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AQUAFIX®SKG

High Capacity Steel Separators

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AQUAFIX®SKG

Efficient treatment of wastewater through removal of solids, hydrocarbons and other light liquids.

AQUAFIX®SKG – An innovative and advanced coalescence separator manufactured from steel.

AQUAFIX® separators by HAURATON meet and exceed recognised international standards – PE EN 858. With a unique and practical design for effective operation and ease of maintenance, units achieve high-performance and maximum cleansing efficiency (up to 99.9%).

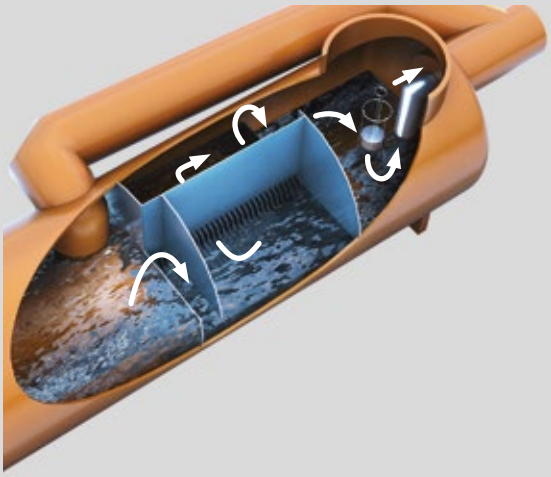
FUNCTION

USE

AQUAFIX®SKG high-capacity steel separators are generally used in areas and applications that generate higher volumes of wastewater. The horizontal design of the unit, incorporating separate settling chamber (sludge trap), coalescence chamber and outflow chamber, allows for efficient water treatment at shallower inverts, avoiding the need to excavate and install underground drainage at deeper levels.

OPERATION

The basic operating principle of **AQUAFIX®** oil and light liquid separators is 'separation'. This relies on the difference in density between water and the solid particles or hydrocarbon/light liquid components being separated from within the water. Sedimentation of solid particles (sand, silt, stones, heavy particles) occurs in the first 'settling chamber' (sludge trap). These particles settle and are retained at the bottom of the first chamber. The second 'coalescence chamber' is designed to encourage the merging of small oil particles into larger ones. Even the smallest droplets of oil/lighter liquids then float to the surface of the water within the third 'outflow chamber', from where they can be removed and disposed of. This design ensures that only clean water enters the drainage/sewerage system.



AQUAFIX® RANGE

WATER MANAGEMENT PRODUCTS FOR THE INFILTRATION, RETENTION AND PRE-TREATMENT OF STORM, SURFACE AND WASTEWATER, ENSURING CLEAN WATER IS RETURNED TO THE ECO-SYSTEM FOR SUSTAINABLE PRESERVATION OF NATURAL RESOURCES.

CONTENTS

AQUAFIX®SKG
System features and benefits

Modular Design; Special Solutions:
- by-pass can be fitted either side of tank
- bespoke system options for high-spec project requirements
- option to include additional coalescence material for even greater efficiency

= design flexibility

Separator Treatment Statistics:
- content of oil petroleum hydrocarbons at outlet **< 5 mg/l**
- water cleaning efficiency up to **99,88%**
- suspended solids content < **50 mg/l**

= highly effective pre-treatment

Large Units; High Capacity, High Flow
- flowrate of 500 l/s (no by-pass)
- flow rate up to 4000 l/s (multiple by-passes)
- effective pre-treatment of large water volumes from extensive catchment areas

= versatile, efficient

Optimum Separator Length and Profile

- long water flow path for greatest efficiency
- longest horizontal sedimentation tanks available, achieving maximum separation/ settlement of solid particles
- effective coalescence chamber design for maximum coalescence of hydrocarbon particles.

= maximum effectiveness

Unique Material Features

- steel thickness: 6-7mm,
- internal and external Endoprene coating
- dual-wall tank option for enhanced security

= durable, high-quality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AQUAFIX®SKG

SEPARATOR LENGTH AND PROFILE; LONG WATER FLOW PATH FOR EFFECTIVE CLEANSING

AQUAFIX®SKG by HAURATON is a separator used for the pre-treatment of rainwater/stormwater.

Manufactured with a cylindrical profile, this ensures easy, practical maintenance (no square corners) and reduced turbulence along the flow path, to assist with more efficient separation.

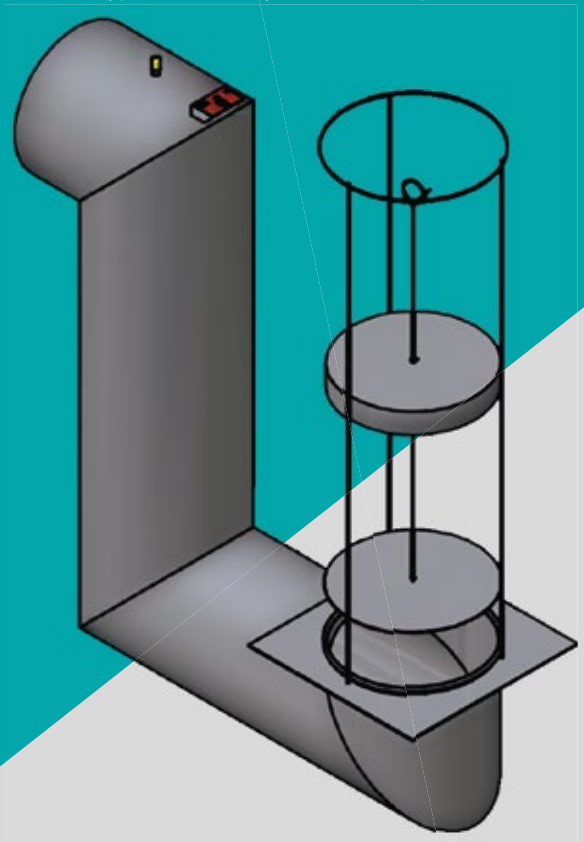
Units consist of three separate compartments, including a Settling Chamber (Sludge Trap), Coalescence Chamber and Outflow Chamber. Each chamber performs a separate important function regarding the separation and pre-treatment process.

AQUAFIX®SKG separators have the longest horizontal settling chamber (sludge trap) available, which achieves the highest level of sedimentation and settlement as water flows through this compartment. Sedimentation is the first stage of water treatment within the separator.

Design and construction of the settling chamber (sludge trap) should meet guidelines set out in the European Standard PN-EN 858 to provide a long water flow path in order to create the best conditions and environment for maximum sedimentation of solid particles.

EN 858 also stipulates the settling chamber (sludge trap) should have an inner volume which is at least 100 times the nominal flow capacity of the unit. **AQUAFIX®**SKG fully complies with this requirement.

AQUAFIX®SKG separators are equipped with a drainage trap and automatic closing device which activates and prevents hydrocarbons and other light liquids from leaving the separators when the level of hydrocarbons/light-liquids at the surface of the outflow chamber exceeds a specified level. These pollutants can be syphoned away from the separator for recycling and/or further treatment



AQUAFIX®SKG separators are divided into three separate sections:

1. settling chamber (sludge trap),
2. coalescence chamber with coalescence material in multi-stream configuration,
3. outflow chamber with automatic closing device.

HIGH SYSTEM CAPACITY; LARGE CATCHMENT AREAS, HIGH FLOW RATES (500 L/S AND MORE)

LARGE CATCHMENT AREAS

HIGH VOLUME

HIGH FLOWS

AQUAFIX®SKG separators achieve flow rates of 500 litres/second (no by-pass) up to 4000 l/s (multiple by-passes). Increasing system capacity even further for higher performance is also possible.

Factory in Biskupice - Separators installed with **1000 l/s** nominal flow through each

Corrosion protection coating.

UNIQUE MATERIAL FEATURES; DURABLE & HIGH-QUALITY

AQUAFIX®SKG separators are manufactured from **St3S** steel with a minimum gauge of **6-7 mm.**

Internal and external surfaces are applied with a specialist Endoprene coating which provides enhanced resistance to corrosion.

The anti-corrosion coating included on internal surfaces has a high resistance to petroleum hydrocarbons.

HAURATON can also provide dual-wall separators.

MODULAR DESIGN OPTIONS; BY-PASS & SPECIAL SOLUTIONS

ZALANDO Logistic Center, Głuchów

MODULAR SYSTEM

PRACTICAL DESIGN

BESPOKE SOLUTIONS

AQUAFIX®SKG separators can be designed in special system configurations to meet project requirements - e.g. specific flow parameters and/or to suit available space.

If higher flow rates are apparent, separators can be designed to meet these requirements. If there is limited space on site, a system by-pass (or multiple by-passes) can be fitted onto the side of the separator (left or right side), to meet site requirements.

When fitted with a system by-pass (or multiple by-passes), separators can discharge wastewater up to ten times greater than the usual nominal flow rate of the separator, depending on the type of separator and system installed. This is to accommodate situations when the separator may be overloaded.

The by-pass system is attached to the settling chamber (sludge trap) of the separator. This is a unique aspect regarding **AQUAFIX®**SKG separators. As the by-pass system is located outside of the separator tank, this minimises the number of individual chambers required within the separator, and also provides a more practical, accessible system design for ease of maintenance.

PRE-TREATMENT PERFORMANCE; HIGH CLEANING EFFICIENCY

AQUAFIX®SKG separators achieve high levels of cleansing efficiency. Water is highly purified, meeting requirements as specified in PN EN 858.

Customers have the option for additional coalescence material to be included, which increases the efficiency of pre-treatment even further.

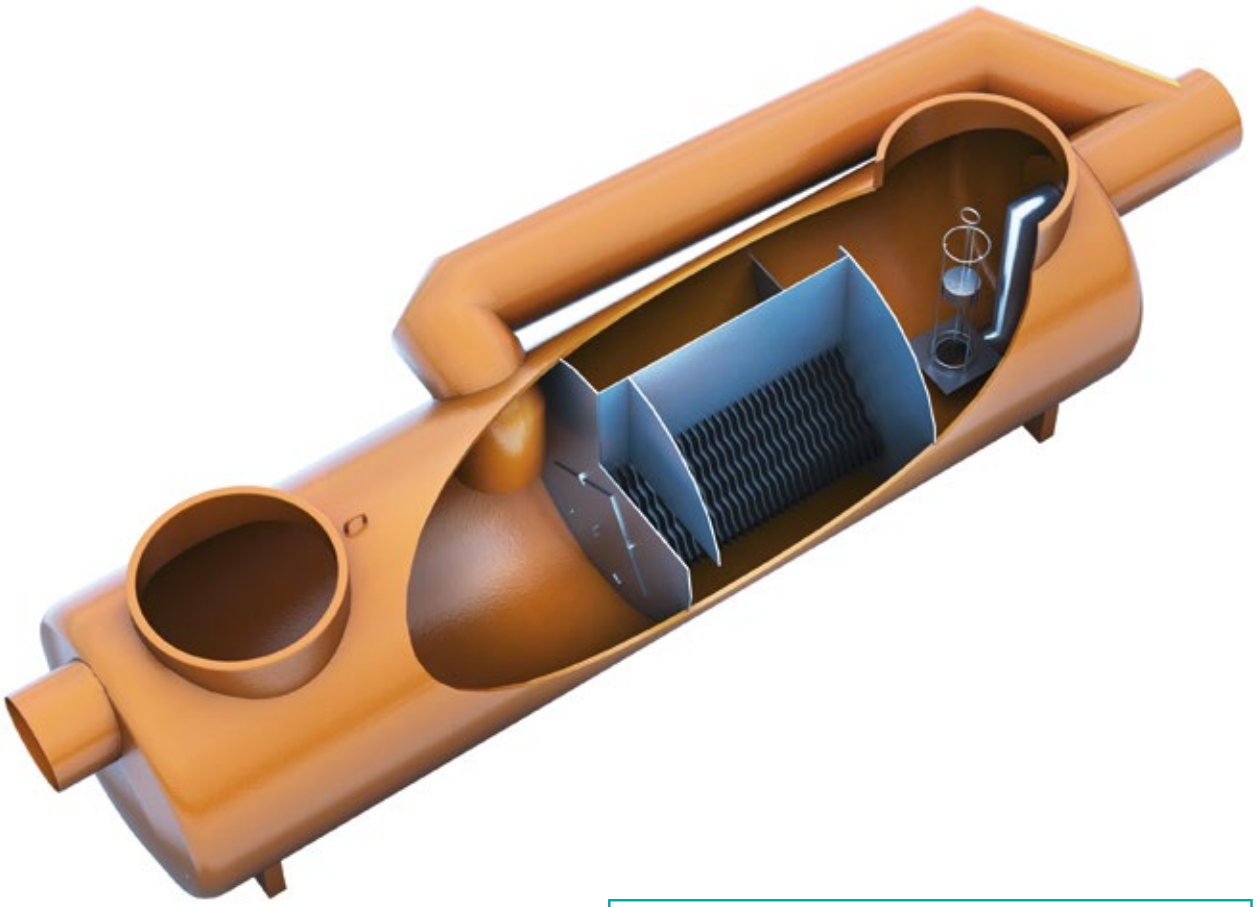
Separator Treatment Statistics:

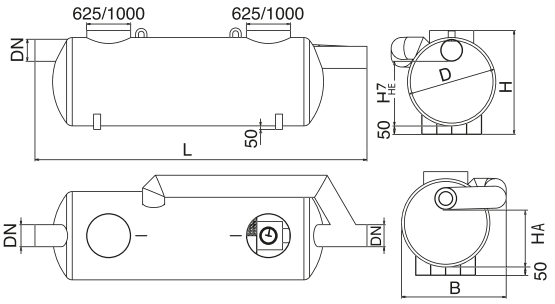
- ☑ content of oil petroleum hydrocarbons at outlet **< 5 mg/l**
- ☑ water cleaning efficiency up to **99,88%**
- ☑ suspended solids content **< 50 mg/l**

OTHER:

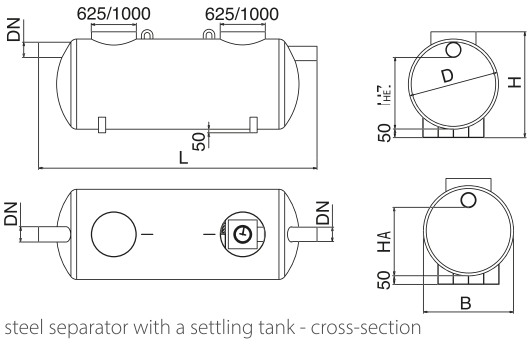
- ☑ compact design
- ☑ patented automatic closing device/float system; easy to remove for maintenance
- ☑ easy to clean 'multi-stream' coalescence material
- ☑ sampling system option
- ☑ warning system option

AQUAFIX® high capacity steel separators

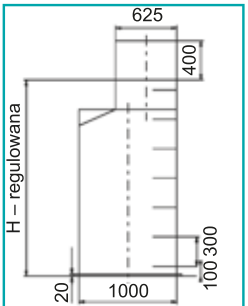




steel separator with a settling tank and by pass - cross section



steel separator with a settling tank - cross-section



height adjustable extension - cross section

AQUAFIX® high capacity steel separators

AQUAFIX®SKG, steel coalescence separators with settling tank, nominal capacity from 15 to 500 l/s

	Capacity		Volume		Tank diameter D mm	Tank total length L mm	Tank total width zb. B mm	Tank total height zb. H mm	Inflow and outflow diameter DN mm	Height to the bottom of inlet pipe. HE mm	Height to the bottom of outlet pipe. HA mm	Total weight G kg	Catalogue No.
	NG nom. l/s	NG max. l/s	settling tank VO l	separator VS l									
SKG 015	15	15	1580	1400	1250	3860	1250	1400	200	1000	950	1400,0	181015
SKG 020	20	20	1890	2200	1250	4960	1250	1400	200	1000	950	1600,0	181020
SKG 025	25	25	2900	3380	1600	4550	1600	1750	200	1350	1300	1800,0	181025
SKG 030	30	30	3620	3820	1600	5200	1600	1750	200	1350	1300	1950,0	181030
SKG 035	35	35	3800	4340	1600	5600	1600	1750	200	1350	1300	2000,0	181035
SKG 040	40	40	4710	4200	1600	6020	1600	1750	200	1350	1300	2250,0	181040
SKG 045	45	45	4850	6090	2000	5150	2000	2150	300	1650	1600	2850,0	181045
SKG 050	50	50	6100	5930	2000	5450	2000	2150	300	1650	1600	2950,0	181050
SKG 060	60	60	6930	6470	2000	6040	2000	2150	300	1650	1600	3100,0	181060
SKG 065	65	65	7380	6870	2000	6350	2000	2150	300	1650	1600	3300,0	181065
SKG 070	70	70	8040	7280	2000	6750	2000	2150	300	1650	1600	3400,0	181070
SKG 075	75	75	8320	8250	2000	7200	2000	2150	300	1650	1600	3600,0	181075
SKG 080	80	80	9150	8680	2000	7660	2000	2150	300	1650	1600	3800,0	181080
SKG 090	90	90	10260	9160	2000	8240	2000	2150	300	1650	1600	4000,0	181090
SKG 100	100	100	11370	10400	2000	9100	2000	2150	300	1650	1600	4300,0	181100
SKG 120	120	120	13520	16000	2500	8100	2500	2650	400	2050	2000	5200,0	181120
SKG 130	130	130	13520	16000	2500	8100	2500	2650	400	2050	2000	5250,0	181130
SKG 140	140	140	14220	16840	2500	8440	2500	2650	400	2050	2000	5550,0	181140
SKG 150	150	150	14220	16840	2500	8440	2500	2650	400	2050	2000	5560,0	181150
SKG 160	160	160	18100	18530	2500	9740	2500	2650	400	2050	2000	6050,0	181160
SKG 170	170	170	18100	18530	2500	9740	2500	2650	400	2050	2000	6100,0	181170
SKG 180	180	180	19820	20210	2500	10540	2500	2650	400	2050	2000	6500,0	181180
SKG 200	200	200	21540	21730	2500	11300	2500	2650	400	2050	2000	6700,0	181200
SKG 250	250	250	28270	26950	2500	14100	2500	2650	400	2050	2000	7650,0	181250
SKG 300	300	300	30250	27430	2900	11780	2900	3050	600	2300	2250	8000,0	182300
SKG 350	350	350	34240	32290	2900	13680	2900	3050	600	2300	2250	11100,0	182350
SKG 400	400	400	40150	36030	2900	15140	2900	3050	600	2300	2250	12250,0	182400
SKG 500	500	500	50600	47330	2900	19180	2900	3050	600	2300	2250	14000,0	182500

High-capacity steel separators are not equipped with manholes.
HAURATON reserves the right to make changes due to technical progress.
Separator tanks with a diameter of 1250 mm have access points of 625 mm. Larger units have access points of 1000 mm.
Higher capacities available upon request.

AQUAFIX® high capacity steel separators

AQUAFIX®SKGBP, steel coalescence separators with settling tank 'by-pass' flow capacity five-times greater than nominal flow capacity (15 to 400 l/s)

	Capacity		Volume		Tank diameter D mm	Tank total length L mm	Tank total width zb. B mm	Tank total height zb. H mm	Inflow and outflow diameter DN mm	Height to the bottom of inlet pipe. HE mm	Height to the bottom of outlet pipe. HA mm	Total weight G kg	Catalogue No.
	NG nom. l/s	NG max. l/s	settling tank VO l	separator VS l									
SKGBP 015	15	75	1500	1770	1250	4700	1500	1400	300	920	820	1700,0	182015
SKGBP 020	20	100	2300	2080	1250	5825	1500	1400	300	920	820	1900,0	182020
SKGBP 025	25	125	2990	2940	1600	5235	1900	1750	400	1150	1000	2350,0	182025
SKGBP 030	30	150	3960	4020	1600	6300	1900	1750	400	1150	1000	2700,0	182030
SKGBP 035	35	175	3960	4020	1600	6300	1900	1750	400	1150	1000	2750,0	182035
SKGBP 040	40	200	4850	4330	1600	7200	1900	1750	400	1150	1000	3050,0	182040
SKGBP 045	45	225	5120	5750	2000	5400	2200	2150	400	1550	1450	3100,0	182045
SKGBP 050	50	250	5690	5490	2000	6000	2200	2150	500	1450	1300	3300,0	182050
SKGBP 055	55	275	5920	6220	2000	6300	2200	2150	500	1450	1300	3500,0	182055
SKGBP 060	60	300	5920	6220	2000	6300	2200	2150	500	1450	1300	3600,0	182060
SKGBP 065	65	325	7460	6950	2000	7200	2200	2150	500	1450	1300	4050,0	182065
SKGBP 070	70	350	8390	7810	2000	8000	2200	2150	500	1450	1300	4250,0	182070
SKGBP 075	75	375	8390	7810	2000	8000	2200	2150	500	1450	1300	4300,0	182075
SKGBP 080	80	400	8600	9030	2000	8500	2200	2150	500	1450	1300	4500,0	182080
SKGBP 090	90	450	10010	12510	2500	7300	2800	2650	600	1850	1650	5450,0	182090
SKGBP 100	100	500	10010	12510	2500	7300	2800	2650	600	1850	1650	5600,0	182100
SKGBP 120	120	600	14010	14610	2500	8800	2800	2650	600	1850	1700	6150,0	182120
SKGBP 130	130	650	14580	13400	2500	9600	2800	2650	800	1650	1400	6300,0	182130
SKGBP 140	140	700	15640	14900	2500	10300	2900	2650	800	1650	1400	6700,0	182140
SKGBP 150	150	750	16710	15120	2500	11000	2900	2650	800	1650	1400	6900,0	182150
SKGBP 160	160	800	17780	16150	2500	11500	2900	2650	800	1650	1400	7450,0	182160
SKGBP 170	170	850	19020	17010	2500	12000	2900	2650	800	1650	1400	7650,0	182170
SKGBP 180	180	900	20090	18040	2500	12700	2900	2650	800	1650	1400	7950,0	182180
SKGBP 200	200	1000	22220	20110	2500	13900	2900	2650	800	1650	1400	8650,0	182200
SKGBP 250	250	1250	28440	25430	2500	17200	2900	2650	800	1900	1500	10400,0	182250
SKGBP 300	300	1500	28840	33350	2900	16500	3600	3050	1000	1850	1600	12000,0	182300
SKGBP 350	350	1750	34240	32290	3000	17700	3700	3050	1000	1850	1650	13000,0	182350
SKGBP 400	400	2000	40020	36590	3000	20000	3700	3050	1000	1900	1650	14000,0	182400

High-capacity steel separators are not equipped with manholes.
HAURATON reserves the right to make changes due to technical progress.
Separator tanks with a diameter of 1250 mm have access points of 625 mm. Larger units have access points of 1000 mm.
Higher capacities available upon request.

AQUAFIX® high capacity steel separatorst

AQUAFIX®SKG2BP, steel coalescence separators with settling tank 'by-pass' flow capacity ten-times greater than nominal flow capacity (15 to 400 l/s)

	Capacity		Volume		Tank diameter D mm	Tank total length L mm	Tank total width zb. B mm	Tank total height zb. H mm	Inflow and outflow diameter DN mm	Height to the bottom of inlet pipe. HE mm	Height to the bottom of outlet pipe. HA mm	Total weight G kg	Catalogue No.
	NG nom. l/s	NG max. l/s	settling tank VO l	separator VS l									
SKG2BP 015	15	150	1510	1740	1250	5000	1700	1400	400	820	670	2300,0	184015
SKG2BP 020	20	200	2310	2070	1250	6300	1700	1400	400	820	670	2700,0	184020
SKG2BP 025	25	250	2990	2940	1600	5100	2000	1750	400	1150	1000	2800,0	184025
SKG2BP 030	30	300	4050	4060	1600	7100	2100	1750	500	1050	850	3250,0	184030
SKG2BP 035	35	350	4050	4060	1600	7100	2100	1750	500	1050	850	3300,0	184035
SKG2BP 040	40	400	4860	4760	1600	8200	2100	1750	500	1050	850	3750,0	184040
SKG2BP 045	45	450	5310	5370	2000	6000	2500	2150	500	1450	1300	3800,0	184045
SKG2BP 050	50	500	5690	5490	2000	6200	2500	2150	500	1450	1300	3900,0	184050
SKG2BP 055	55	550	6110	6320	2000	7400	2500	2150	600	1350	1150	4500,0	184055
SKG2BP 060	60	600	6110	6320	2000	7400	2500	2150	600	1350	1150	4600,0	184060
SKG2BP 065	65	650	7520	6990	2000	8200	2500	2150	600	1350	1150	4650,0	184065
SKG2BP 070	70	700	8460	7900	2000	9100	2500	2150	600	1350	1150	5050,0	184070
SKG2BP 075	75	750	8460	7900	2000	9100	2600	2150	600	1350	1150	5100,0	184075
SKG2BP 080	80	800	8850	9330	2000	11900	2800	2150	800	1150	850	6400,0	184080
SKG2BP 090	90	900	9950	12720	2500	9000	3300	2650	800	1650	1400	6700,0	184090
SKG2BP 100	100	1000	9950	12720	2500	9000	3300	2650	800	1650	1400	6800,0	184100
SKG2BP 120	120	1200	13860	15120	2500	10700	3300	2650	800	1650	1400	7500,0	184120
SKG2BP 130	130	1300	14580	16840	2500	11500	3300	2650	800	1650	1400	7900,0	184130
SKG2BP 140	140	1400	15970	14440	2500	13000	3500	2650	1000	1450	1100	8000,0	184140
SKG2BP 150	150	1500	16890	15320	2500	13500	3500	2650	1000	1450	1100	8200,0	184150
SKG2BP 160	160	1600	18120	16500	2500	14500	3500	2650	1000	1450	1100	8900,0	184160
SKG2BP 170	170	1700	19350	17090	2500	15000	3500	2650	1000	1450	1100	9500,0	184170
SKG2BP 180	180	1800	20270	18270	2500	15800	3500	2650	1000	1450	1100	10350,0	184180
SKG2BP 200	200	2000	20640	19120	2900	11800	3900	3050	1000	1850	1500	10800,0	184200
SKG2BP 250	250	2500	25220	22820	2900	13700	3900	3050	1000	1900	1500	11200,0	184250
SKG2BP 300	300	3000	30230	27980	2900	16100	3900	3050	1000	1900	1650	13500,0	184300
SKG2BP 350	350	3500	35130	31860	2900	18100	3900	3050	1000	1900	1650	10770,0	184350
SKG2BP 400	400	4000	40020	36590	2900	20300	3900	3050	1000	1900	1650	12038,0	184400

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Separator tanks with a diameter of 1250 mm have access points of 625 mm. Larger units have access points of 1000 mm.
Higher capacities available upon request.

TOTAL DRAINAGE SYSTEM SOLUTION

Surface Drainage + Separator Treatment + Infiltration Systems

HAURATON provides a total drainage system solution through its range of surface drainage, separators and infiltration systems.

A complete drainage system that restores harmony to the natural hydrological (water) cycle is one that includes surface drainage, rainwater pre-treatment and ground infiltration, or an underground drainage network for onward transmission for discharge off-site or further treatment.

HAURATON FASERFIX®/RECYFIX® surface drainage systems lead surface water/stormwater to an **AQUAFIX®** separator system for pre-treatment, after which purified water is piped to a **DRAINFIX®** ground infiltration system.

Drainage systems that allow localised ground infiltration of pre-treated water close to the source of surface water help to overcome the problems of man-made hard surfaces interrupting the natural cycle and circulation of water

AQUAFIX®SKG

Project Examples

BENEFITS:

- ☑ High flow parameters
- ☑ Small space requirement for installation
- ☑ Modular design

ZALANDO LOGISTIC CENTRE IN GŁUCHÓW

Three requirements determined the selection of HAURATON's **AQUAFIX**®SKG2BP 350 separator as the best solution for this project.

The project required a separator with maximum water flow rate of 3500 l/s, both hydraulically and also as a consequence of the space available on site to accommodate and install a pre-treatment system.

Such high flows can be achieved by **AQUAFIX**®SKG separators. A major advantage is the dual (double) 'by-pass' design option, which significantly increases the flow capabilities of the system.

The project had limited space available but a requirement to pre-treat large volumes of water. **AQUAFIX**®SKG separators have a cylindrical profile with a compact design, which allows an efficient 'high-capacity' system to be installed in a small space and at relatively low invert depths.

The modular design of the steel separator tank also influenced the selection of this unit for the Zalando Logistics Centre. The lower weight/large volume ratio of the separator allowed for quick and uncomplicated assembly and installation on site.

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SPECIAL SOLUTION:

- ☑ Total of 1000 l/s nominal flow
- ☑ Special logistic requirements regarding **AQUAFIX®**SKG 500

FACTORY IN BISKUPIEC

Covering an area of 88 hectares, this project at Biskupiec in Poland was the largest production factory in the region. Production was planned to start during 2018/2019. Important criteria for the design and operation of this factory were safe and modern technologies, care for environmental protection, and maximum health and safety for employees.

The challenge faced by the project design team was to provide efficient drainage of the total site in a controlled, regulated and reliable manner. A great deal of time and effort was devoted to determining the most effective solution. The optimum solution found was to install two of the largest **AQUAFIX**®SKG 500 separators side-by-side. This was also a first for HAURATON Poland.

Each **AQUAFIX®**SKG 500 separator has a nominal maximum flow of 500 litres/second, so a total flow of 1000 l/s was achieved on the project. Each unit has a settling tank (sludge trap) capacity of 50,600 litres, providing a combined total capacity of over 100,000 litres. Each unit has a separator capacity of 47,330 litres, so the combined separator capacity for this project was 94,660.

AQUAFIX®SKG 500 has a pre-treatment efficiency for hydrocarbons of 99.88%.

The two largest separators that HAURATON Poland have produced also provided a transport and logistics challenge. The delivery to site was made during night-time hours along a carefully planned route, in order to ensure safe passage and minimise disruption to traffic.

Our Sample Projects

Poznan City Stadium

Egger Factory, Biskupiec

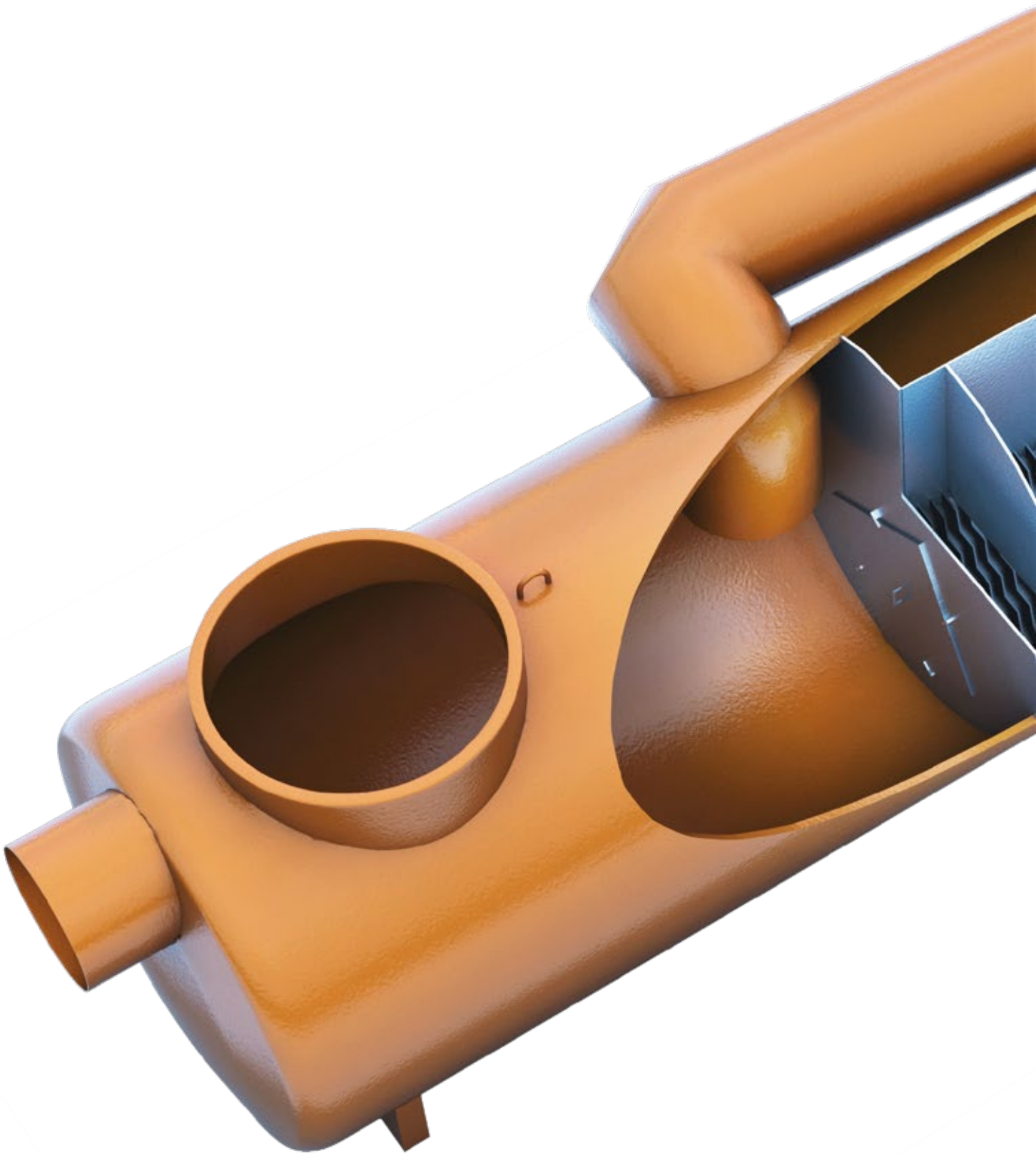
Strachowice Airport, Wrocław

Olsztyn Airport

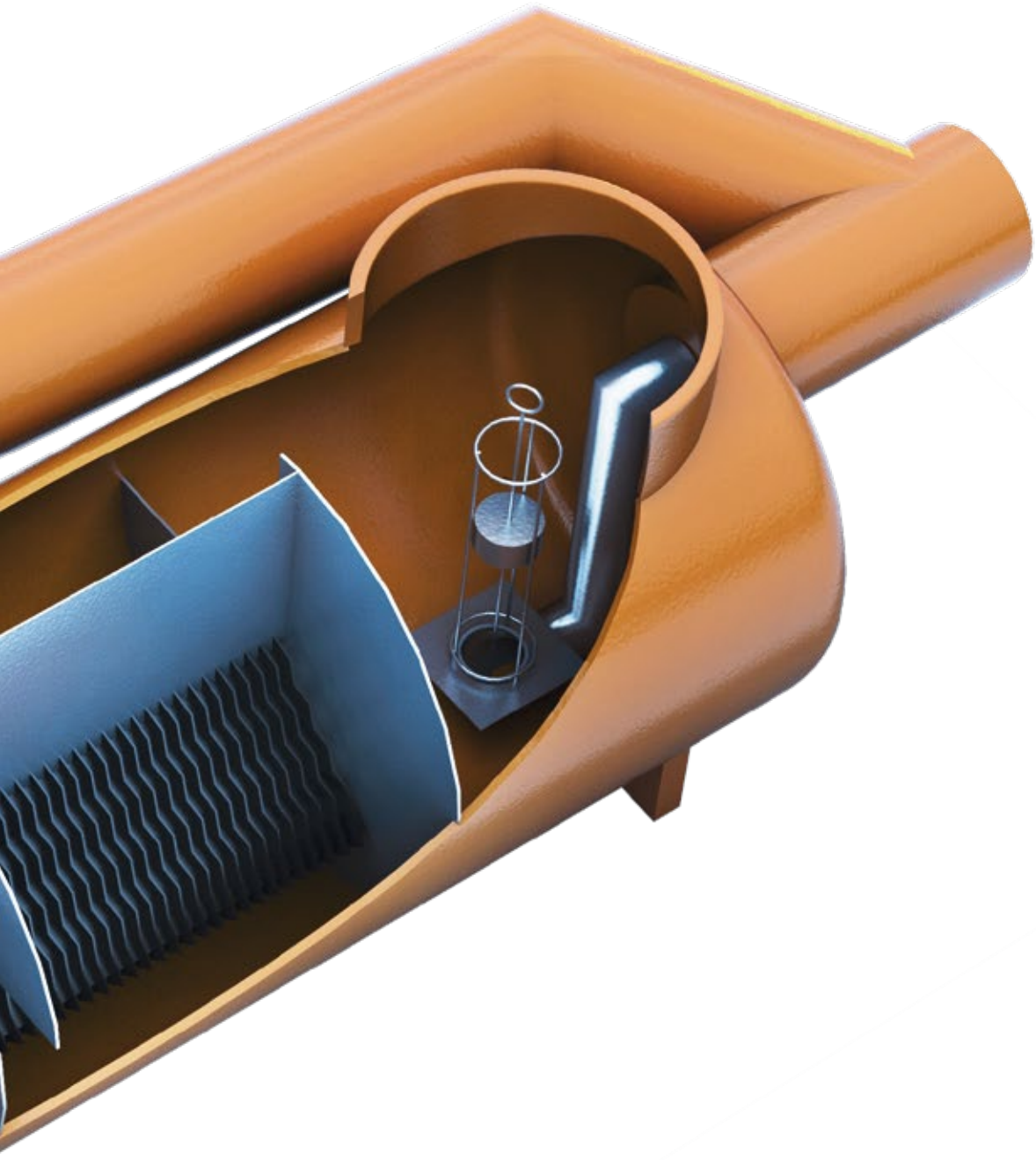
650-lecia Housing Estate, Bartoszyce

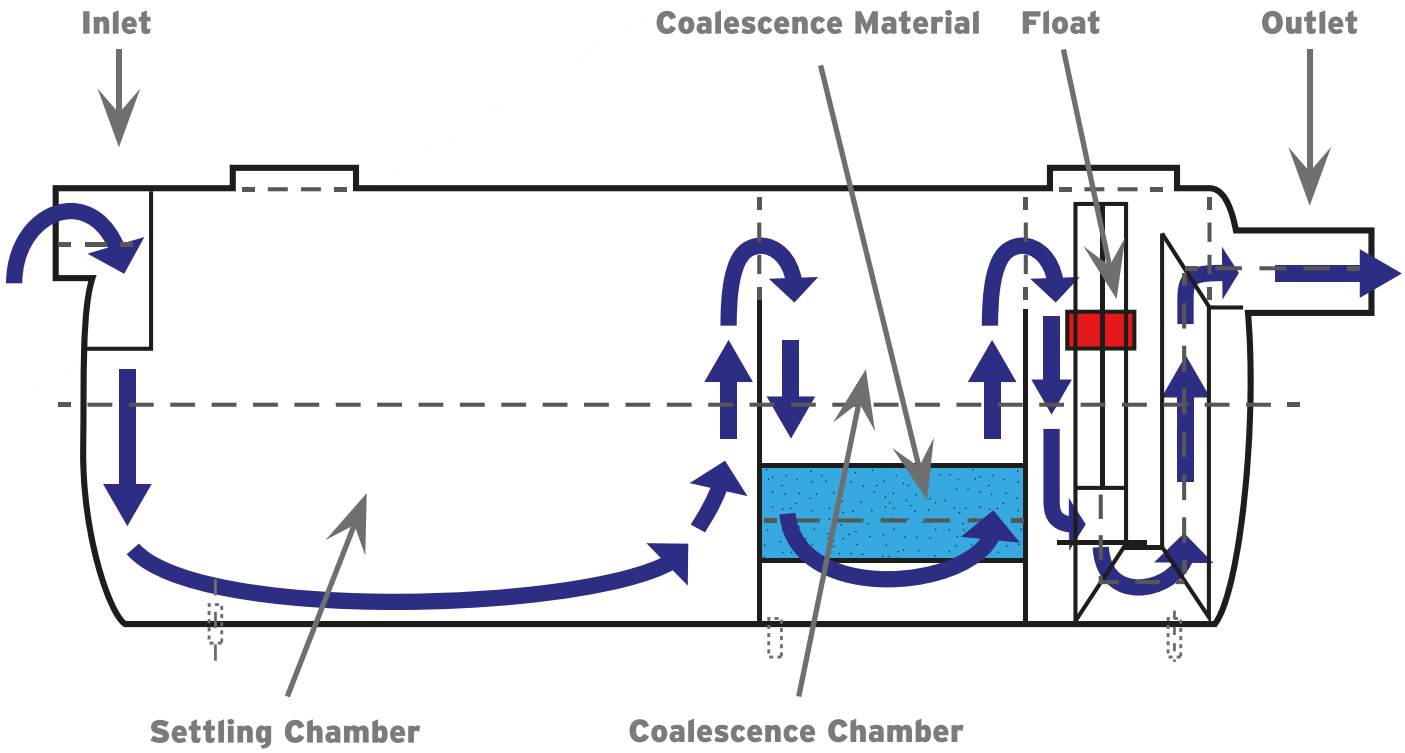
AQUAFIX®SKG

Water Flow Diagram



22




Inlet
Coalescence Material
Float
Outlet
Settling Chamber
Coalescence Chamber

Chopin Airport, Warsaw

Krasnik

Wilanów Housing Estate

ZALANDO Logistic Center, Głuchów

Tomaszów Mazowiecki

Sosnica-Maciejów Motorway Junction

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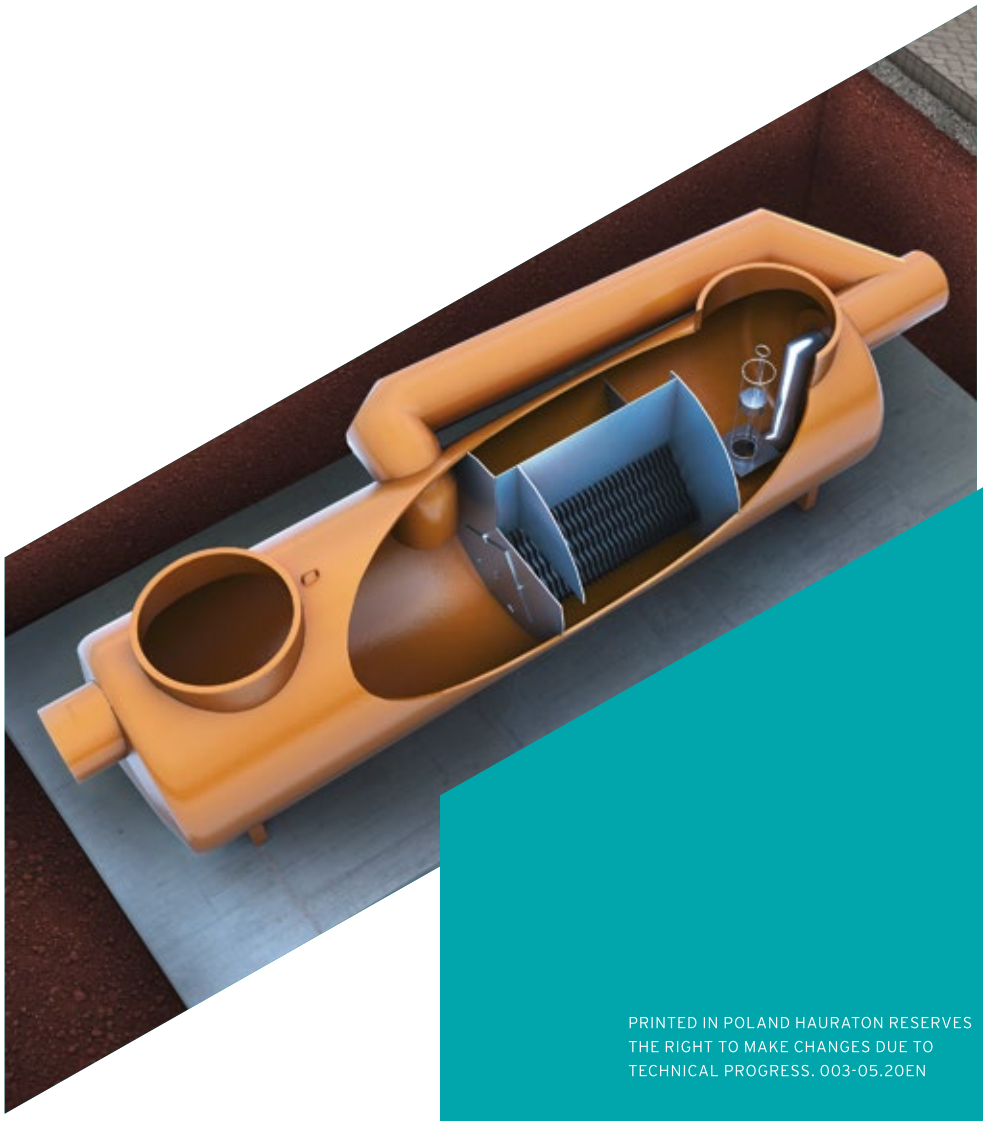

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