

Light liquids which  
are hazardous to water

ACO Oleolift-C

Traffic areas and roads are the transport veins of our society. Especially in connection with the mega trends of drainage - urbanisation, climate change and sustainability - new and smart approaches are required today for handling light liquids.

Light liquids, especially fuels and oils, must never be permitted to enter waterways and soil areas, where they can cause considerable damage to these areas. For this reason, light liquid separators must already be utilised today at various critical locations, such as fuel stations, logistics areas and certain road sections in order to separate fuels and oils.

However, pure separation is usually not sufficient for this purpose. In the event of a rainwater or backflow incident, it must therefore be prevented that fuels can escape from the light liquid separator (refer to EN 858 and DIN 1999-100).



Why backflow protection for light liquid separators?

- Danger to the environment caused by escaping light liquids!
- DIN 1999-100 explicitly demands protection measures to prevent the leakage of light liquids.
- Economic consequences of a leakage (excavated earth, special disposal of the soil, operational failure) will be prevented.

All in one

- Separator
- Sludge trap
- Sampling point
- Pump station
- Backflow protection
- + Emergency system solution

System solution from a single source

Talk to the specialists for backflow protection: ACO

Field of application

Fuel stations



Car washes

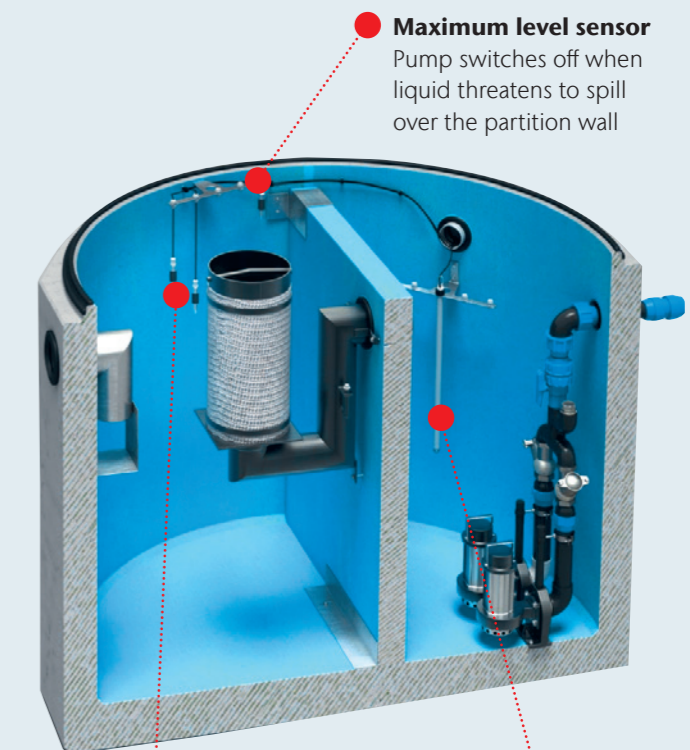


Intelligent sensor control!

Utilising compact integration of the functions in just one tank enables savings for valuable underground space (because one tank is used instead of several), which can be decisive in urban areas, but can also be very practical for reducing the costs resulting from the installation work.

In addition to the integrated backflow protection provided by the pumps in combination with a backflow loop, the Oleolift-C compact system utilises fully automatic sensors to monitor and control the functional parameters for the very first time. This thereby ensures operational reliability even under difficult installation conditions.

Another novelty: the float-free closure. The intelligent sensor control replaces the float and therefore prevents the separator from closing unintentionally while still maintaining full operational safety.



**Oil sensor**  
Measures and records the oil layer thickness and then reports this to the operator

**Level sensor**  
Measures and records heavy rainfall – second Pump will be switched on

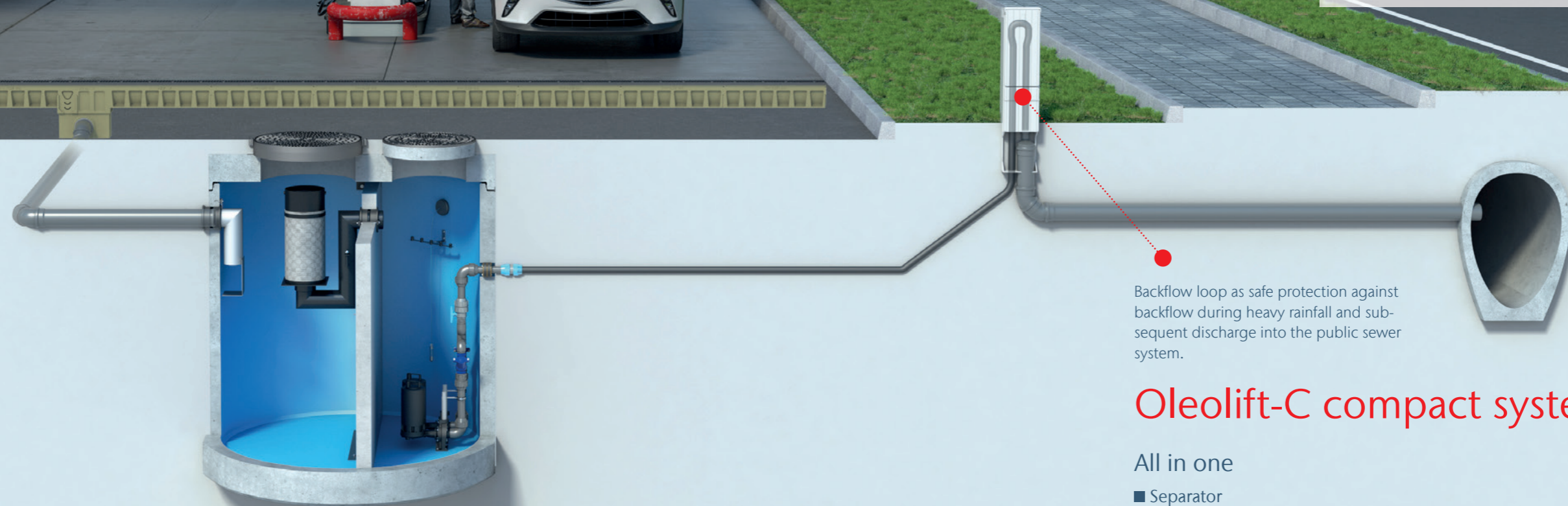


### Fuel stations

**Requirement:**  
Reliable separation of light liquids and discharge of the purified water.

**Special feature:**  
No sufficient gradient from the fuel station to the sewage system: fuel station located below backflow level.

**Smart solution:**  
Oleolift-C compact system.



Backflow loop as safe protection against backflow during heavy rainfall and subsequent discharge into the public sewer system.

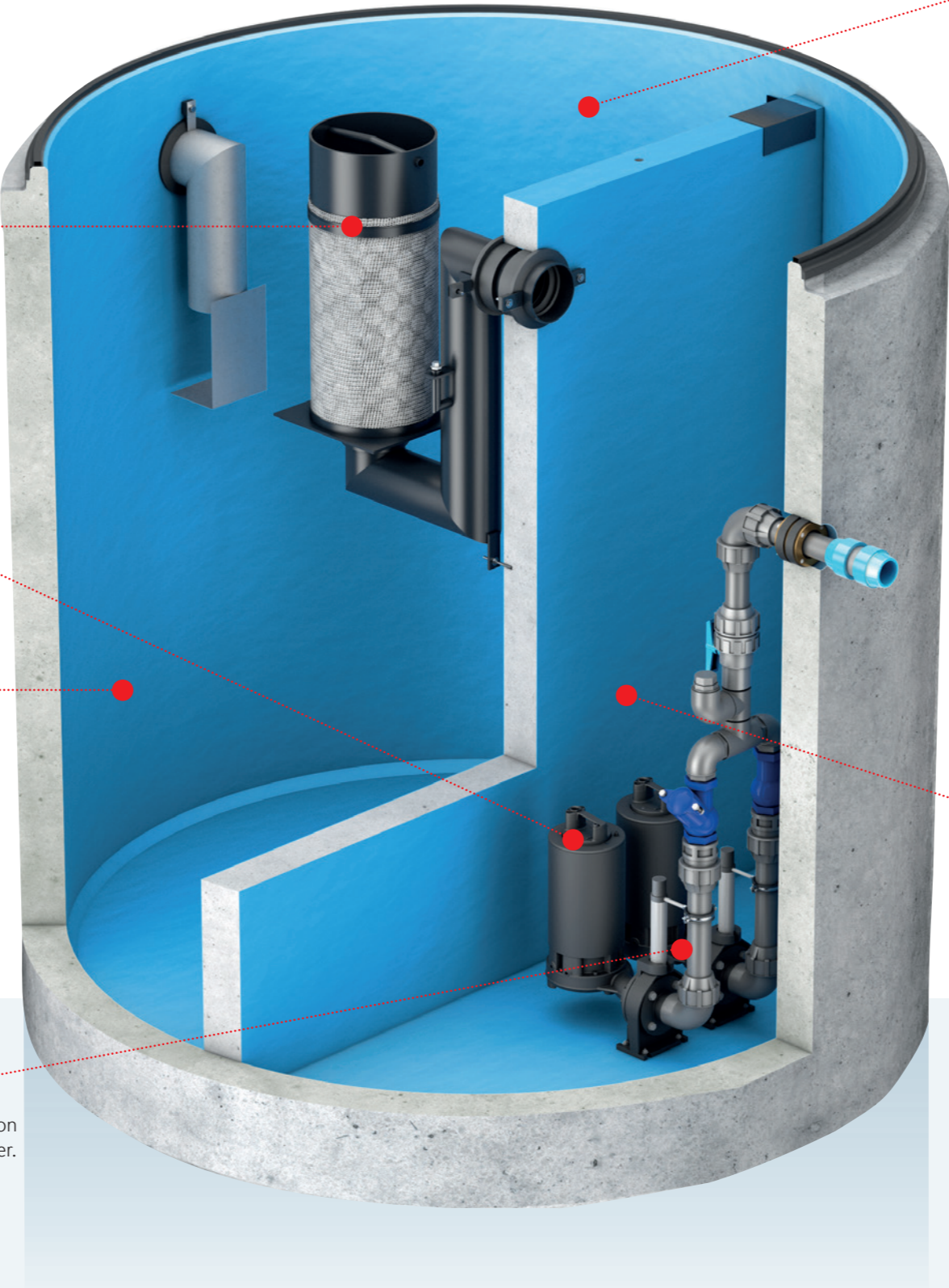
## Oleolift-C compact system

All in one

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- Sludge trap
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# Light liquid separator and pump station

ACO Oleolift-C compact system



**Innovation**  
No float, no unwanted wear of the separator.

**Backflow protection included**  
The combination of integrated pumps and a backflow loop prevents light liquids escaping, thus protecting the environment and preventing subsequent costs.

**High performance despite compact design**  
Proven efficiency in the field of light liquid separation

**Integrated**  
Pump station for compensation of gradients towards the sewer.



**Intelligent sensor control**  
A high degree of digitalisation creates operational reliability and makes easy installation possible.



ACO product advantages

- Underground installation space is very precious: separator, sludge trap, sampling point, pump station and backflow protection in one
- Fast, space-saving, easy and low-cost installation without intermediate piping
- No step-by-step installation necessary
- Maximum design reliability
- Standard solution in an extremely confined space
- Tried and tested as safe: General national technical approval

**Integrated emergency system**  
In the event of an accident it can be used as an emergency tank.

# European standard EN 858 and the supplementary German standards DIN 1999-100

## What is in the EN 858?

- Manufacturers can independently determine the conformity of the product with the standard by self-confirmation and subsequently document this with the CE mark.
- The structures involved can be made of concrete, reinforced concrete, metallic materials or plastic, the built-in parts are made of steel or plastic.
- Not regulated, and therefore subject to country-specific standards, are the regulations for third-party inspection and testing, fire protection, structural calculation verification and leaktightness.

These provisions and regulations are regulated in the new, supplementing DIN 1999-100. This states that:

- The function inspections and tests must always be executed by a certified test centre.
- The structures must fulfil the structural calculation requirements for the required traffic load and earth load.
- The inlet socket and outlet socket located inside the separator must be made of non-flammable materials and thereby ensure that no fire can spread.
- The leaktightness of the entire separator system, including the shaft construction, must always be ensured.
- The consideration of the FAME factor when determining the nominal size NS.
- When the inflow to the separator system can be safely interrupted and/or there is a sufficient excess height on the inflow side, then a backflow safety valve according to EN 13564-1, Type 2 and/or Type 3F, or a demonstrably equivalent system is permissible as backflow safety protection. Or:
- When the inflow to the separator system cannot be safely interrupted, then twin lifting stations according to EN 12050-1, EN 12050-2 or twin pump systems according to EN 752 and/or EN 12056-4 with backflow loop must be provided.

## What does this mean for planners and users in practical terms?

After a long discussion phase in various European standards committees, one has now reached a consensus at a low technical level which would significantly fall below the German safety standards which have been previously applied to date. When only EN 858 is applicable, every manufacturer will be able to determine the conformity of their own products with the standard in future and subsequently document this by applying the CE mark. Testing and inspection at an approved testing and inspection centre would no longer be required. In defined cases, this can therefore result in dangers for the environment in general, but also for planners and users:

- Uncontrolled exceeding of limit values due to insufficient separator performance
- Damage to the separator basin due to lack of stability and the associated contamination of soil
- Spread of fire to the supply pipes and discharge pipes when plastic fittings and components are used
- Uncontrolled leakage of light liquids due to insufficient leaktightness

## Recommendation

In order to be able to guarantee the existing safety standards and for the purposes of practical planning, we hereby recommend that EN 858 Parts 1 and 2 are always implemented in conjunction with DIN 1999-100. This is the only way that planners and operators will be able to reliably protect themselves against damage and possible claims for damages!

**Pay attention to the DIBt approval when utilising an LFA. It means tested and inspected safety in planning and execution.**

## Independent quality testing

ACO Civil Engineering light liquid separators have been tested and inspected by the recognised test centre of LGA Bautechnik GmbH for many years.

# Backflow protection is already in demand

First, some background theory: the "backflow level" i.e. the highest possible permissible level of wastewater at all points on a road, helps to assess which protection measures will need to be implemented. Local public authorities set this level in the wastewater byelaws. It must be taken into account when buildings are planned. The road surface level can usually be taken as a rough guideline.

There are also specific situations which require a pump station downstream of a light liquid separator; these situations are described in DIN 1999-100. This is the case when sufficient excess height on the outflow side of the separator system cannot be created and a safe interruption of the inflow is therefore not guaranteed. The necessary pump station can either be positioned in a separate shaft or combined with the separator in one tank.

Status	Excess height on the inflow side	Excess height on the outflow side	Inflow to the separator can be safely interrupted	Additional requirements
1	✓	✓	—	None
2	✓	✗	✓	BS
3	✓	✗	✗	TLS
4	✗	✓	—	WS
5	✗	✗	✓	WS and BS
6	✗	✗	✗	WS and TLS

✓ = ensured  
 ✗ = not ensured  
 — = not relevant  
 BS = Backflow stop  
 TLS = Twin lifting station  
 WS = Warning system

