

BENE PROTECTON

S-II-I-P high-performance oil separator with safety levels and oil separation

Technical Product Sheet

BENE
Separa

Advanced + low cost safety technology for plants with big amount of oil / high oil density in the waste water

Areas of application

Operations with big amount of oil and/or high oil density in waste water (e. g. motor vehicle operations in the areas of service, maintenance, repair; community and military operations; industry and industrial business).

Nominal sizes

NS 3 to 40

Components and equipment features

"2-stages" high-performance separator plant with petrol and coalescence separator (DIN EN 858 class I and class-II) with:

- Sludge trap (S)
- Petrol separator (II)
- Coalescence separator (I)
- Oil separation
- Oil collection tank
- Sample-taking device (P)

Development status of the technology:

BENE PROTECTON

The latest development of the high-performance separation technology BENE PROTECTON offers important features:

- Approval of DIBt as S-II-I-P-separator with oil separation and tank.
- Small nominal sizes through advantages by the dimensioning (density factor always 1 according to EN 858-2 No. 4.2).
- Safety in case of flood and accumulation of water thanks to double-function swimmer.
- Always only oil in the tank.
- Protection against emulsions thanks to permanently almost oil-free surface of the separator.
- Problem-free maintenance and control thanks to easy accessibility.
- Simple installation:
- No need of exactly level pit sole.
- No need of specially trained, expensive staff,
- Easy plant adjusting and installation,
- Only 2 cm of height difference between inflow and outflow,
- Protection in case of oil spillage thanks to the second and third oil storage,
- Continuous oil release in the integrated oil tank (max. only 50 ml of oil on the separator surface).

EN 858 Recommendation: two levels

The **EN 858 recommends 2-stages plants** e. g. BENE PROTECTON when big amounts of oil flow in and if the oil density is very high (e.g. gear oil, motor oil, synthetic oil, etc.; see also Bene technical info-letter „Inquiring the density factor“)

Functional description

BENE PROTECTON separates substances which can be settled (sludge) and light liquids (oils) from water.

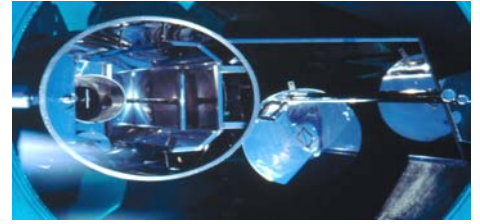
The **oil separation** functions according to flowing and mechanics principles with oleophil coalescence inset for high cleaning performance. Especially the 2-stage change-over of two independent cleaning stages is responsible for the efficient separation. Even higher oil densities and bigger amount of light liquids can be dealt with effectively (see also recommendation EN 858)

Oil separation: Oil rising up will be lead right away by automatic separation unit into an integrated oil tank. Of course without any power supply from outside and complicated control unit. The PROTECTON-swimmer-protection of the oil tank prevents oil from flowing out. This protects many operating conditions in those usually oil is flowing out of the separator. The operator has additional safety and he is protected from any lasting dangerous situations. If the oil tank is full the oil can be pumped out through disposal device. Because there is almost no water in the oil also the costs of disposal are much lower.



Cleaning performance of BENE PROTECTON

BENE PROTECTON cleans waste water in two independent stages, which come one after another. The effective pre-cleaning in petrol separator (class-II) and the oil drainage in the integrated oil tank helps to preserve the high treatment capacity in the coalescence stage (class-I). Thanks to this **also difficult waste water with bigger amount of dirt** can be processed.



Advantages of BENE PROTECTON

- High cleaning performance thanks to 2-stages (class-II and -I) and oil separation
 - Separation of oils also with higher density
 - Big oil storage for big amounts of oil
→ Observance of inflow values also in case of big amounts of dirt
 - Best environment protection through oil separation, so there is no flowing out of oil
 - Through emulsions formation (soaps etc.)
 - Through high water
 - Through canal back draft
 - By accidents with oil
 - Highest costs protection thanks to oil separation
 - Disposal of only oil from the oil tank; no expensive disposal of oil mixed with water
 - Through function of double swimmer no water can get to the oil tank
 - Protection from damage of reputation and maintenance expenses, because the oil can not flow out
→ All of the oil will be stored in a separated oil tank in the separator!
 - Independent certification of the LGA Würzburg and national technical approval from the DIBt
- The high-performance separators BENE PROTECTON have the national technical approvals (Z-54.8-126, Z-54.8-368, Z-54.8-373) from the DIBt (German Institute for building technics) in Berlin and an independent function certification from LGA Würzburg. Its oil separation device is patented internationally.
- Operation and maintenance
BENE PROTECTON is constructed in a way so that operating and maintenance can be done best possible.



Advanced + low cost safety technology for plants with big amount of oil / high oil density in the waste water

Text for bids

S-II-I-P-High performance separator with safety stages BENE PROTECTON ____ / ____ / ____ (NS / Sludge trap / oil tank) or equivalent.

DIBt-Nr: _____.

S-II-I-P-Plant in accordance with EN 858, with:

- Sludge trap (S),
- Petrol (II) and coalescence separator-(I)-
- Device for leading out the light liquids,
- Oil sampling tank (closed oil tank),
- With sludge sampling room (SSR) = only 50% of the required sludge trap is according to DIN 1999 / EN 858 permitted

Separation plant for high oil density and big amounts of oil in accordance with EN 858-2, § 4.3.2.2.

Additional safety oil tank in II-separator at least: _____ l,

Additional safety oil storage in I-separator at least _____ l,

Total capacity of oil tank until closing of the automatic closing device at least: _____ l.

With certification of the LGA Würzburg to prove the function of the device for leading out the light liquids:

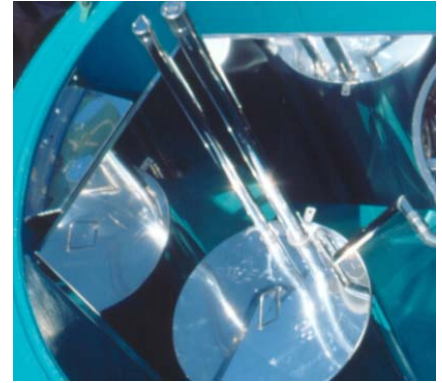
- Protection thanks to safety valve on the oil tank: prevention from entering the water and flowing out of oil.
- Only max. 2 cm height difference between inflow and outflow.
- System not prone to settling of the earth, operates also if tank is a bit diagonally set (e. g. through settling down of the earth or uneven planum up to 10 cm).

With automatic closing device on the outflow side, taken-out without any usage of tools (in accordance with DIN 1999, part 1/EN 858, part 1).

Approved density between transfer monolith/ reduction plate to 0,5 bar.

Max. single weight _____ t,
Inflow depth Z= _____ m, pipe connections EN 295 DN _____ mm, cover class D.

Announced make:
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BENE Services

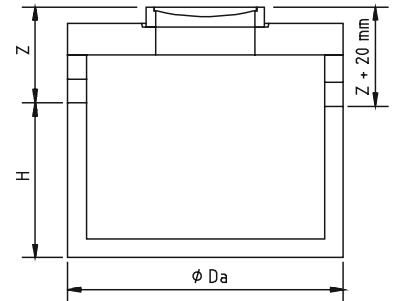
We are always prepared to offer additional services to our customers:

- Installation supervision
- Commissioning
- Instruction
- Exert training
- Maintenance and inspection

A technical advisor from BENE will be glad to visit your location for a non-binding consultation Just give us a call.



Nominal size	Sludge trap volume	Collection volume in oil tank	Additional second safety oil collector	Outside diameter Da	DN inflow and outflow	H	Inflow depth (Standard)*	Maximum single weight	Total weight
NS	[l]	[l]	[l]	[mm]	[mm]	[mm]	[m]	[t]	[t]
3	650	300	543	1200	150	1640	0,70	2,87	3,49
3	2500	200	663	1500	150	2090	0,70	4,31	5,38
3	5000	200	1745	2000	200	2420	0,75	6,87	8,71
4	2500	200	663	1500	150	2090	0,70	4,31	5,38
4	5000	200	1745	2000	200	2420	0,75	6,87	8,71
6	2500	200	663	1500	150	2090	0,70	4,31	5,38
6	5000	500	1745	2000	200	2720	0,75	7,47	9,32
8	2500	200	663	1500	150	2090	0,70	4,31	5,38
8	5000	400	908	2000	150	2470	0,70	6,87	8,71
8	10000	500	1522	2500	200	2820	0,75	11,93	15,73
10	2500	450	663	1500	150	2240	0,70	4,54	5,61
10	5000	600	908	2000	150	2470	0,70	6,87	8,71
10	10000	500	1522	2500	200	2820	0,75	11,93	15,73
15	3000	200	1745	2000	200	1820	0,75	5,66	7,51
15	5000	800	1745	2000	200	2720	0,75	7,47	9,32
15	10000	500	1522	2500	200	2820	0,75	11,93	15,73
20	2500	600	1745	2000	200	1820	0,75	5,66	7,51
20	4000	400	960	2000	200	2020	0,75	6,06	7,91
20	6000	500	960	2000	200	2720	0,75	7,47	9,32
30**	3000	700	1191	2500	250	2270	0,80	6,97	9,81
30**	6000	500	1191	2500	250	2270	0,80	10,46	14,25
30**	6000	1800	1191	2500	250	2520	0,80	10,48	14,5
40**	4000	200	1282	2500	300	2270	0,85	10,36	14,5
40**	6000	800	1282	2500	300	2770	0,85	11,24	15,04



Further nominal sizes on request.
*Pay attention to the local frost-free depth.
**Separation plant with DIBT Z-54.8-368
Stick to the technical data from our current measures sketch.
Technical changes reserved.
Status 07/04.