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Modern solutions for water management

Get to know us better www.biocent.com.pl

Agenda

1. Short introduction about the company
2. Product portfolio

- Grease separators BIOLIP
- Hydrocarbon separators PETRO
- Sewage pumping stations BIOLIFT
- Retention tanks RETANK
- Flow regulators BIOFLOW
- Channel and wall valves BIOLOCK
- Return flaps REFLOW
- Inspection hatches BIOTOP

Biocent

A short introduction about the company

Biocent SA based in Lublin is a manufacturer technologically advanced products used in engineering construction.

Biocent SA is currently one of the leading manufactureres in Poland of devices for purifying and pumping technological wastewater and rainwater.

What makes Biocent stand out?

- Many years of experience
- Own automation department
- Production and service
- 100% Polish capital

14 years

of experience

More than 1000

completed projects

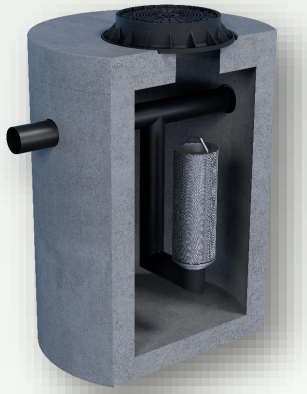
More than 100

deliveries abroad

50 specialists

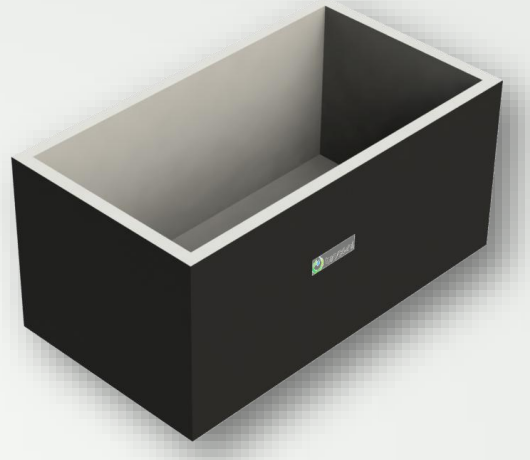
on board

Grease separators



Hydrocarbon separators

Sewage pumping stations



Retention tanks

Flow regulators

Return flaps

Inspection hatches

Wall and channel penstocks

Grease separators BIOLIP

Role, structure, types of separators and examples of implementation

Application

Grease separators are used to pre-treat wastewater contaminated with fats and organic oils.

Principle of operation

The principle of operation is based on the phenomenon of gravitational flotation and sedimentation of pollutants in sewage.

Production materials

- GRP,
- Stainless steel,
- Reinforced concrete,
- Other materials according to customer's request

Purpose

- Restaurants,
- Collective catering kitchens,
- Agro-food industry facilities.

Fats are substances that highly contaminate sewage systems. It is therefore necessary to intercept them before they enter the sewage system.

Due to their lower specific gravity than water, fat particles accumulate on its surface in the form of a scum and remain there until they are pumped out.

Benefits

- no sewer clogging
- no disruptions at the sewage treatment plant
- no corrosion of sewage (effects of sulfuric acid)

Construction of grease separators

Tank materials:

- Reinforced concrete
- GRP
- Stainless steel
- Other materials

Optional equipment:

- Installation for emptying
- Integrated sedimentation tank
- Ventilation 75 mm
- Fat layer thickness, sediment, overflow alarm

Basic equipment

- Plastic or stainless steel deflectors
- Cast iron, plastic or steel manhole cover
- Compliant with standards: PN EN 1825-1; PN-EN 1825-1:2007

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Implementation examples

Lublin Region Oncology Center, Lublin, Poland

Hotel Wieniawski, Sądowa str., Lublin, Poland

Hydrocarbon separators PETRO

Role, structure, types of separators and examples of implementation

Application

The role of oil separators is to separate light liquids (oils) from wastewater and store them.

Principle of operation

It is based on the gravitational phenomenon of sedimentation and flotation, additionally supported by the phenomenon of coalescence - combining small oil particles into larger particles.

Production materials

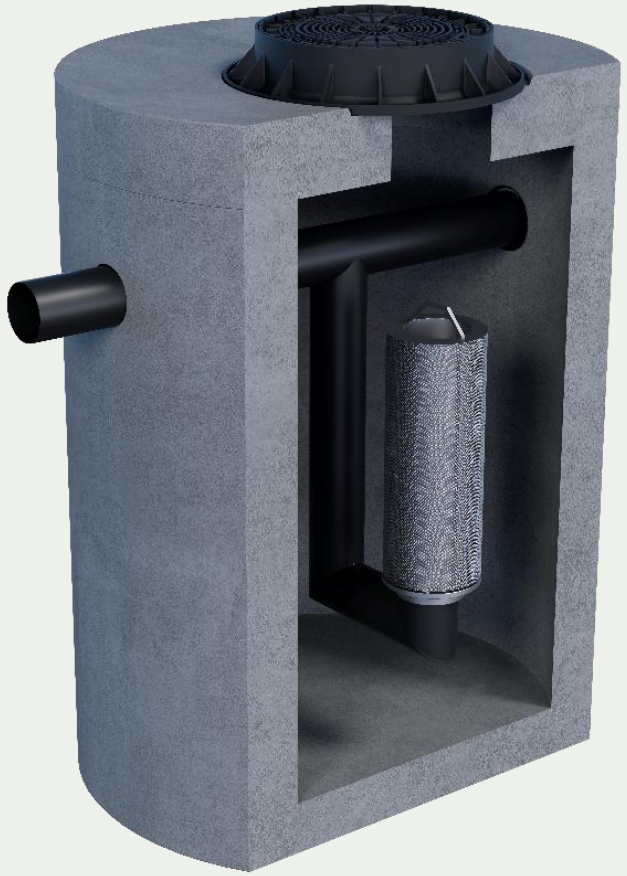
- Reinforced concrete,
- GRP,
- PEHD

Purpose

- Roads, parking lots*, maneuvering areas,
- Warehouse storage facilities,
- Fuel distribution points
- Car washes, car workshops.

(*) Tip: from 1000 m2 (4 tennis courts)

Construction of the hydrocarbon separators



Tank materials :

- Reinforced concrete
- GRP
- PEHD

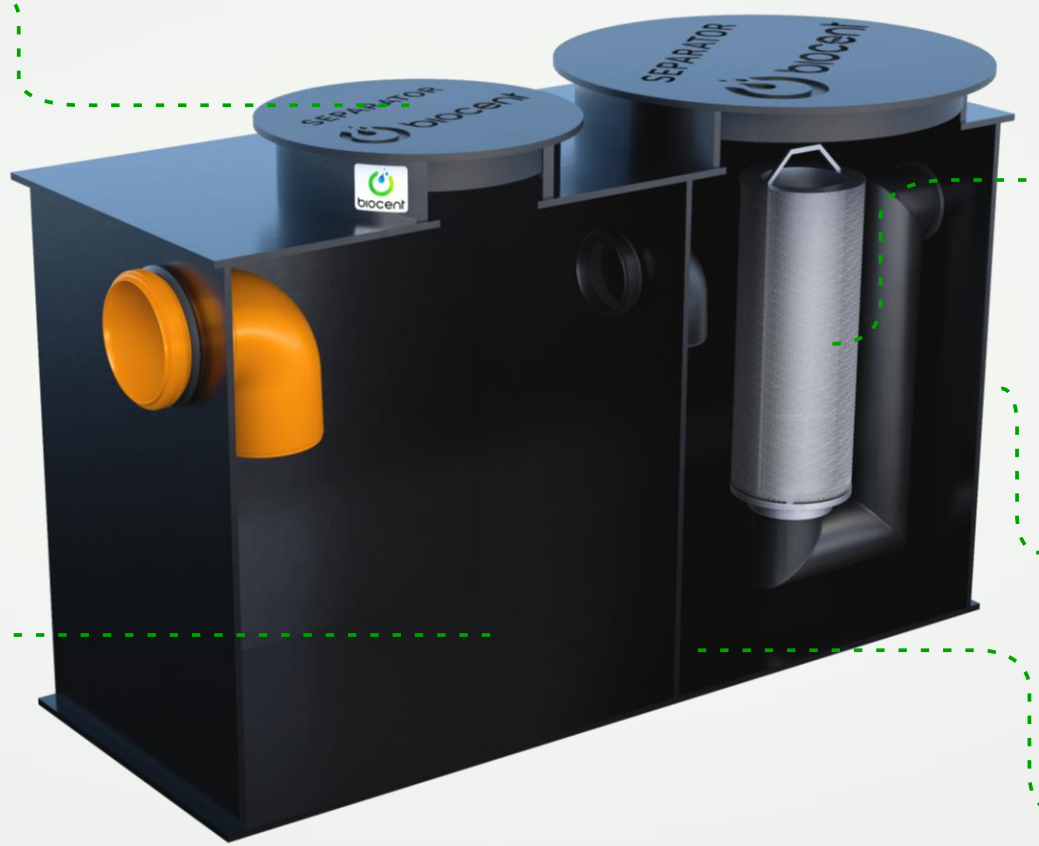
Optional equipment:

- 10-Times By-Pass
- Integrated sedimentation tank
- Ventilation 75mm
- Integrated settling tank with pump chamber

Basic equipment

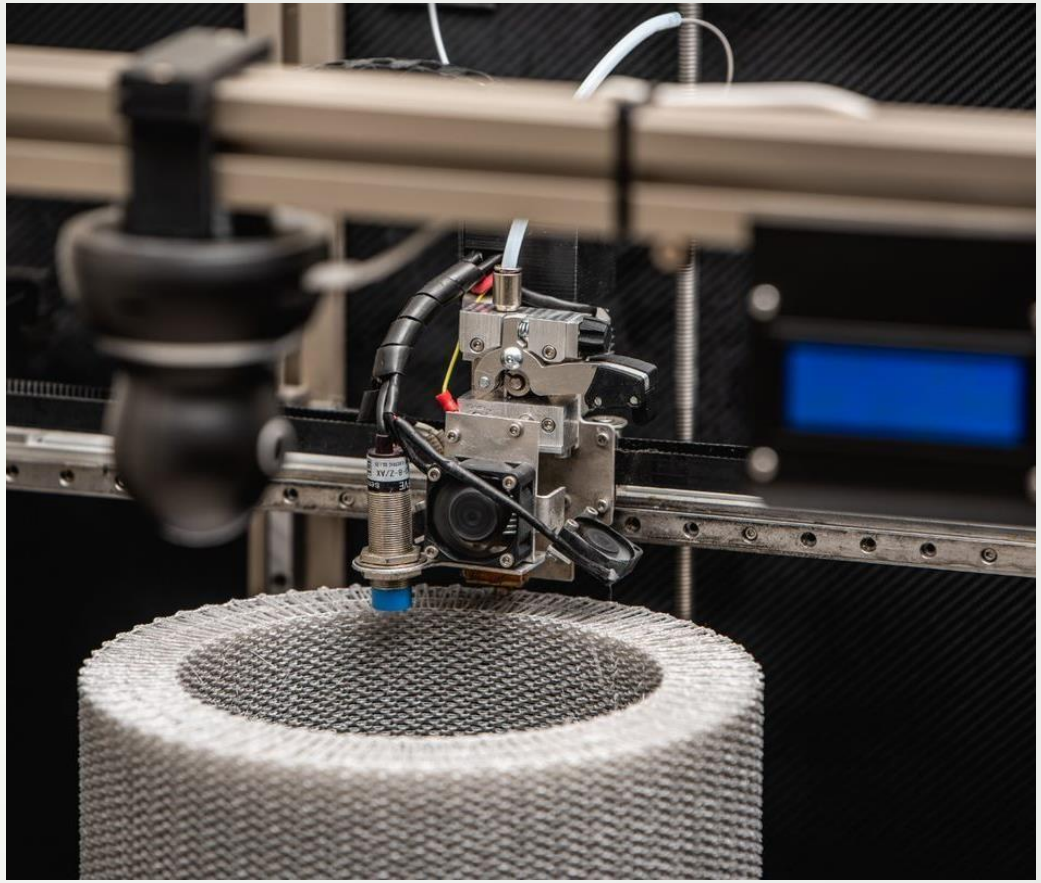
- 3D printed PET coalescing or lamellar filter
- Cast iron or plastic manhole
- Compliant with standards: PN-EN 858-1:2005; PN-EN 858-1:2005/A1:2007

Compliant with the standard PN-EN 858 the device should consist of:



Innovative 3D lamella filter

- Unique filter shape thanks to the use of 3D printing technology.
- Cylindrical lamellas allow for even better cleaning effects.
- They are made from PET material from recycled bottles.
- The filter fits in a standard DN600 manhole.



The only one of its kind in Europe !

Innovative 3D lamella filter

Auto closing

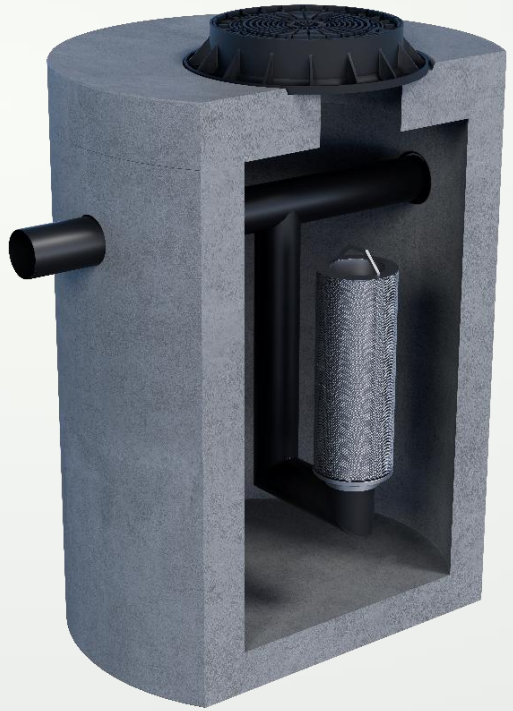
- It is a siphoned drain with a float tared for density 0,850 kg/l.
- Prevents the overflow of petroleum substances in the event of their excessive accumulation in the separator.

* Note: it is required by the standard in each separator.

Bypass separators

These are separators with a storm overflow that allows for the discharge of excess rainwater during heavy rains.

Prevents the overloading of the settling tank and separator with excess rainwater, which ensures proper operation at the designed nominal flows.



Separators with an integrated pump compartment

They enable pumping of purified rainwater from places where gravity drainage is not possible (e.g. underground garages).

Separators with an integrated pump compartment

PETRO-OP-KP 15/1500

PETRO-OP-KP-N 3/300 (low inlet)

PETRO-OP-KP 10/1000

Implementation examples

ENEA Power plant, Kozienice, PL

PETRO-OS 375/37500 – The largest stainless-steel separator in Poland !

Nominal flow 375 dm^3/s

Settlement tank capacity 37500 dm^3

Lublin Al. Solidarności, LIDL

PETRO-OSB 120/1200/12000

Nominal flow 120 dm^3/s

Maximum flow 1200 dm^3/s

Settlement tank capacity 12 000 dm^3

Poznań, Ziębicka Str.

PETRO-OSB-KP 3/35/300

Nominal flow 3 dm^3/s

Maximum flow 35 dm^3/s

Settlement tank capacity 300 dm^3

Poznań, Serbska/Karpia Str.

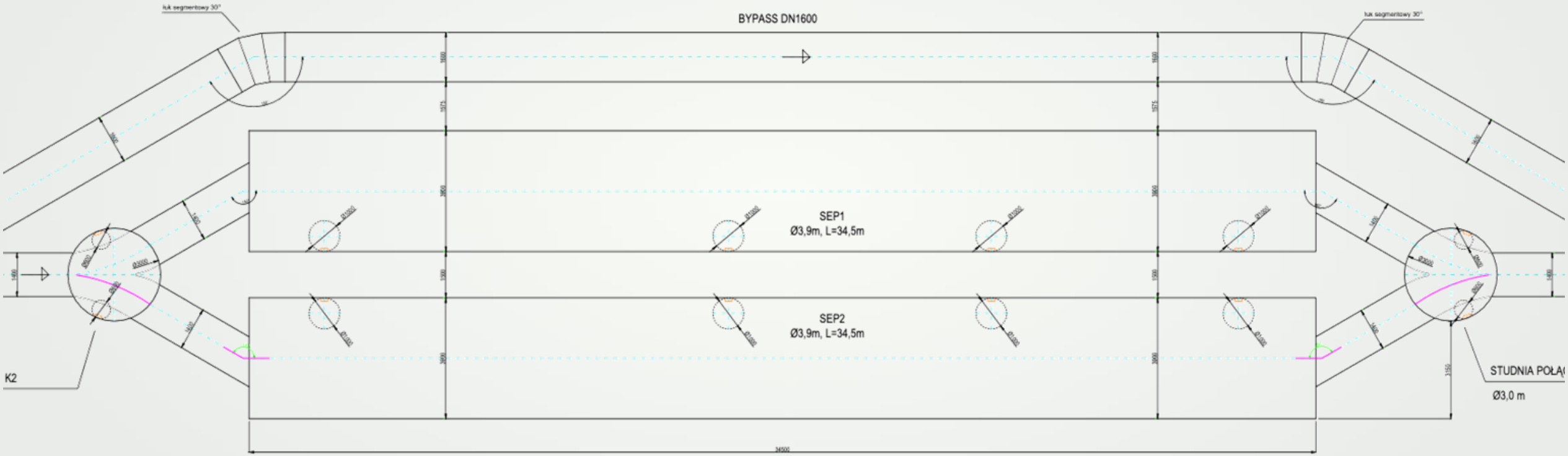
PETRO-OC 800/80000

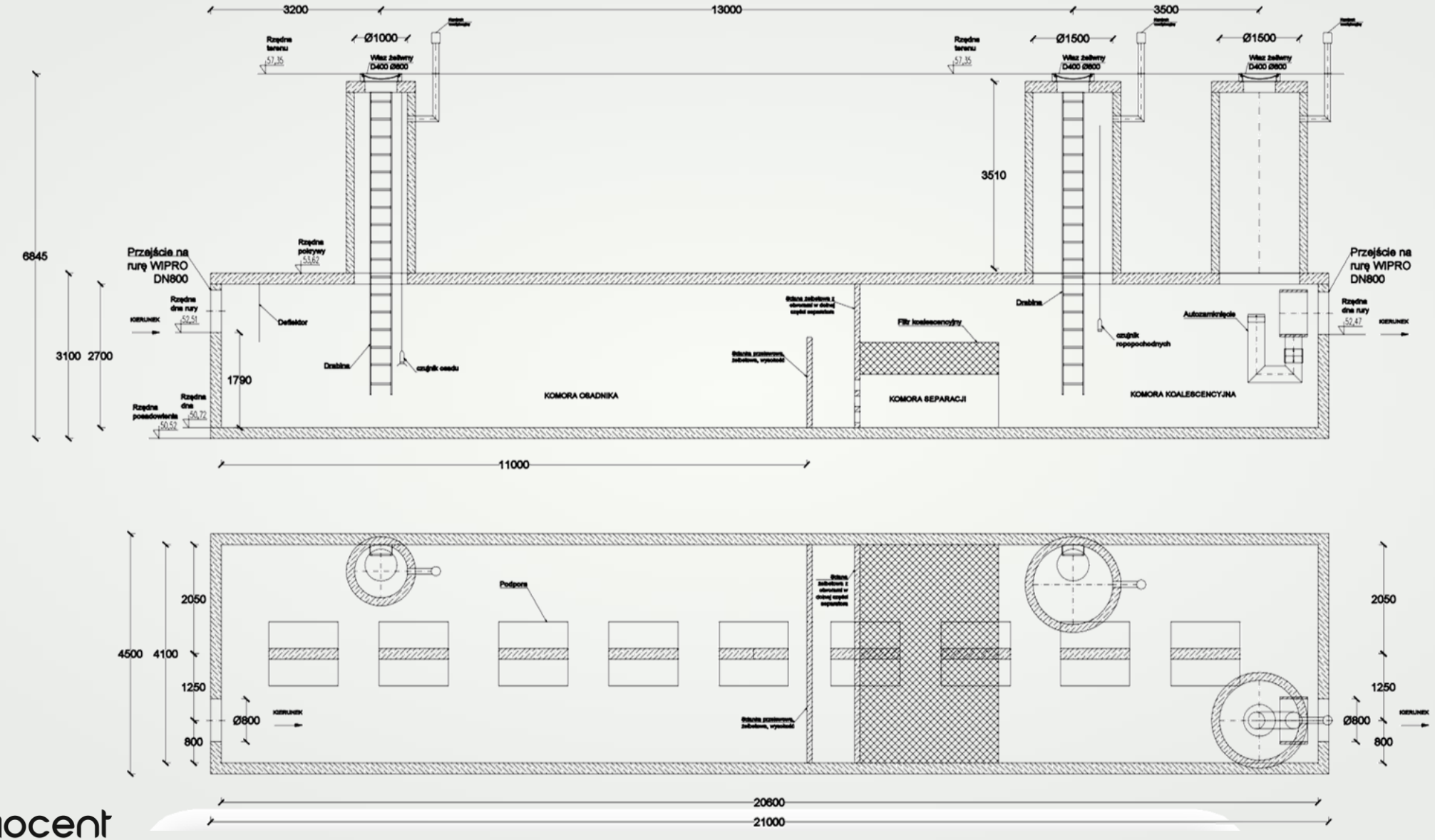
Nominal flow 800 dm^3/s

Settlement tank capacity 80 000 dm^3


Największy separator żelbetowy w Polsce

View from above. Ground layout in plan




3200
13000
3500
Ø1000
Ø1500
Ø1500
Właz żeliwny D400 Ø800
Właz żeliwny D400 Ø800
Właz żeliwny D400 Ø800
Rzędna terenu 57,35
Rzędna terenu 57,35
3510
6845
3100
2700
1790
Przejście na rurę WIPRO DN800
Przejście na rurę WIPRO DN800
Rzędna dna rury 52,47
Rzędna dna rury 52,47
Rzędna dna 50,72
Rzędna posadowienia 50,57
Rzędna pokrywy 53,62
Deflektor
Drabina
czujnik osadu
KOMORA OSADNIKA
Filtr koalescencyjny
KOMORA SEPARACJI
Drabina
czujnik ropopochodnych
Autozamknięcie
KOMORA KOALESCENCYJNA
KIERUNEK
KIERUNEK
11000
4500
4100
2050
1250
800
Ø800
Podpora
KIERUNEK
2050
1250
800
Ø800
KIERUNEK
20600
21000

Pumping stations BIOLIFT

Application, execution, purpose, types

Application

Sewage pumping stations are devices used in gravity-pressure and pressure sewer systems. They are designed for pumping municipal sewage with and without faeces, as well as for pumping rainwater and technological water.

Principle of operation

The pumping station is used to automatically pump the medium to a higher or further receiver (e.g. an expansion well or an existing collector).

Purpose

- housing estates,
- public utility buildings,
- industrial areas,
- commercial and retail facilities,
- underground garages and parking lots.

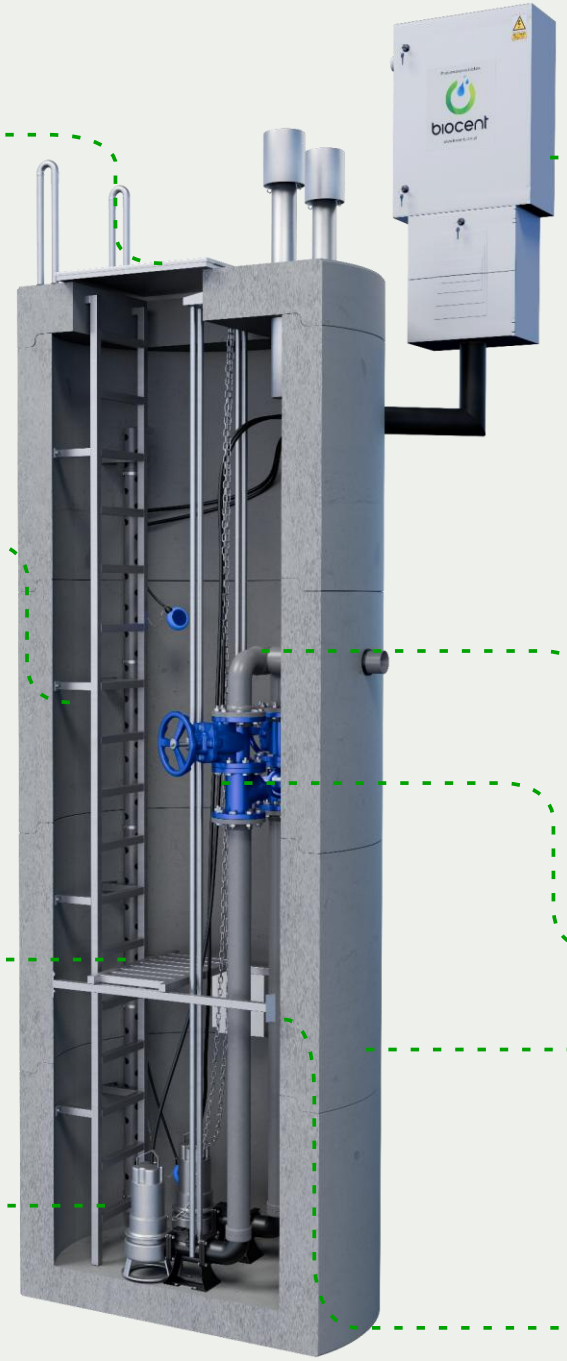
Production materials

- Reinforced concrete
- Polymer concrete
- Polyethylene
- GRP

Construction of a pumping station BIOLIFT

Tank materials :

- Reinforced concrete
- Polymer concrete
- Polyethylene
- GRP



Hatch
Reinforced concrete /PEHD/ Stainless steel

Control assembly
Compatible with BMS

Anti-slip ladder

Platform

Pumps
One, two or more

Piping
Stainless steel/PVC

Check and shut-off fittings

Tank

Deflector

Additional equipment :

- lighting,
- flow meters,
- aeration valves,
- bottom inserts,
- anti-sedimentation slopes.

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Additional equipment (generator sockets, monitoring protection, surge arresters, etc.)

External control factors (fill levels, weather sensors, operation locks)

Possibility of connecting to the BIOCONNECT monitoring system or another after consultation with the administrator

Control of any number of pumps adjusted to their power

Possibility to build a cabinet based on any PLC controller available on the market.

Implementation examples

MAN Factory, Niepołomice, Poland

Rainwater pumping station Q-3500 l/s

8 pumps 37kW, 2 pumps 12kW, 1 sump pump” 1,5kW

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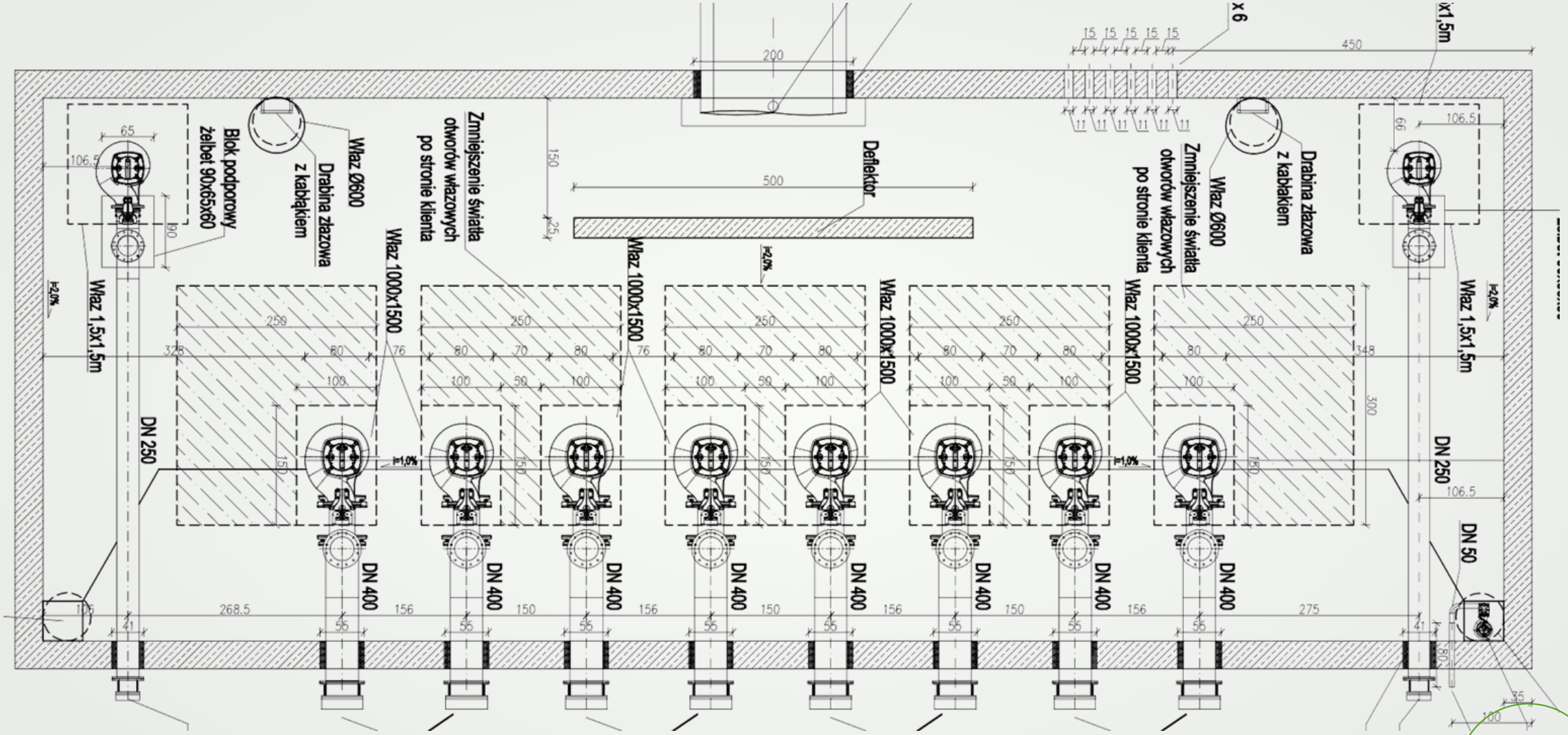
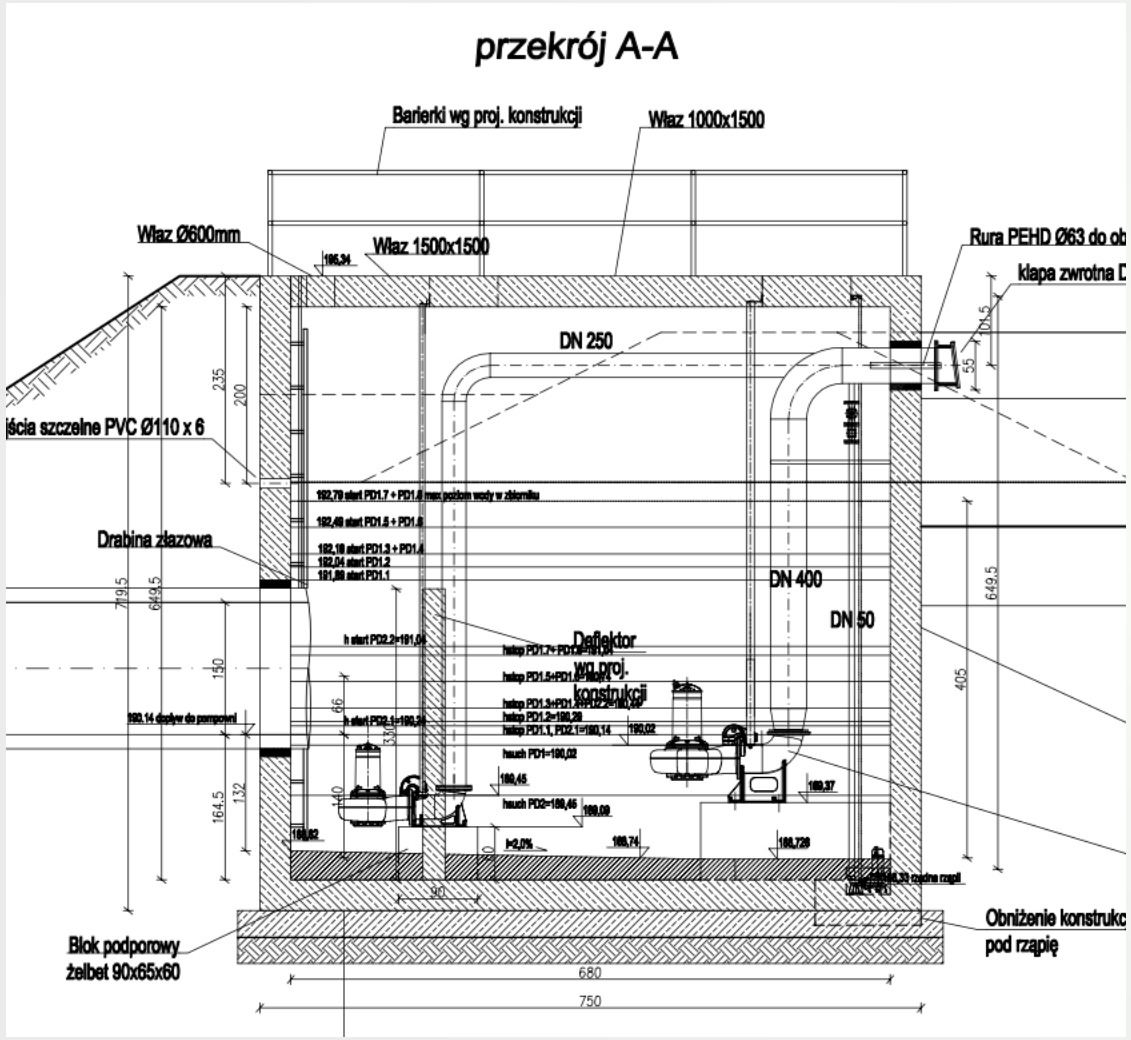
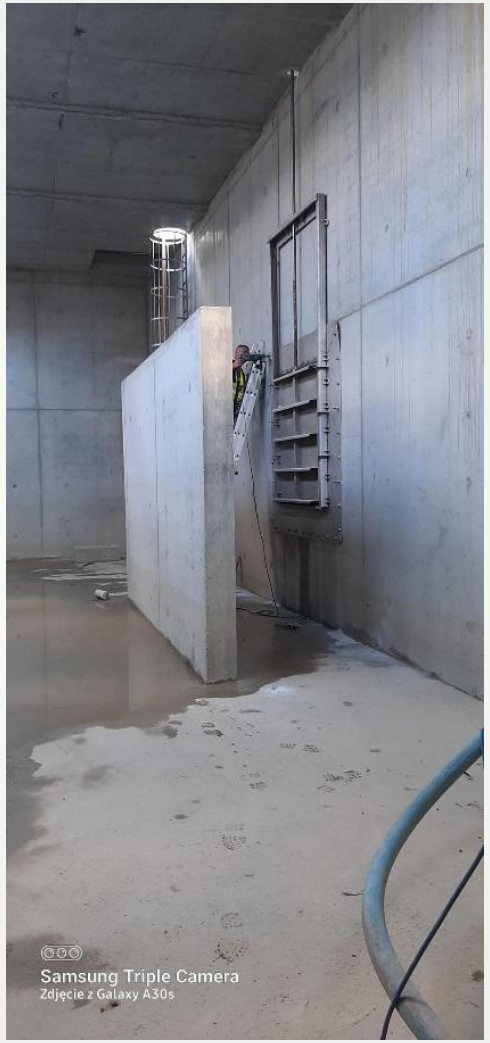

Właz Ø600
Drabina złazowa z kabłąkiem
Blok podporowy żelbet 90x65x60
Właz 1,5x1,5m
Zmniejszenie światła otworów włazowych po stronie klienta
Właz 1000x1500
Deflektor
DN 250
DN 400
DN 50
i=2,0%
i=1,0%


przekrój A-A
Barierki wg proj. konstrukcji
Właz 1000x1500
Właz Ø600mm
Właz 1500x1500
Rura PEHD Ø63 do ob
klapa zwrotna D
DN 250
DN 400
DN 50
Drabina złazowa
Deflektor wg proj. konstrukcji
Blok podporowy żelbet 90x65x60
Obniżenie konstrukc pod rząpię
680
750

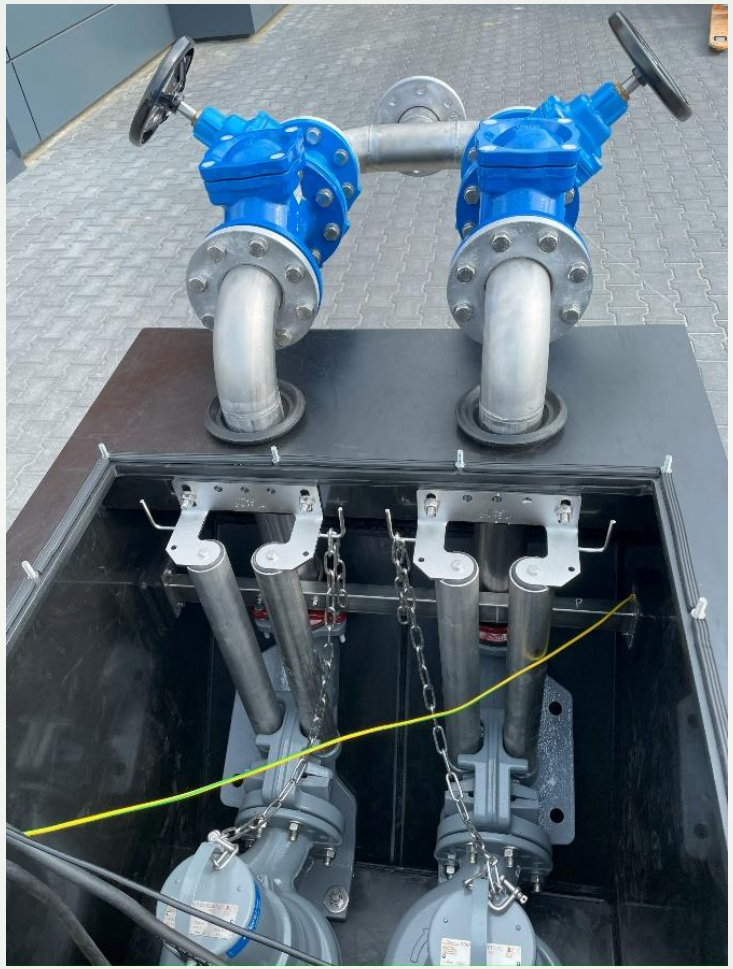

Samsung Triple Camera
Zdjęcie z Galaxy A30s


WWW.ICONTAINERS.PL

Zamość, Poland. Military unit

Rainwater pumping station in the tank GRP (DN1200 H7400)

Center of Oncology of the Lublin Region (COZL), Lublin, Poland




The most important projects for :
GDDKiA
45
FOT. GDDKiA/KRZYSZTOF NALEWAJKO

1. CONSTRUCTION OF THE HIGHWAY A2 WARSZAWA - KUKURYKI
Delivery and assembly of 15 storm sewage pumping stations with flow rates of 4 - 275 l/s and 2 sanitary sewage pumping stations with flow rates of 32 l/s

2. CONSTRUCTION OF THE EXPRESSWAY S8 (EXPANSION OF THE NATIONAL ROAD 8)
Delivery and assembly of 5 storm sewage pumping stations with flow rates of 30 – 53 l/s

3. Design and construction of the expressway S-61 Ostrów Mazowiecka – Szczuczyn
Delivery and assembly of 5 storm sewage pumping stations with flows of 10-100 l/s along with a visualization system.

4. Design and construction of the expressway S-61 Ostrów Mazowiecka – Szczuczyn MOPY Chomentowo
Delivery and assembly of 4 sewage pumping stations with flow rates of 5-10 l/s

5. Construction of the expressway S19 Lublin-Kraśnik, on the road section 1 Węglin-Niedrzwica Duża
Delivery of 3 storm sewage pumping stations with flow rates of 35 – 40 l/s

7. Design and construction of the expressway S17 – Węzeł Zakręt
Delivery and assembly of 7 storm sewage pumping stations with flow rates of 50 – 229 l/s

8. Design and construction of the expressway S61 on the road section Podborze - Śniadowo
Delivery and assembly of 24 storm sewage pumping stations with flow rates of 10-100l/s.

Retention tanks
RETANK

Application, execution, purpose, types

Application

RETANK tanks are installed mainly for the purpose of collecting and using rainwater, they are also used for rainwater retention during heavy rainfall.

Purpose

- Sewage treatment plant tanks
- Sewage tanks
- Buffer (retention) tanks
- Fire protection tanks
- Separator tanks

Production materials

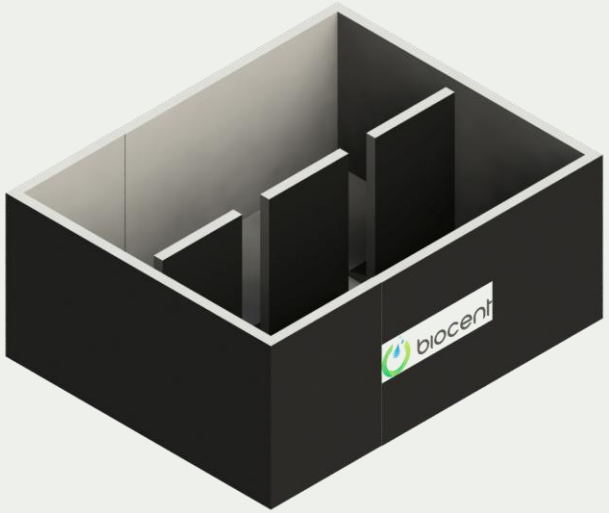
- Reinforced concrete
- PEHD

Monolithic retention tanks

RETANK

Modular retention tanks

RETANK-M



Shell retention tanks

RETANK-L

Retention tanks for hazardous substances

RETANK-NB

Plastic retention tanks

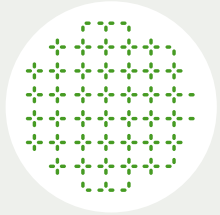
RETANK-P

What makes our retention tanks stand out?

High class of strength

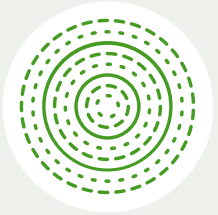
Class C35/45*
acc.to PN-EN 206:2014-04

* can be manufactured in any strength class possible



Low water absorption of concrete

Water absorption below <5%



High tightness of concrete

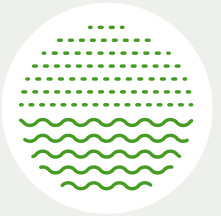
W8-W10 acc.to PN-88/B-06250

Frost resistance

F150 acc.to PN-88/B-06250

High class of exposure

XC4,XD3, XA3, XF4 acc.to
PN-EN 206:2014-04



Strong reinforcement

Ribbed steel grade A-III N,
smooth steel grade A-I

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Implementation examples


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
P
P
TGL

Flow regulators BIOFLOW

Application, execution, purpose, types, construction

Application

These are devices that are used in various types of retention systems.
Their task is to ensure a constant outflow of liquid from tanks.

Principle of operation

The operating principle is based on the increase in flow resistance caused by the increasing pressure of the liquid column, which causes a throttling effect.

Production materials

- Stainless steel type AISI 304
- PEHD

Purpose

- Storm overflows
- Retention tanks
- Sewage networks for storm water
- Pre-cleaning devices

Float

BIOFLOW-P

Conical

BIOFLOW-WS

Vertical (suspended)

BIOFLOW-WP

Flange

BIOFLOW-KP

BIOFLOW-KS

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* Tip: pay attention to the mounting location of the regulator, the diameter of the outlet pipe and the pressure in the regulator well.

Implementation examples

Muzyczna str., Lublin, Poland

Float flow regulator, capacity 1350 l/s

Wall and channel valves BIOLOCK

Application, execution, purpose, types, construction

Application

These are devices designed to partially or completely cut off and regulate the flow of liquids in various types of installations.

Principle of operation

Products in this category are made of AISI 304 stainless steel, seal: EPDM (standard) or silicone.

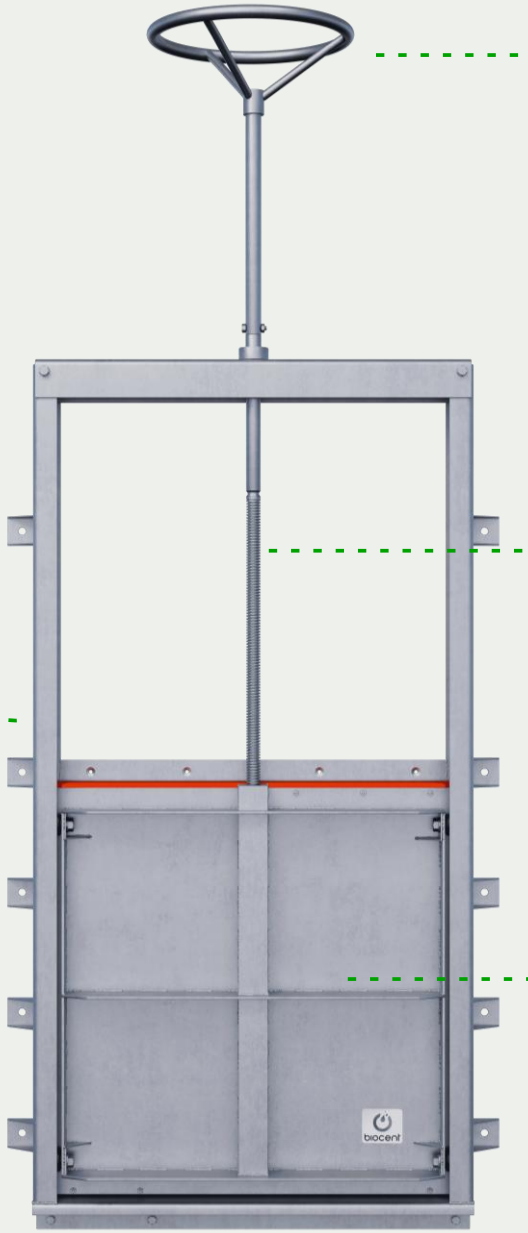
Types

Channel valve BIOLOCK - K

Wall valve BIOLOCK - N

Purpose

- Municipal sewage treatment plants,
- Industrial sewage treatment plants,
- Water reclamation systems,
- Road and highway drainage systems.



Manual drive
(*optional electric)

Valve frame
stainless steel AISI 304

Drive pin, trapezoidal screw
stainless steel AISI 304

Closing component
stainless steel AISI 304

Return flaps
REFLOW

Application, execution, purpose, types

Application

Used in sewage systems in places where there is a risk of sewage backflow.

Principle of operation

The operation is based primarily on the use of pressure differences before and after the device.

Purpose

They provide flow in one direction, preventing possible damage caused by flooding.

Flanged end check valve

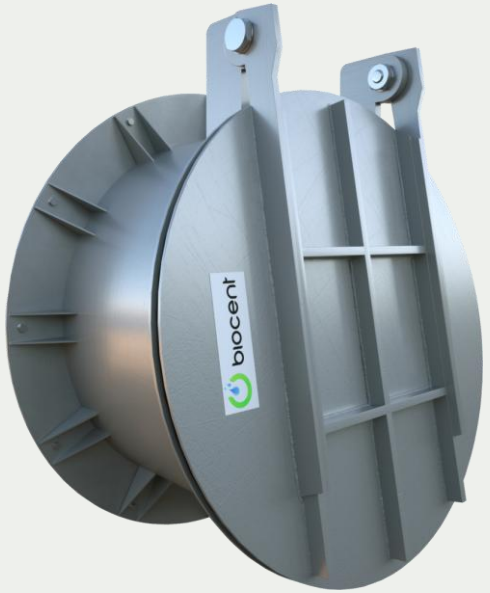
REFLOW-K

End check valve for pipe

REFLOW-DR

Flanged end check valve

REFLOW-KST



Flanged end check valve

REFLOW-P

Implementation examples

Muzyczna str., Lublin, Poland

3 x REFLOW 1200

Inspection hatches BIOTOP

Application, execution, purpose, types

Biocent offers a wide range of inspection hatches that can be installed in such a way as to be as invisible as possible, which, combined with the aesthetic design made of stainless steel, ensures high quality of the product.

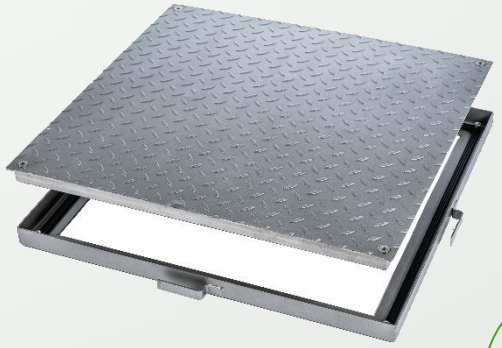
We produce inspection hatches in many variants:

Covering

To be filled out

(modular, with insulation, with actuators, with fire protection, class A15-D400)

Walkways made of checkered sheet metal

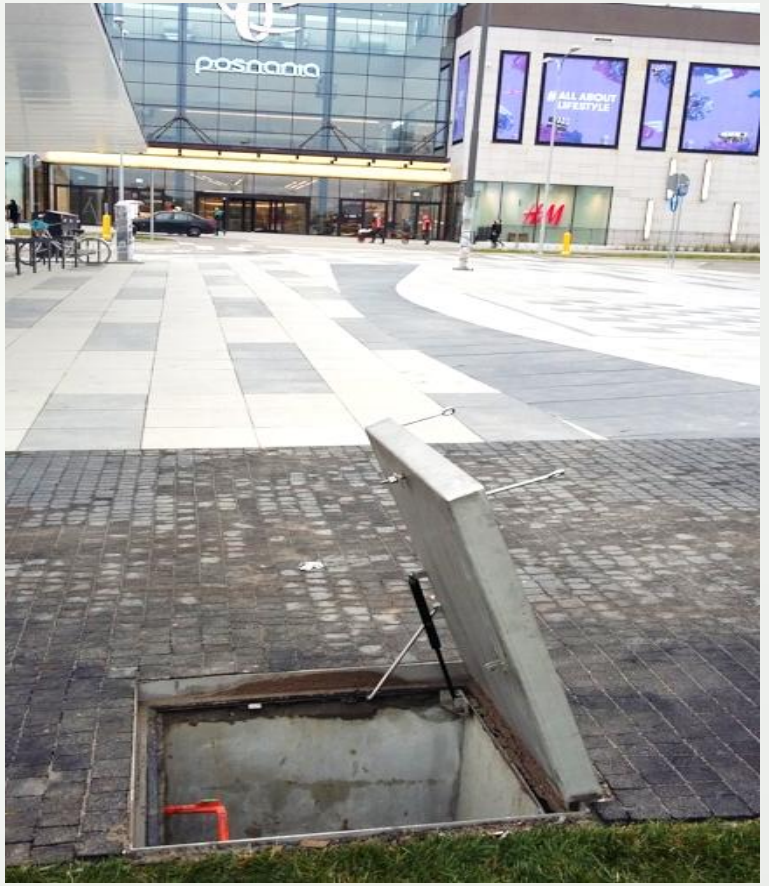


Implementation examples

Inspection hatches

Warsaw Subway

Galeria Posnania – Poznań, Poland



Inspection hatches

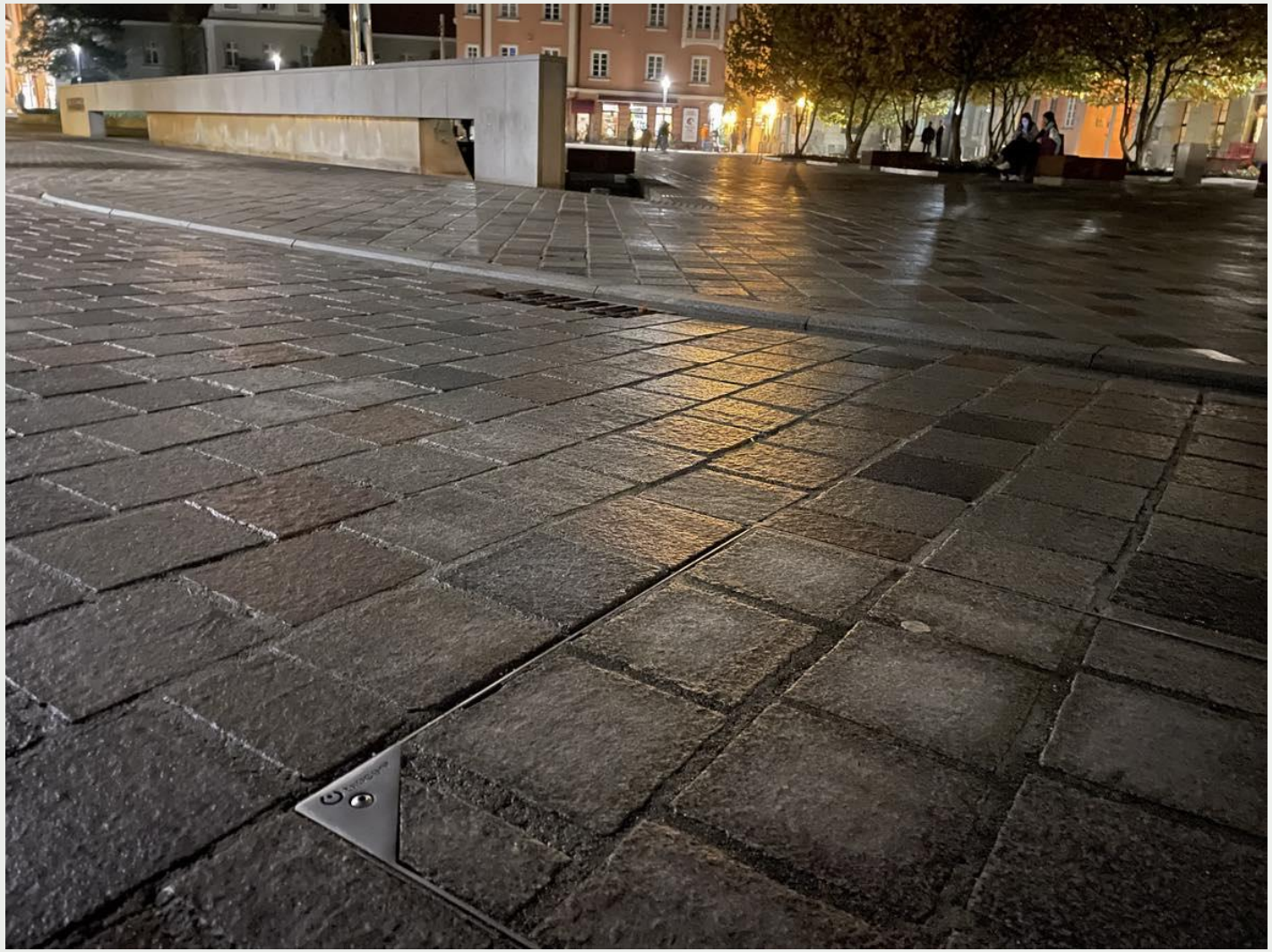
Galeria Północna, Warsaw, Poland

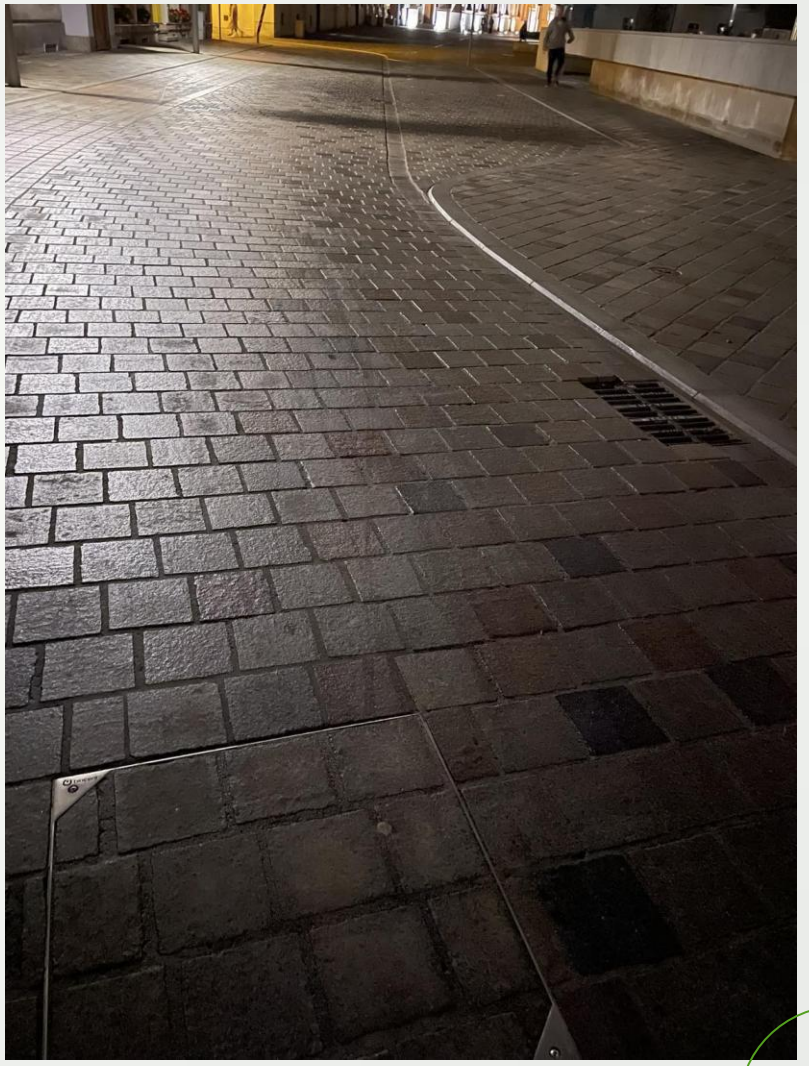
Inspection hatches

Plac Szembeka, Warsaw, Poland

Inspection hatches

Plac Kolegiacki – Poznań, Poland





Thank you for your attention!

Do you have more questions?

Contact us!

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Sergiusz Kuczyński

International Market Development Manager