applicable to retain dissolved material and other dangerous contaminants, i.e. acids, base, mineral salts etc. The equipment is not applicable to clean Communal (Public) sewage! It does not neutralize, decompose or reduce the quantity of contaminants in separated material, it does not reduce the quantity of contamination in any way, it stores them only, and regularly must be removed from equipment.. Paved/clad surfaces cannot be cleaned by such detergents which cause fusion, emulsification of oil.

Precondition of effective operation is the systematic monitoring and maintenance. Equipments shall be supervised at least once monthly; it is also advised to check it after extensive rainfall and showers! One of the most important components of the system is the filter-unit, it must be supervised regularly, cleaned if necessary. During regular checkups correct operation of float shall be supervised. Damages resulting from lack of maintenance are the responsibility of the operator!

Equipments may be made of poly-ethylene, poly-propylene, reinforced concrete and steel.

### Operation of the equipment

Equipments operating on the principle of physical-components-separation can only operate if they are filled with water, it is the resting water in which sedimentation or floating-up of buoyant contaminants may happen. In separators mud-compartment serves to catch sediment material. Buoyant material is retained by deflector and/or by the position of the outlet pipe. Equipment is delivered by a filtering unit (units) operating in coalescence principle, measurement according to the capacity of the equipment - velocity of flow (filtering velocity) is established under 5 cm/s, as by professional experience proved efficiency is the highest in this order of magnitude. Filtering unit in addition to the characteristic role played in buoyancy of oil, serves as physical filter, its task is to retain physical contaminants in the suspension phase.

As security device a calibrated float operates in the equipment, set in such a way that if more than 15 cm oil layer be accumulated on the surface, or after the increased flow-velocity (hydraulic overload) closes the outgoing flow, in order to prevent washing-out of retained contaminants. Handling of equipment may be done across the manhole (adequately sized openings worked out on the top plane of the equipment).

### Technical process

Sewage, contaminated by drifting mud and oil derivatives, is led-in across a siphon inlet pipe into the sedimentation chamber of the equipment, or bypassing the deflector. Deflector breaks up the flow of water, turns its flow downwards, sideways. In the separating chamber, considerably wider than the sewage pipe itself, velocity of flow is decreased, consequently sedimentation of material becomes possible. Sediment mud in the separation compartment should be removed regularly (if 1/3 part of storage compartment be filled). The essential component of the equipment is the filtering unit, helps removing oil, operating on the principle of coalescence, installed in a special compartment designed to contain it, in such a way that filters may be removed without entering into the equipment for cleaning.

A safety float-valve is installed there, closing the opening for the outgoing water on the chamber, according to operational descriptions.

By the above workout manufacturer undertakes guarantee for 5 mg/l SZOE limiting value.

In equipments reaching 2 mg/l SZOE limiting value enlarged oil-separating chamber and/or a second layer of coalescent filter may be found, ensuring higher quality for outgoing water.

## II. OPERATIONS MANUAL

Basic precondition of the correct operation for the equipment, of the adequate cleaning of outgoing water, is systematic supervision for the equipment, systematic removal of retained contaminants Equipment shall be checked as by need, at least once a month. Emptying frequency shall be selected according to the quantity of retained material, in such a way it may not exceed the storage capacity of the separation compartments. At least once a year the equipment should be cleaned - according to legal prescriptions pertaining to hazardous material.

If thickness of sediment material in mud-trapping chamber reaches 1/3 of water depth -respectively buoyant oil reaches the thickness of 12-14 cm in oil separating compartment-equipment should be emptied, separated material should be removed. If the thickness becomes higher quality of outgoing water can not be guaranteed!

Filters installed in equipment may be flushed back, by their regular cleaning their life-cycle can be increased, their cleaning efficiency can be improved.

To clean the filtering unit with pressure-steam-cleaner, detergent or any other chemicals is FORBIDDEN!!

Emptying of equipment may happen by sewage transporter or sump-pump. After emptying it is recommended to flush the inner part and process units of the equipment by water jet, in order to remove accidentally resided contaminants. Flush water should be removed from the equipment. To put separator in operation again equipment shall be filled up with clean water.

At maintenance works relevant safety at work prescriptions should be obeyed!

Smoking and use of free flame during works is strictly FORBIDDEN!!!

Only personnel authorized to handle and control equipment allowed entering it.

Protective cordons should be employed to surround the equipment before beginning of works, to prevent accidents by falling into tank across opened manhole.

Works can not be commenced if shower or rain be forecasted, respectively work should be terminated in case of rainfall, and personnel should be evacuated from the tank.

Sediment and oil removed during cleaning should be considered as hazardous waste, storage should be done by legal prescriptions being in force, transport be done by authorized firm.

In addition record should be kept on operation and maintenance of equipment!