

**Labko® Oil Separator Systems**



FOR STORMWATER TREATMENT  
IN INDUSTRIAL, STORAGE AND  
TRAFFIC AREAS

# Labko® Bypass System for stormwater treatment

- prevents the washout of the separator system during heavy downpour
- economical solution for stormwater treatment in large areas
- treats 95 % of the annual rainfall

Many hazardous substances, such as oil and heavy metals, are carried from surfaced areas into the environment. Up to 80 % of heavy metals are combined with solid matter, such as sand and silt, which are carried along with the rainwater.

To save nature from harmful emissions the rainwater flowing from surfaced areas should be cleaned. In general, the areas from which the rainwater is collected are relatively large, for example car parks, industrial areas, traffic areas, terminals, or airfields. Environmentally most delicate areas should be equipped with a system processing all the downfall. In normal conditions it is possible to reduce the investment costs by using Labko Bypass System.

## Operation and structure of the Labko Bypass System

Within the Labko Bypass System the peak flow of the stormwater is directed through the Labko FRW Flow Regulation Well to pass the separator system consisting of the EuroHEK sand and sludge trap and the EuroPEK oil separator. Following the separator system there is the EuroNOK FRW sampling shaft, in which the bypass line is reconnected with the rainwater line. In spite of the bypass flow, a well dimensioned Labko Bypass System treats approximately 95 % of the annual downfall. Thanks to the Labko Bypass System, stormwater treatment is not only effective, but cost-effective, too.

## Efficient and cost-effective stormwater treatment

It is a research observation that most of the oils and heavy metals carried with the rainwater from surfaced areas are mainly washed away at the beginning of the downpour.

At this point the flow rate has not reached its maximum yet, letting the separators in the Labko Bypass System process all the rainwater. The following peak flow that contains fewer pollutants is directed past the separator system. Thus, the washout

## Designed for use in

- parking lots
- industrial yards and storage areas
- traffic areas
- terminals
- airfields

of the separator is prevented, and oil will not be carried from the separator to the sewer system, which normally leads the rainwater to the ground.

Considerable savings are obtained by using Labko Bypass System, in comparison with cleaning systems, which are sized to treat the whole nominal flow. Smaller and more economical separators can be used in a Labko Bypass System than in a direct system.

## Local Storm Water Management

Rainwater and storm water management is becoming an issue of increasing importance in the future. In addition to the traditional rainwater sewerage we need new solutions to ensure the optimal treatment of the storm water as close as possible to its origin without harming the natural water balance.

Wavin Q-Bic infiltration system is the solution to this need. Wavin Q-Bic infiltration system presents an extensive range of applicability. It excels in storm water management, as in infiltration, balancing the peak flows and floods, and in preventing erosion at sewer outflow.

For further information, see the Wavin Q-Bic Product Guide.

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**Dimensioning the oil separator system for rain waters**

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**Labko FRW Flow Regulation Wells**

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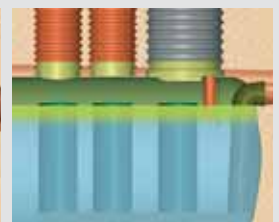
**EuroHEK and EuroHEK Omega Sand and Sludge Traps**

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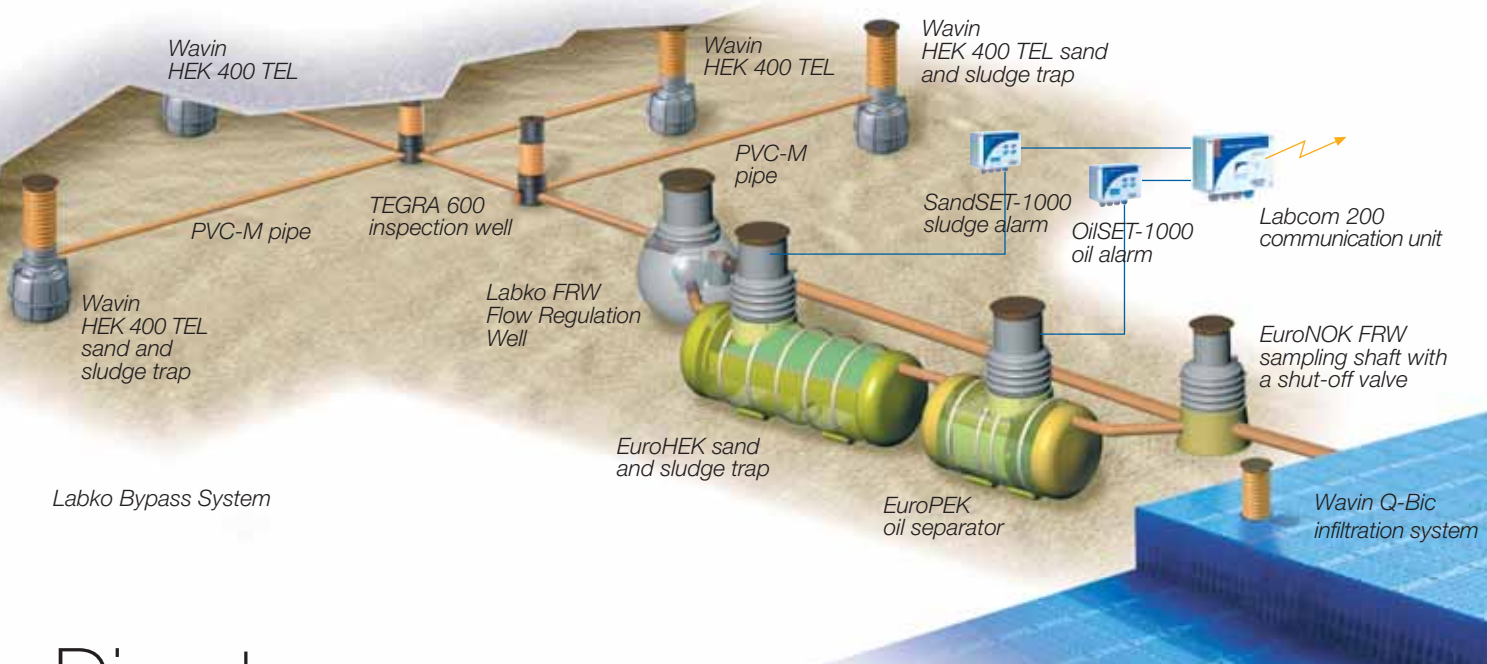


**EuroPEK Roo Oil Separators**

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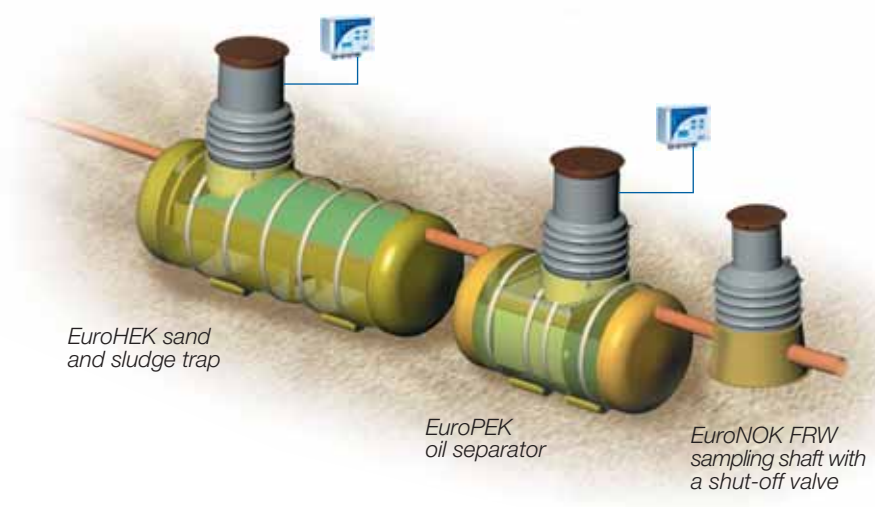
**EuroPEK Filter Oil Separators**



Labko Bypass System

# Direct system

In environmentally sensitive areas or in areas, which for some other reason require 100 % cleaning of the rainwater, it is reasonable to use the traditional, so called direct system. This system is dimensioned to treat the entire downpour, thus requiring larger separators and causing more substantial building costs than the Labko Bypass System.



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**EuroNOK FRW Sampling Shafts with a shut-off valve**

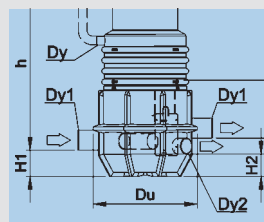
**EuroHUK and PP-HUK 600 Maintenance Shafts**

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**Alarm devices and remote monitoring**

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**Technical info**

[www.wavin-labko.fi](http://www.wavin-labko.fi)



**On our internet pages you can find for example**

- System drawings (AutoCAD and pdf)
- Instructions for installation, operation and maintenance
- Accessories
- Test reports and approvals

# Dimensioning the oil separator system for rain waters

The stormwater treatment system is comprised of a sand and sludge trap, oil separator and sampling shaft. Into the Labko Bypass System also an Labko FRW Flow Regulation Well is applied.

## Determining the nominal size of an oil separator system according to the EN 858 standard

The first step in dimensioning a stormwater treatment system is determining the rainwater flow rate and the nominal size of the separator.

<b>Rainwater flow rate</b> $q = k * q_s * A$ k = run-off coefficient (e.g. asphalt surface k = 1, sand k = 0,7) q <sub>s</sub> = the rainfall intensity (l/(s*m <sup>2</sup> )) (generally 0,015 l/(s*m <sup>2</sup> )) A = the area receiving rainfall (m <sup>2</sup> )			
<b>Nominal size of the oil separator for rainwaters</b> $NS = q * f_d$ q = rainwater flow rate f <sub>d</sub> = density factor for the relevant oil  <b>Density factor f<sub>d</sub> for different oil densities ρ (g/cm<sup>3</sup>)</b>			
<b>EN Class of the separator</b>	ρ ≤ 0,85	0,85 < ρ ≤ 0,9	0,9 < ρ ≤ 0,95
<b>Class I</b>	1	1,5	2
<b>Class II</b>	1	2	3
After calculation select the next higher preferred nominal size.			

## Dimensioning the sand and sludge trap

The suitable sand and sludge trap is chosen according to the nominal size of the oil separator and the requirements of the installation site. Minimum sludge capacity is calculated according to the following table. A well-sized sand and sludge trap contributes to lower maintenance costs of the oil separator.

Estimated sludge volume	Minimum sludge trap volume
<b>Small</b> - rainwater from areas with estimated low quantity of solids	(100*NS)/f <sub>d</sub>
<b>Medium</b> - Filling station yards - rainwater from car parks	(200*NS)/f <sub>d</sub>
<b>Large</b> - areas with storage or use of working, farming or earth-moving vehicles	(300*NS) f <sub>d</sub>
NS = nominal size of the separator f <sub>d</sub> = density factor for the relevant oil <ul style="list-style-type: none"> <li>• Small sludge capacity is not recommended with NS10 or smaller separators</li> <li>• The smallest capacity of a sand and sludge trap is 600 l</li> </ul>	

## Dimensioning the sampling shaft with a shut-off valve

The sampling shaft is chosen according to the sewer size of the oil separator and the installation depth.

## Dimensioning example: Dimensioning the separator system for stormwater treatment of a car park in an environmentally sensitive area

Start-out data: area 800 m <sup>2</sup> , rainfall intensity 0,015 l/(s*m <sup>2</sup> ), oil product densities 0,85 g/cm <sup>3</sup> , f <sub>d</sub> = 1,0	
<b>Oil separator</b>	q = 1 * 0,015 * 800 = 12 l/s NS = 12 l/s * 1,0 = 12 l/s, EuroPEK NS15 is chosen
<b>Sand and sludge trap</b>	Minimum sludge trap volume (200*15)/1,0=3000 l, EuroHEK 4000 is chosen
<b>Sampling shaft with a shut-off valve</b>	Is chosen according to the pipe size of the separator EuroNOK DN160

# Dimensioning Labko® Bypass System

## Determining the nominal size of the oil separator

In Labko Bypass System the nominal size of the oil separator is reduced to 1/3 of the original measure.

$$NS_{bypass} = 1/3 * NS$$

NOTE

This may vary depending on the country and the project.

## Dimensioning the sand and sludge trap

The size of the sand and sludge trap remains as it is.

## Dimensioning the Labko FRW Flow Regulation Well and the EuroNOK FRW sampling shaft

The Labko FRW Flow Regulation Well is chosen according to the table on page 13 and EuroNOK FRW sampling shaft according to the table on page 15, e.g. 10/30, in which 30 is the nominal size of the separator for rainwater (NS) and 10 the nominal size of the separator in the Labko Bypass System (NS<sub>bypass</sub>).

**Dimensioning example:  
Direct System/Labko Bypass System**

The rainwater from the asphalted industrial area are meant to be led through an oil separator system. Area: 30000 m<sup>2</sup>.

Rainwater flow is calculated as follows:

$$q = k * q_s * A$$

$$q = 0,015 \text{ l/(s*m}^2\text{)} * 30\ 000 \text{ m}^2 * 1 = 450 \text{ l/s}$$

When the rainwater flow is known, the nominal size of the separator can be calculated:

$$NS = q * f_d$$

$$NS = 450 \text{ l/s} * 1 = 450$$

The estimated sludge volume of the factory yard is small, so the following formula is used when dimensioning the sand and sludge trap:

$$(100 * NS)/f_d$$

$$(100 * 450)/1 = 45\ 000$$

With largest possible standard-size sand and sludge traps 150 l/s (NS150) can be sewerred: as with oil separators, 3 parallel systems must be used in this example, too.

**Traditional way of oil separating (direct system) – 100 % stormwater treatment**

According to the data in the previous example, 3 x NS 150 systems are chosen:

- 3 EuroHEK sand and sludge traps  
(sludge alarm SandSET-1000)
- 3 EuroPEK NS150 oil separators (OilSET-1000 oil alarm)
- 3 EuroNOK DN400 sampling shafts with a shut-off valve

**Oil separating with Bypass System – 95% stormwater treatment**

When the Labko Bypass System is used, the oil separator is dimensioned to treat 1/3 of the rainwater flow in the whole area. The nominal size of the oil separator is calculated with the following formula:

$$NS_{\text{bypass}} = 1/3 * NS$$

$$NS = 1/3 * 450 * 1 = 150$$

Using the Labko Bypass System does not affect the size of the sand and sludge trap.

Labko FRW Flow Regulation Well is chosen according to the table on page 13 (150/450). The following separator system results:

- 1 Labko FRW 150/450 Flow Regulation Well
- 1 EuroHEK 50000 sand and sludge trap  
(sludge alarm SandSET-1000)
- 1 EuroPEK NS150 oil separator (OilSET-1000 oil alarm)
- 1 EuroNOK FRW 150/450 DN400 sampling shaft with a shut-off valve



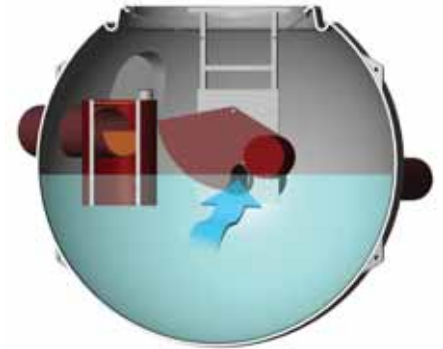
**Comparison of costs**

The investment cost is lower with the Labko Bypass System than with the direct system, particularly in large traffic and yard areas. In the adjacent dimensioning example the Labko Bypass System is approximately 50 % lower in its costs than the direct system meant to treat the same amount of rainwater flow.

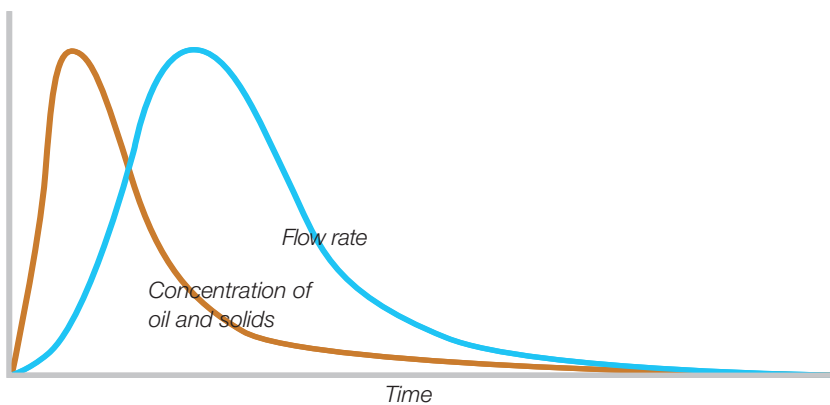
# Labko® FRW Flow Regulation Well

During a heavy downpour, the Labko FRW Flow Regulation Well adjusts and restricts the incoming flow to the separator system. The Labko FRW Flow Regulation Well contains a mechanical flow regulator, which provides an even flow into the separators, even if the incoming flow should exceed the dimensioned flow of the separator

system. The excess flow is directed via the bypass pipe to pass the separator system. This prevents the washout of the gathered sands and oils in the separator system. Labko FRW Flow Regulation Well is dimensioned to process approximately 95% of the annual downpour.



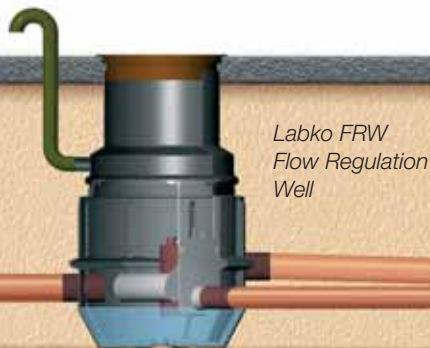
During normal downfall all the rainwater is directed through the separator. The figure presents the early phase of a heavy downpour, during which the FRW flow regulation mechanism starts to function. The flow regulator only allows the maximal rainwater amount corresponding to the dimensioned flow into the separator system. The excess flow is shortly dammed, until let flow via bypass pipe past the separator system.



**First Flush phenomenon:** Most of the oils and heavy metals carried by the rainwater are flushed from surfaced areas during the first phase of the downpour. At this point, the rainwater flow has not reached its maximum yet, allowing all the rainwater flow through the separators of the Labko Bypass System.



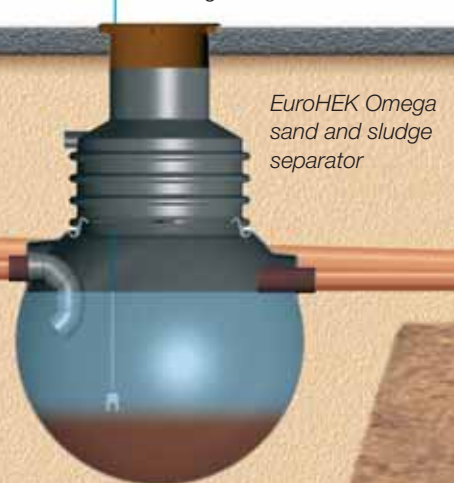
Also during the peak flow of the heavy downpour the separator system functions normally. The Labko FRW Flow Regulation Well leads the excess flow exceeding the dimensioned flow of the oil separator via the bypass pipe to pass the separator system. Thus the washout of the separators is prevented.



Labko FRW  
Flow Regulation  
Well



SandSET-1000  
sludge alarm



EuroHEK Omega  
sand and sludge  
separator

# EuroHEK® and EuroHEK Omega® Sand and Sludge Traps

The rainwater from surfaced areas carries sand and finer-grained sludge. Most of the heavy metals occurring in traffic areas are bound to these solid particles.

In EuroHEK sand and sludge trap the sand carried by the rainwater is separated. Thus, the sand and sludge trap contributes to the smooth operation of the oil separator and to lower maintenance costs.

The rainwater to be treated flows into the sand and sludge trap, which separates sand, sludge and further solids from the

water. The solid-free rainwater flows from the sand and sludge trap into the oil separator. According to the EN 858 standard, a sand and sludge trap is always a part of the oil separator system.

EuroHEK 600...1000 sand and sludge traps are designed for stormwater treatment in parking areas, petrol station filling areas and in yard areas. The larger EuroHEK Omega 2000...5000 and EuroHEK 6500...50000 are the sand and sludge traps for e.g. parking lots.

SandSET-1000 sludge alarm controls the filling of the sludge storage space and indicates an alarm when the sand and sludge trap must be emptied (some 1/3 of the water capacity is filled with sand). The timely emptying of the sand and sludge trap ensures the proper functioning of the oil separator. SandSET-1000 is provided as a standard in EuroHEK 10000 and larger sand and sludge traps. For smaller sand and sludge traps the SandSET-1000 is available as an accessory.



*SET-2000  
oil alarm*



*EuroPEK Roo  
oil separator*

*EuroNOK FRW  
sampling shaft with  
a shut-off valve*

# EuroPEK® Roo Oil Separator

EuroPEK Roo oil separators are class I separators. They are designed and tested according to the EN 858 standard.

The separators also meet the requirements of the EN 476 standard of maintainability and watertightness. EuroPEK Roo oil separators are suitable for processing all kinds of oily wastewater and rainwater.

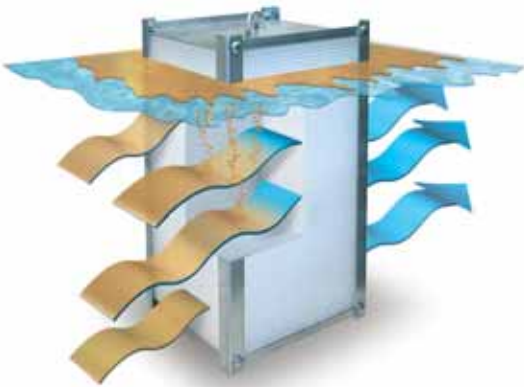
EuroPEK Roo oil separators are equipped with coalescing units, which build up a very large separator area. 1 m<sup>3</sup> of the coalescing unit material is equivalent to the area of 443 m<sup>2</sup>. In design this allows a small physical

size without making compromises in the purifying efficiency.

The water led into the separator flows through the coalescing cells, where the oil drops adhere to the surface of the coalescing unit, coalesce, and become separated from the water flow. As the size of the oil drop grows, its upward velocity increases, and the oil drops rise through the channels in the coalescing unit. The separated oil is stored as a homogenous layer on the surface of the water in the separator.

In the separator design, a special attention is given to their maintainability. All parts can be lifted off the separator for maintenance. The plastic coalescing unit and its stainless steel frame are designed to allow an easy maintenance and cleaning.

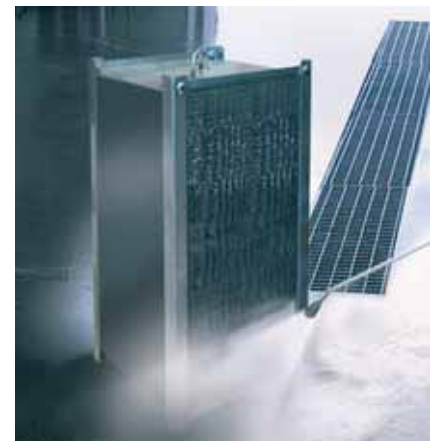
The coalescing units can be cleaned from solids using a pressure washer. After cleaning the coalescing units gain their 100 % purifying efficiency again. The possibility to clean the coalescing units significantly reduces the maintenance and service costs of the separator. There are no filters, which are



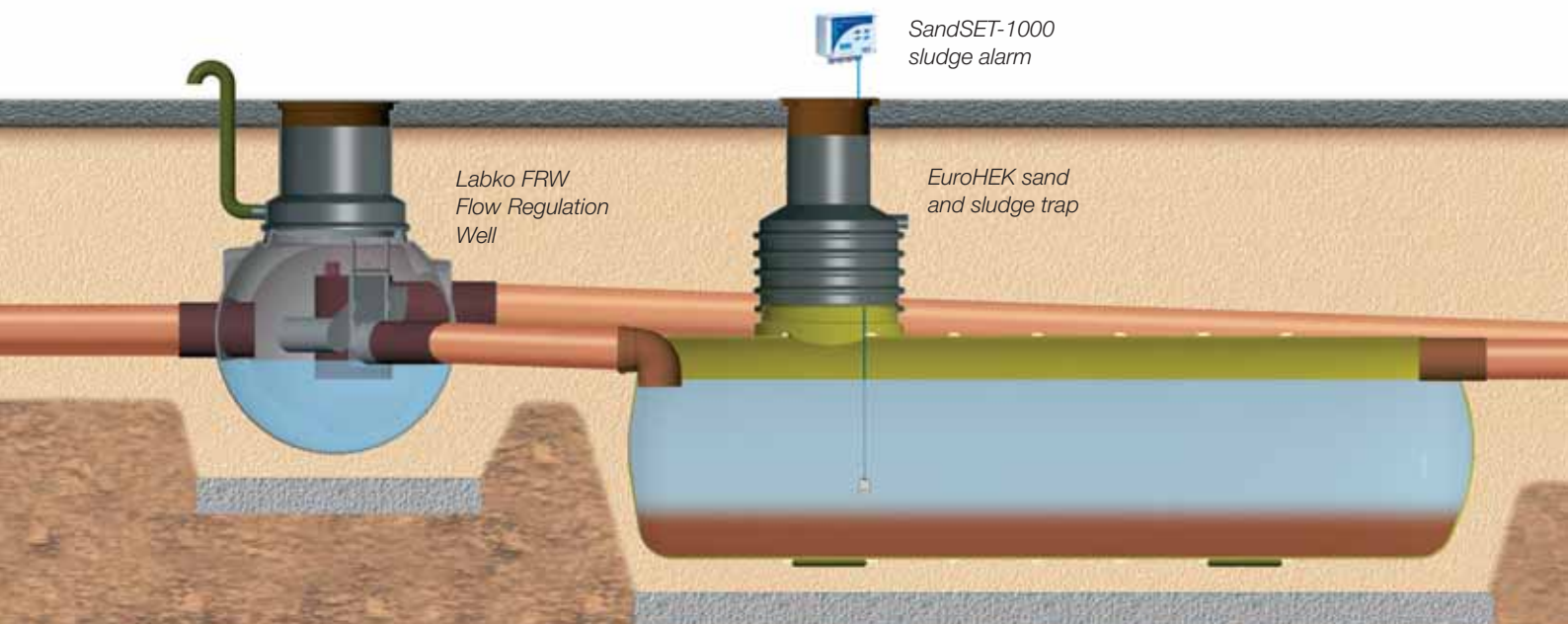
*Operating principle of the coalescer.*



*Coalescing unit can be removed for maintenance.*



*Coalescing unit can be cleaned from solids using pressure washer.*



*Labko FRW  
Flow Regulation  
Well*

*SandSET-1000  
sludge alarm*

*EuroHEK sand  
and sludge trap*

classified as hazardous waste, to be disposed of. Separators equipped with coalescing units require no cleaning as regards to oil – a simple emptying is sufficient.

EuroPEK Roo oil separators present a full range of applicability, and they show excellent purification results. They are best applied in areas, in which there is a high content of solids in the wastewater and rainwater flow,

meaning e.g. waste treatment plants or collecting sites, scrap yards, service and storage sites for earthmovers, and areas with peat processing.

These oil separators include the OilSET-1000 oil alarm with ATEX compliance as a standard. It indicates an alarm if the oil storage space is full. Further information on the alarm devices and data transfer can be found on page 12.



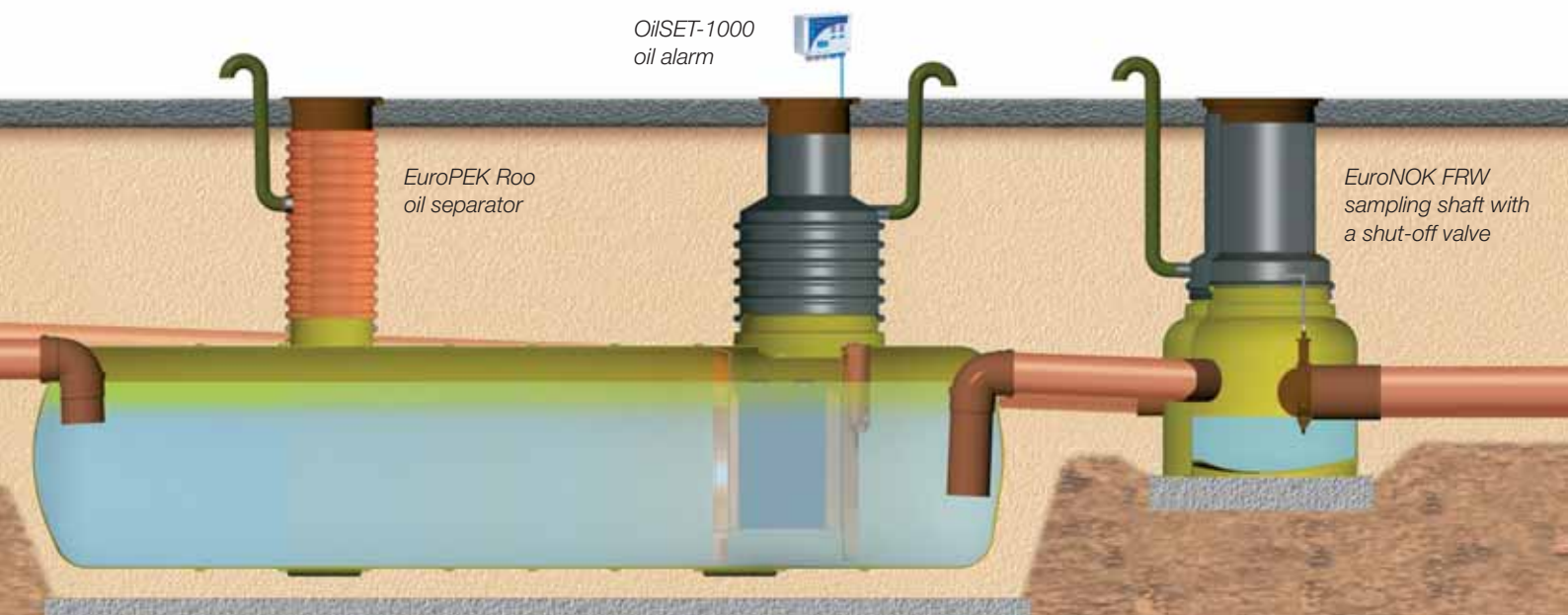
**Example of a type test relating to effectiveness of a separator for light liquids according to the standard EN 858-1: EuroPEK Roo NS15 oil separator, class I**

Test procedure and results			
Nominal effluent flow	Q = 15 l/s	Water volume of each test	V = 18 000 l
Duration of test	T = 20 min	Oil volume of each test	V <sub>oil</sub> = 90 l
Effluent flow l/s	Sample no.	Hydrocarbons in the discharge water mg/l	
15	1	0,8	
	2	0,9	
	3	0,8	
	4	0,8	
	5	0,9	
Mean value		0,9 mg/l	
Requirements		≤ 5,0 mg/l	



EuroPEK Roo NS3...NS30 models have been practically tested in LGA laboratories and are approved with good results. Larger models up to the nominal size NS150 are measured and calculatory approved according to the EN 858-1 standard.

*The superb cleaning efficiency of the EuroPEK Roo oil separators is verified by flow tests run in compliance with the EN 858 standard.*



# EuroPEK® Filter Oil Separator

EuroPEK Filter is a class I oil separator. It is designed and tested according to the requirements of the EN 858 standard.

The cleaning capacity of the EuroPEK Filter is based on a coalescent 3-D filter. There are 1-4 filters in each separator, depending on the model. EuroPEK Filter separators are made of reinforced plastic and they are

available in size classes NS20-NS150. EuroPEK Filter separators are designed for areas with only a low quantity of solids and oils in the rainwater.

As a standard, an ATEX-approved SET-2000 oil alarm is included in the EuroPEK Filter oil separator.

The oil alarm signals, not only when emptying is needed, but in case of blocking, too. Further information on the alarm device and data transfer can be found on page 12.



The superb cleaning efficiency of the EuroPEK Filter oil separators is verified by flow tests run in compliance with the EN 858 standard.



 SandSET-1000  
sludge alarm

Labko FRW  
Flow Regulation  
Well

EuroHEK sand  
and sludge trap

# EuroNOK® FRW Sampling Shaft with a shut-of valve

According to the EN 858 standard, a sampling shaft always builds a part of the oil separator system. The EuroNOK sampling shafts make it possible to monitor the quality of the wastewater or rainwater that is led into the sewer system.

In a direct system the EuroNOK sampling shaft is installed to follow the oil separator. In the Labko Bypass System, the EuroNOK FRW is used. The difference in the EuroNOK FRW is that the bypass-pipe is connected back to the rainwater sewer. Both the EuroNOK and the EuroNOK FRW contain a shut-off valve that makes it possible to close the sewer line, should an accident occur in the area.

# EuroHUK® and PP-HUK 600 Maintenance Shaft

The EuroHUK maintenance shaft is a water-proof solution in compliance with the oil separator standard to go with the separators. The EuroHUK maintenance shaft is selected according to the installation depth of the separator.

Since the maintenance shaft is light in its weight, the installation goes fast. Except for the smallest model, all the shafts have steps inside to ease the maintenance. A special-shaped gasket, which is delivered with the maintenance shaft, guarantees that the separator and the shaft are compatible and that their junction is tight.

PP-HUK 600 maintenance shafts are used with EuroPEK Filter oil separators to ease the maintenance of their filters. PP-HUK 600 is a waterproof solution in compliance with the oil separator standard to go with the separators.

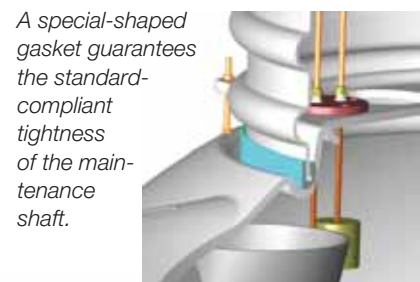
Cast iron covers and frames are available as accessories for the maintenance shafts. They are chosen according to the traffic load on the site.



*EuroNOK FRW sampling shaft with a shut-off valve.*



*EuroHUK maintenance shafts installed.*



*A special-shaped gasket guarantees the standard-compliant tightness of the maintenance shaft.*

SET-2000  
oil alarm

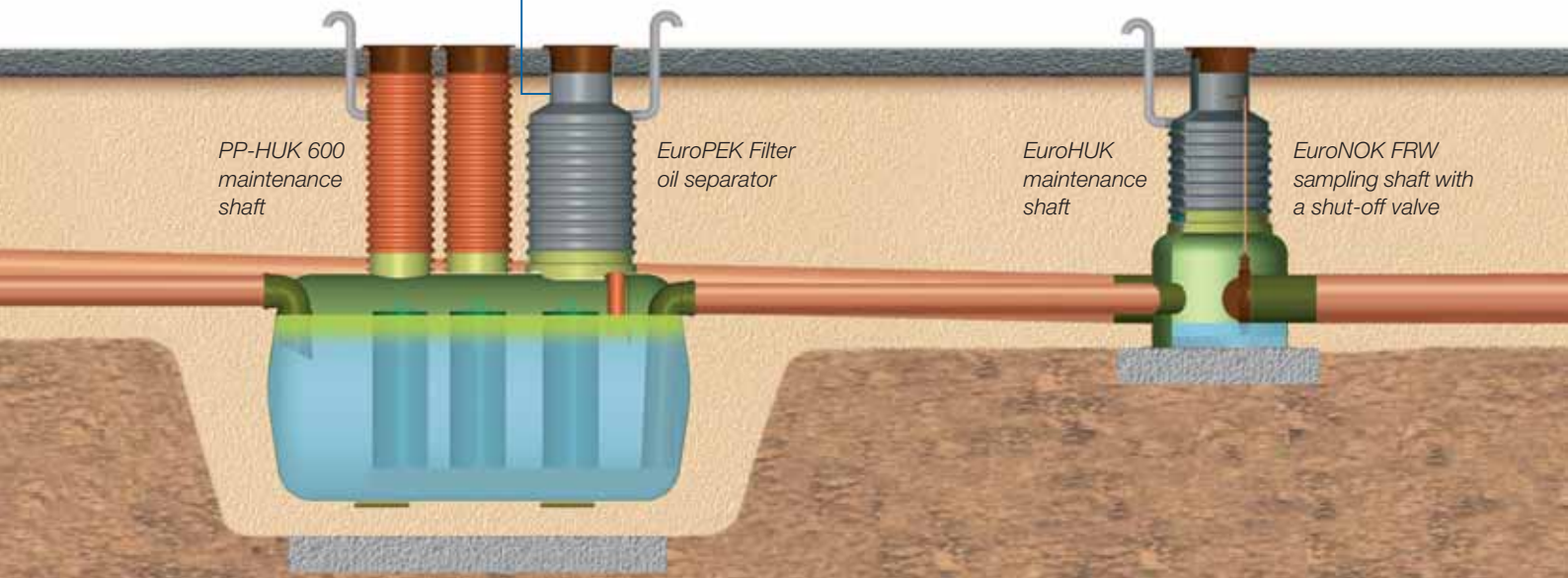


PP-HUK 600  
maintenance  
shaft

EuroPEK Filter  
oil separator

EuroHUK  
maintenance  
shaft

EuroNOK FRW  
sampling shaft with  
a shut-off valve



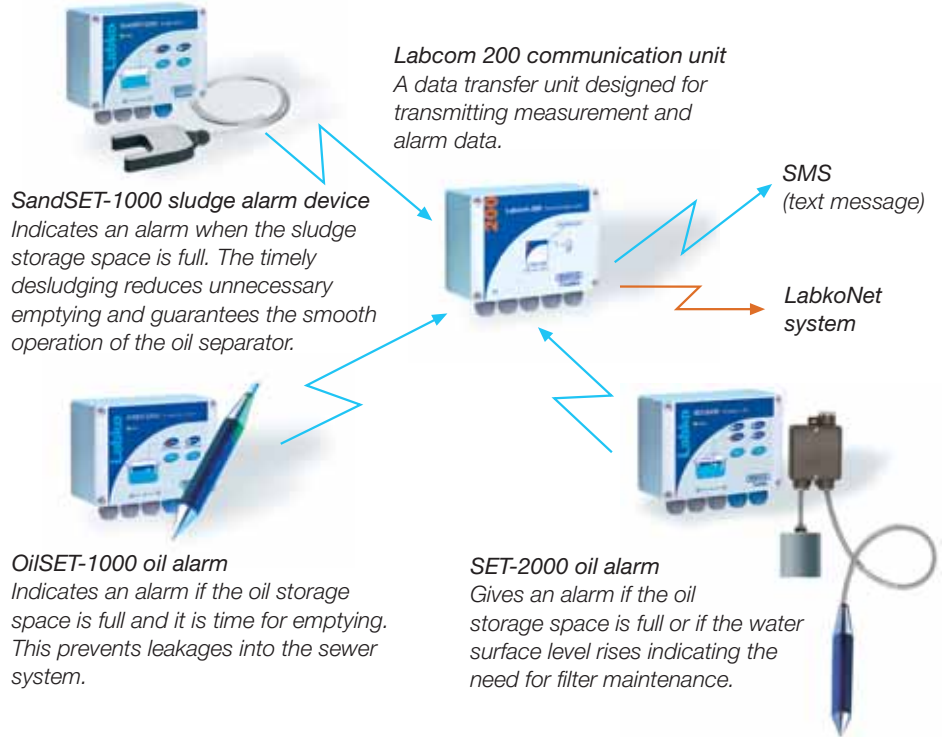
# Alarm devices and remote monitoring

All the separators of Wavin-Labko can be equipped with alarm units that control the functioning of the separator. Most separators include the alarm devices as a standard.

The alarm can be transmitted directly to the user's house automation system or with the Labcom communication unit to a mobile phone. Furthermore, the alarm can be transmitted via LabkoNet server to those who find the information is essential.

Introducing and using the LabkoNet system is easy; no separate software is needed. Only an Internet connection, Labcom 200 communication unit, gauges and alarm devices are needed.

When the separators are remotely monitored, timely emptying is made possible, and thus the environmental risks are minimized and costs are lowered.

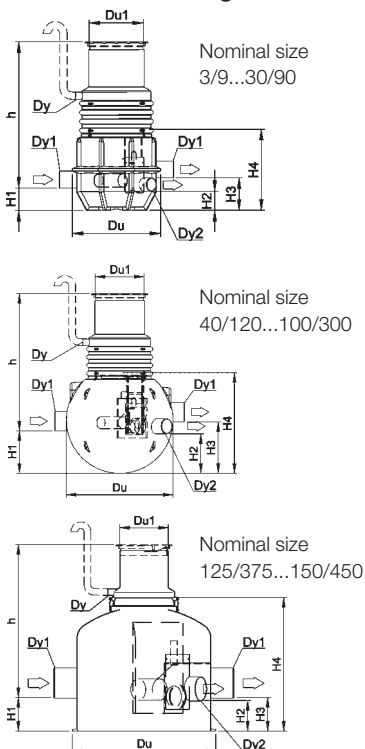


## Technical info

### Legend

- A = area of the yard (0.015 l/(s\*m<sup>2</sup>))
- Du = outer diameter
- Du1/Du2 = inner diameter
- Dy = outer diameter of the ventilation pipe (accessory)
- Dy1/Dy2 = outer diameter of the connection pipe
- H1/H2/H3/H4 = height
- L = length
- h = installation depth
- V = effective volume
- V<sub>o</sub> = oil storage volume
- V<sub>s</sub> = sludge storage volume
- Lkm = number of the coalescent 3-D filters

### Labko FRW Flow Regulation Wells

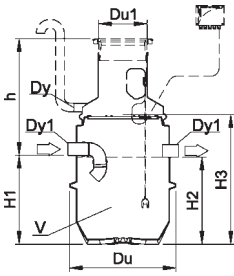


Labko FRW	Nominal flow into the separator	Total flow of the system	A	Du	Du1	Dy	Dy1	Dy2	H1	H2	H3	H4	h*	Weight
	l/s	l/s	m <sup>2</sup>	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
NS3/9	3	9	600	1300	800	110	160	110	330	280	480	1200		80
NS6/18	6	18	1200	1300	800	110	200	160	330	280	480	1200		85
NS10/30	10	30	2000	1300	800	110	250	200	330	280	480	1200		105
NS15/45	15	45	3000	1300	800	110	250	200	330	280	480	1200		115
NS20/60	20	60	4000	1300	800	110	250	250	330	280	480	1200		120
NS30/90	30	90	6000	1300	800	110	315	250	330	280	480	1200		140
NS40/120	40	120	8000	1780	800	110	315	315	700	650	850	1650		225
NS50/150	50	150	10000	1780	800	110	400	315	700	650	850	1650		230
NS65/195	65	195	13000	2170	800	110	400	400	900	850	1100	2100		320
NS80/240	80	240	16000	2250	800	110	500	400	900	850	1100	2200		400
NS100/300	100	300	20000	2250	800	110	500	400	900	850	1100	2200		400
NS125/375	125	375	25000	2200	800	110	500	400	550	500	550	2250		850
NS150/450	150	450	30000	3000	800	110	500	400	600	550	600	2300		1300

\* For further information on EuroHUK 800: table below.

EuroHUK 800	FRW NS3/9	FRW NS10/30	FRW NS65/195	FRW NS125/375
	-NS6/18	-NS50/150	-NS100/300	-NS150/450
	h (mm)	h (mm)	h (mm)	h (mm)
9-13	1300-1700	1300-1700	1700-2100	2100-2500
13-17	1700-2100	1700-2100	2100-2500	2500-2900
17-21	2100-2500	2100-2500	2500-2900	2900-3300
21-25	2500-2900	2500-2900	2900-3300	3300-3700

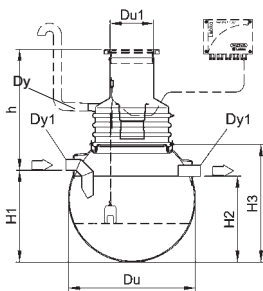
**EuroHEK 600...1000 sand and sludge traps**



EuroHEK	Du	Du1	Dy	Dy1	H1	H2	H3	h*	V	Weight
	mm	mm	mm	mm	mm	mm	mm	mm	l	kg
600	1320	600	110	110/160/200	700	680	1200	*	600	75
1000	1320	600	110	110/160/200	1100	1080	1600	*	1000	105

\* For further information on EuroHUK 600: table on page 15.  
SandSET-1000 sludge alarm as an accessory.

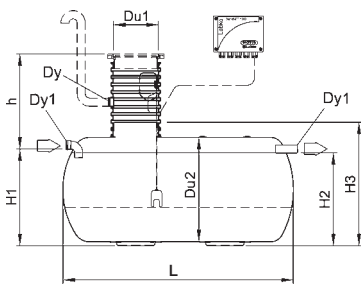
**EuroHEK Omega sand and sludge traps**



EuroHEK Omega	Du	Du1	Dy	Dy1	H1	H2	H3	h*	V	Weight
	mm	mm	mm	mm	mm	mm	mm	mm	l	kg
2000	1750	600	110	110...200	1280	1200	1650	2000	170	
4000	2170	600	110	110...200	1730	1650	2100	4000	230	
5000	2200	600	110	110...200	1820	1750	2250	5000	280	

\* For further information on EuroHUK 600: table on page 15.  
SandSET-1000 sludge alarm as an accessory.

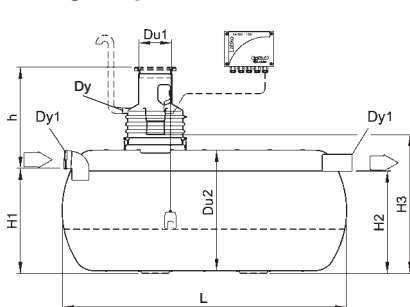
**EuroHEK 6500...8000 sand and sludge traps**



EuroHEK	Du1	Du2	Dy	Dy1	H1	H2	H3	L	h*	V	Weight
	mm	mm	mm	mm	mm	mm	mm	mm	mm	l	kg
6500	600	1600	110	110...400	1410	1360	1950	4000	6500	400	
8000	600	1600	110	110...400	1410	1360	1950	4900	8000	520	

\* For further information on PP-HUK 600: table on page 15.  
SandSET-1000 sludge alarm as an accessory.

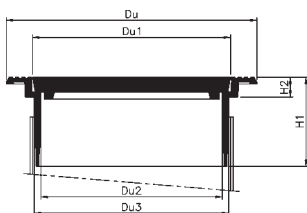
**EuroHEK 10000...50000 sand and sludge traps**



EuroHEK	Du1	Du2	Dy	Dy1	H1	H2	H3	L	h*	V	Weight
	mm	mm	mm	mm	mm	mm	mm	mm	mm	l	kg
10000	600	1600	110	110...400	1410	1360	1950	6100	10000	620	
13000	600	2200	110	110...400	1930	1880	2550	4400	13000	710	
15000	600	2200	110	110...400	1930	1880	2550	4900	15000	780	
16000	600	2200	110	110...400	1930	1880	2550	5200	16000	820	
20000	600	2200	110	110...400	1930	1880	2550	6400	20000	1000	
30000	600	2200	110	110...400	1930	1880	2550	9300	30000	1660	
40000	600	2200	110	110...400	1930	1880	2550	12200	40000	2260	
50000	600	3000	110	110...400	2650	2600	3350	8500	50000	2570	

\* For further information on EuroHUK 600: table on page 15. SandSET-1000 sludge alarm as an accessory.

**Cover and frame sets**

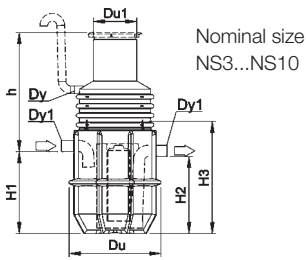


Legend for cover and frame sets

Du = outer diameter of frame    Du2 = clear opening of frame    H1/H2 = height  
Du1 = outer diameter of cover    Du3 = outer diameter of lower part of frame

Cover and frame sets	Du	Du1	Du2	Du3	H1	H2	Weight
	mm	mm	mm	mm	mm	mm	kg
Frame D600	760	600	550	590	270	60	65
Frame D800	930	815	733	780	180	66	55
Cast iron cover D600							
A15 (1,5 tn)							30
C250 (25 tn)							55
D400 (40 tn)							70
Cast iron cover D800							
D400 (40 tn)							65

**EuroPEK Roo oil separators**

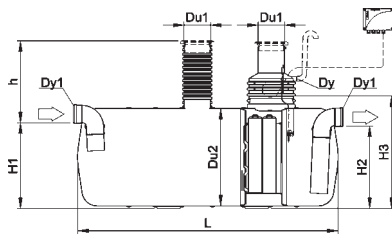


Nominal size  
NS3...NS10

EuroPEK Roo	Maximum flow	Du	Du1	Dy	Dy1	H1	H2	H3	h*	V	V <sub>0</sub>	Lkm	Weight
	l/s	mm	mm	mm	mm	mm	mm	mm		l	l	pcs	kg
NS3	3	1300	600	110	110	770	700	1200		600	150	2	130
NS6	6	1300	600	110	160	770	700	1200		600	150	2	140
NS10	10	1300	600	110	160	1170	1100	1600		1000	150	2	180

\* For further information on EuroHUK 600: table on page 15. OilSET-1000 oil alarm as a standard.

**EuroPEK Roo oil separators**

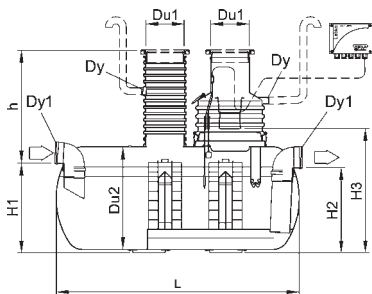


Nominal size  
NS15...NS150

EuroPEK Roo	Maximum flow	Du1	Du2	Dy	Dy1	H1	H2	H3	L	h*	V	V <sub>0</sub>	Lkm	EuroHUK 600	PP-HUK 600	Weight
	l/s	mm	mm	mm	mm	mm	mm	mm	mm		l	l	pcs	pcs	pcs	kg
NS15	15	600	1400	110	200	1300	1230	1750	3500	4450	520	3	1			360
NS20	20	600	1400	110	250	1300	1230	1750	3500	4450	520	3	1			360
NS30	30	600	1600	110	250	1410	1340	1800	4600	7500	900	6	1	1		750
NS40	40	600	1600	110	315	1410	1340	1800	6000	9900	1200	9	1	1		950
NS50	50	600	1600	110	315	1410	1340	1800	7000	11700	1400	9	1	1		1100
NS65	65	600	2200	110	400	1940	1870	2500	5900	19000	1400	8	1	1		1500
NS80	80	600	2200	110	400	1940	1870	2500	7000	22500	1600	8	1	1		1700
NS100	100	600	2200	110	400	1940	1870	2500	8700	28000	2100	12	1	1		2100
NS125	125	600	2200	110	400	1940	1870	2500	11400	37000	3100	12	1	1		2600
NS150	150	600	2200	110	400	1940	1870	2500	13000	42500	3500	12	1	1		2900

\* For further information on EuroHUK 600: table on page 15. OilSET-1000 oil alarm as a standard.

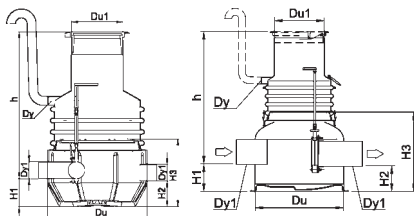
**EuroPEK Filter oil separators**



EuroPEK Filter	Maximum flow	Du1	Du2	Dy	Dy1	H1	H2	H3	L	h*	V	V <sub>0</sub>	Lkm	EuroHUK 600	PP-HUK 600	Weight
	l/s	mm	mm	mm	mm	mm	mm	mm	mm		l	l	pcs	pcs	pcs	kg
NS20	20	600	1600	110	250	1410	1340	1900	3800	6000	640	1	1			500
NS30	30	600	1600	110	250	1410	1340	1900	3800	6000	640	2	1	1		550
NS40	40	600	1600	110	315	1410	1340	1900	3800	6000	640	2	1	1		560
NS50	50	600	1600	110	315	1360	1290	1900	5300	8700	1000	3	1	2		750
NS65	65	600	2200	110	400	1940	1870	2500	5900	19000	1400	4	1	3		1750
NS80	80	600	2200	110	400	1940	1870	2500	7000	22500	1600	4	1	3		2100
NS100	100	600	2200	110	400	1940	1870	2500	8700	28000	2100	4	1	3		2400
NS125	125	600	2200	110	400	1940	1870	2500	11400	37000	3100	4	1	3		3000
NS150	150	600	2200	110	400	1940	1870	2500	13000	42500	3500	4	1	3		3450

\* For further information on EuroHUK 600 and PP-HUK 600: table on page 15. SET-2000 oil alarm as a standard.

**EuroNOK sampling shafts with a shut-off valve**



Nominal size  
110...315

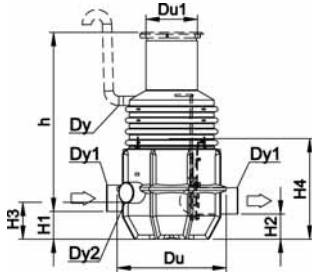
Nominal size  
400...500

EuroNOK	Du	Du1	Dy	Dy1	H1	H2	H3	h*	Weight
	mm	mm	mm	mm	mm	mm	mm		kg
DN110	1260	600	110	110	330	300	800		45
DN160	1260	600	110	160	330	300	800		50
DN200	1260	600	110	200	330	300	800		55
DN250	1260	600	110	250	330	300	800		65
DN315	1260	600	110	315	330	300	800		80
DN400	1400	800	110	400	440	410	1250		270
DN500	1400	800	110	500	440	410	1600		430

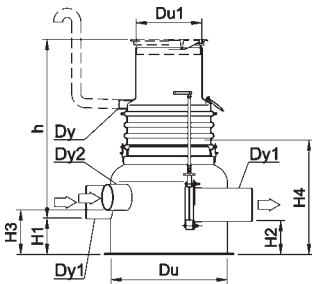
\* For further information on EuroHUK: table below.

EuroHUK	EuroNOK DN110-315	EuroNOK DN400	EuroNOK DN500
	h (mm)	h (mm)	h (mm)
9-13	900-1300	1300-1700	1700-2100
13-17	1300-1700	1700-2100	2100-2500
17-21	1700-2100	2100-2500	2500-2900
21-25	2100-2500	2500-2900	2900-3300

**EuroNOK FRW sampling shafts with a shut-off valve**



Nominal size 160/110...315/315



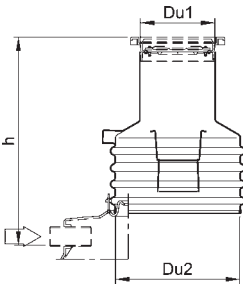
Nominal size 400/315...500/500

EuroNOK FRW	Du	Du1	Dy	Dy1	Dy2	H1	H2	H3	H4	h*	Weight
	mm	mm	mm	mm	mm	mm	mm	mm	mm		kg
DN160/110	1260	600	110	160	110	330	300	430	800		45
DN200/160	1260	600	110	200	160	330	300	430	800		55
DN200/200	1260	600	110	200	200	330	300	430	800		55
DN250/200	1300	600	110	250	200	330	300	430	1200		65
DN250/250	1300	600	110	250	250	330	300	430	1200		95
DN315/250	1300	600	110	315	250	330	300	430	1200		115
DN315/315	1300	600	110	315	315	330	300	430	1200		120
DN400/315	1400	800	110	400	315	440	410	540	1400		280
DN400/400	1400	800	110	400	400	440	410	540	1400		280
DN500/400	1400	800	110	500	400	440	410	540	1800		440
DN500/500	1400	800	110	500	500	440	410	540	1800		450

\* For further information on EuroHUK: table below.

EuroHUK	EuroNOK FRW	EuroNOK FRW	EuroNOK FRW	EuroNOK FRW
	DN160/110	DN200/160	DN250/200	DN500/400 -
		- DN200/200	- DN400/400	DN500/500
	h (mm)	h (mm)	h (mm)	h (mm)
9-13	900-1300	900-1300	1300-1700	1700-2100
13-17	1300-1700	1300-1700	1700-2100	2100-2500
17-21	1700-2100	1700-2100	2100-2500	2500-2900
21-25	2100-2500	2100-2500	2500-2900	2900-3300

**EuroHUK 600 and 800 maintenance shafts**



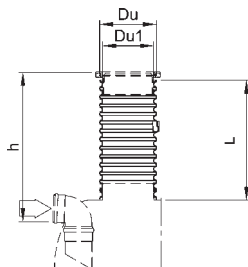
EuroHUK 600	Du1	Du2	h	Weight
	mm	mm	mm	kg
9-13	600	1000	900...1300	20
13-17	600	1000	1300...1700	40
17-21	600	1000	1700...2100	55
21-25	600	1000	2100...2500	80

A suitable cover and frame set is the floating cover and frame set 600.  
 Technical info of cover and frame set on page 13.

EuroHUK 800	Du1	Du2	h	Weight
	mm	mm	mm	kg
9-13	800	1000	900...1300	25
13-17	800	1000	1300...1700	45
17-21	800	1000	1700...2100	60
21-25	800	1000	2100...2500	85

A suitable cover and frame set is the floating cover and frame set 800.  
 Technical info of cover and frame set on page 13.

**PP-HUK 600 maintenance shafts**



PP-HUK 600	Du	Du1	L	h*	Weight
	mm	mm	mm	mm	kg
9-13	670	602	1000	900...1300	15
13-17	670	602	1400	1300...1700	20
17-21	670	602	1800	1700...2100	25
21-25	670	602	2200	2100...2500	30

\* Connection depth of the separator from the ground surface to the water flow of the inlet.  
 A suitable cover and frame set is the floating cover and frame set 600.  
 Technical info of cover and frame set on page 13.



# Labko

## Labko® Oil Separator Systems



### Wavin-Labko in brief

Wavin-Labko Ltd is a Finnish company with over 45 years' experience in developing, manufacturing and marketing of measurement devices and various plastic products.

The range of our plastic products can be divided in three main groups:

Separator systems cover the purification of oily and greasy wastewater. These separator solutions meet the various special needs of business and services construction. Stormwater treatment in traffic and industrial areas with the large flow rates is ecologically managed using the Bypass System. All separator systems are equipped with the essential alarm and monitoring devices.

Wastewater treatment and processing in rural areas is managed with the best possible wastewater system suitable for each specific case. Most complex of these systems are the biological-chemical processing plants, which are suitable for processing the wastewater from small settlements, too.

In the fields of Building&Installation and Civils&Infrastructure, the pipeworks and gullies solutions of Wavin Group cover widely the different needs of both new and renovating construction.

Wavin-Labko Ltd is a part of international Wavin Group, which is the leader in the European market for plastic pipe systems. Wavin Group has a presence in 28 European countries.



Wavin-Labko Ltd reserves the rights to alterations without prior notice. Due to policy of continuous improvement in R&D, technical specifications may change. Installation shall always be made as documented in manufacturer's instructions.



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