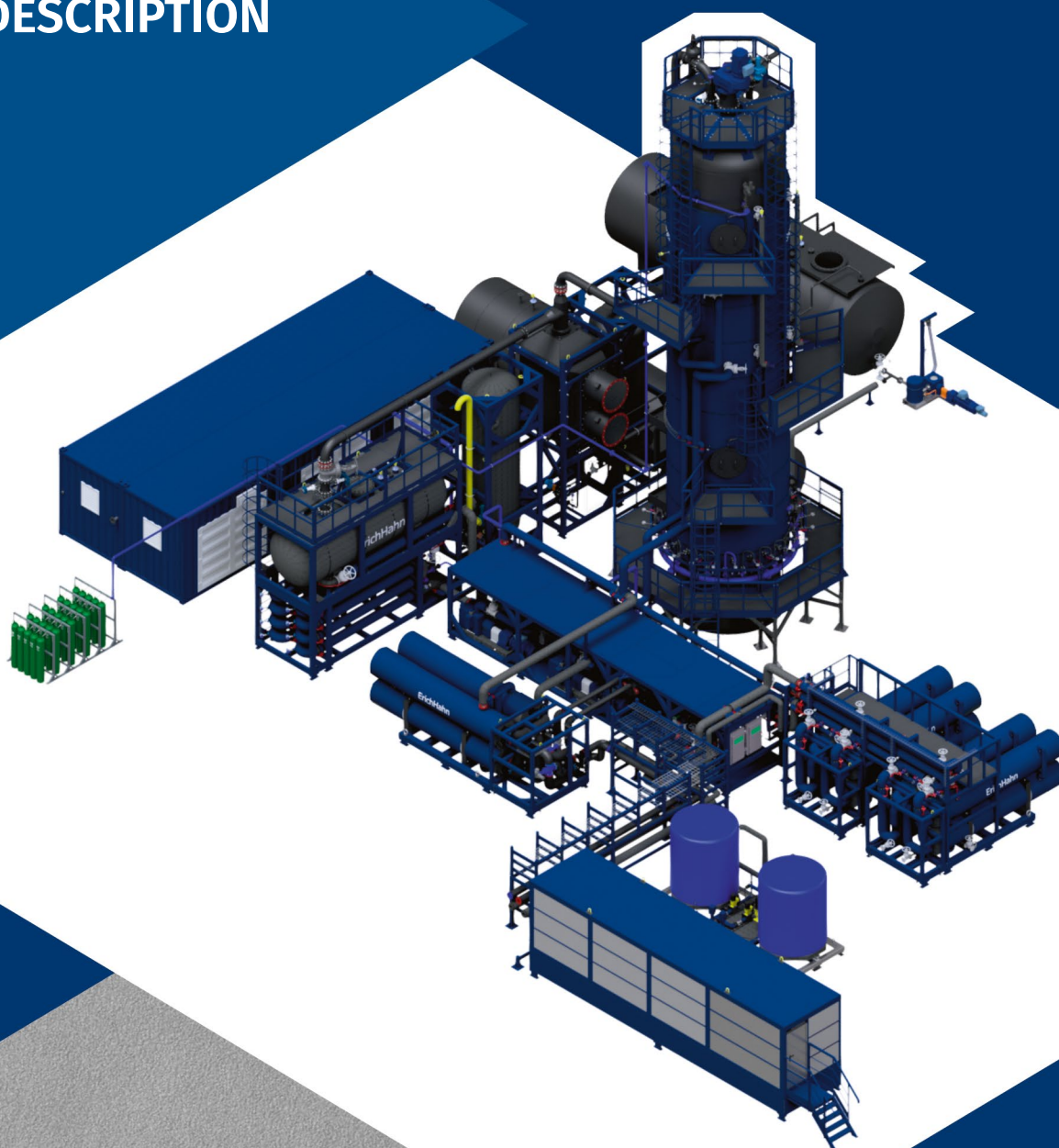




Bitumen Oxidation Plant

OBP-25

**TECHNICAL
DESCRIPTION**



Since 2014, ErichHahn has been designing and supplying equipment for the production, storage, and transportation of viscous and solidifying fluids. Our cumulative knowledge and experience allow us to be a provider of advanced industrial solutions on both regional and global levels. We deliver pumping equipment to the suppliers of bitumen for road construction, including terminals for storage and transportation of viscous and solidifying fluids, mobile and stationary modular plants, and units designed in accordance with individual customer requirements.



ErichHahn OBP-25 is a modern bitumen oxidation plant designed for the production of road, construction, and roofing bitumen from vacuum residue. The unit implements a controlled air oxidation process, ensuring consistent quality of the final product. The combination of an oxidation column and an intensive oxidation unit enables high throughput and repeatable bitumen properties. Its modular design and full automation make the plant easy to integrate and reliable in operation.

ErichHahn's mission is to apply our technology and engineering expertise to improve our customers' production processes.

We strive to be a driving force behind our customers' process improvements, business development and production culture, following the principles of innovation, customer focus, reliability, safety and competence.

TECHNICAL DESCRIPTION

OBP-25

Bitumen Oxidation Plant

Purpose and Configuration of the

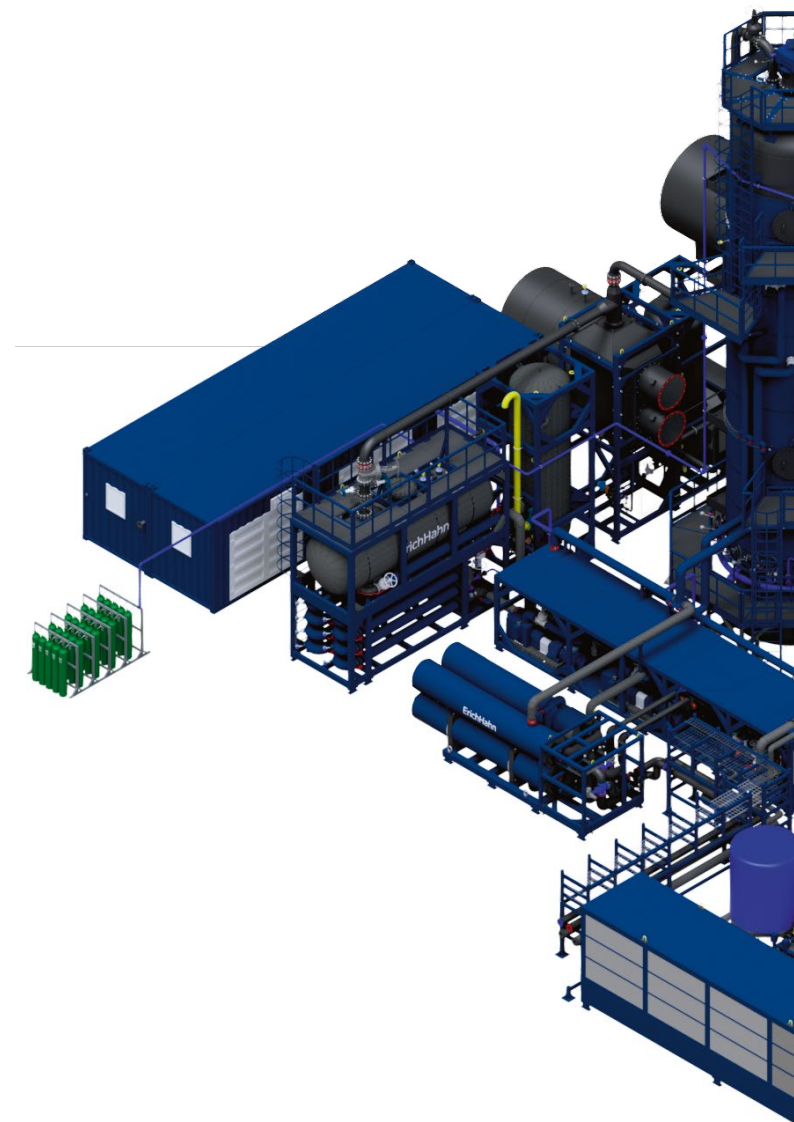
The ErichHahn OBP-25 Bitumen Oxidation Unit (hereinafter OBP-25) is designed for the production of bitumen from tar (a residue of vacuum distillation of fuel oil) by reacting it with air oxygen in column-type and tubular reactors.

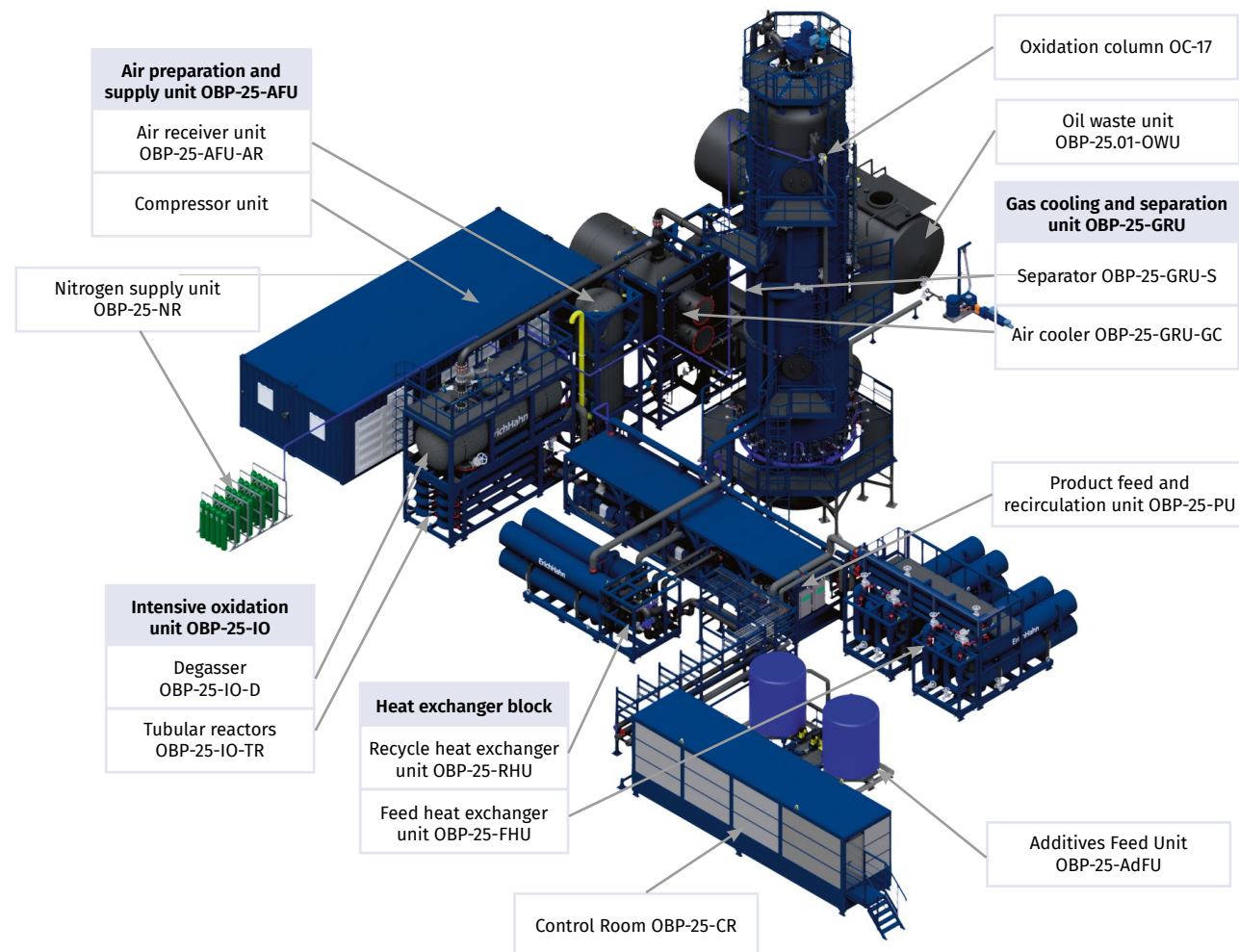
Thanks to the special design of the oxidation column, the presence of a tubular reactor (for intensive oxidation), and the recycling process, the OBP-25 unit meets all requirements for road, construction, and roofing bitumens. When oxidation is conducted at the same temperature, the oxidation time for construction bitumens is approximately 20% longer than for road bitumens. This is due to differences

in composition and intended use. Construction bitumens generally contain higher concentrations of asphaltenes and resins, which enhance their oxidation resistance but also increase the time required for the process. The modular design and modern equipment allow the unit to be rapidly implemented both in new production facilities and in the modernization of existing ones.

The unit includes the following components:

- Product feed and recirculation unit (Pumping Unit OBP-25-PU);
- Heat exchanger block:
 - Recycle heat exchanger unit OBP-25-RHU;
 - Feed heat exchanger unit OBP-25-FHU;
- Air preparation and supply unit (Air Feed Unit OBP-25-AFU):
 - Compressor unit;
 - Air receiver unit OBP-25-AFU-AR;
- Oxidation column (Oxidation Column OC-17);
- Intensive oxidation unit (OBP-25-IO):
 - Tubular reactors OBP-25-IO-TR;
 - Degasser OBP-25-IO-D;
- Gas cooling and separation unit (Gas Recovery Unit OBP-25-GRU):
 - Air cooler OBP-25-GRU-GC;
 - Separator OBP-25-GRU-S;
- Thermal oil heating unit THU-1200 (Optional);
- Catalyst dosing unit (Additives Feed Unit OBP-25-AdFU);
- Automation and control unit (Control Room OBP-25-CR);
- Nitrogen supply unit OBP-25-NR (nitrogen ramp);
- Oil waste unit OBP-25.01-OWU.





Advantages of the ErichHahn OBP-25

Technology:

- Maximum bitumen production capacity – up to 30 t/h;
- Modified column:
 - intensive mixing;
 - special contact devices to increase the specific surface area of air-product interaction and reduce foam formation;
- Shell-and-tube heat exchangers – operate in heating mode (during start-up to heat the tar) and cooling mode (during column operation to remove heat);
- Modified dispersers for air supply and distribution throughout the column volume. Degree of O₂ dispersion – maximum;
- Horizontal tubular reactor equipped with 16 static mixers, which, in combination with the column operation, ensures maximum throughput for any type of feedstock and bitumen product;
- Maximum heat recovery from outgoing products for feedstock heating;
- Compressor station ensures unit operation across the design performance range;

- Recirculation of outgoing products in the reactor block;
- Flue gas heat recovery from the utilizer, with the possibility of heating air, generating steam, or heating thermal oil if required.

Design:

- High factory-ready modular design and compact layout;
- Modern equipment;
- Full automation and ease of operation.

Safety:

- All equipment is designed considering the flammable and toxic properties of raw materials, intermediates, materials, finished products, and process wastes;
- Fully automated system incorporating methods and tools to prevent and manage all possible operational faults;
- Online O₂ analyzers in the exhaust gases.

Operating Principle

The oxidation of tar with air oxygen at high temperatures changes the consistency of the tar, producing a new product – bitumen.

The process is accompanied by exothermic reactions, releasing a significant amount of heat, which must be removed from the reaction zone to maintain the temperature within the technological limits. The higher the degree of process conversion, the more heat is released.

Factors affecting the process:

- Properties of the feedstock (depth of vacuum distillation of fuel oil);
- Process temperature;
- Air flow rate and intensity of its dispersion;
- Process technology.

During the bitumen oxidation reaction, air oxygen is primarily consumed in the condensation of hydrocarbons and the formation of asphaltene acids. This process leads to the creation of heavier and more complex molecules, which influence the physicochemical properties of the bitumen and improve its rheological characteristics, such as strength, elasticity, and viscosity.

Main Operational Stages of the OBP-25 Unit:

Preheating before start-up:

Unlike conventional (plant) units, the OBP-25 can be started without a dedicated heating furnace. Tar is heated in the recycle heat exchanger block OBP-25-RHU (heating mode during start-up). The heat-transfer medium is thermal oil heated in the Thermal Oil Heating Unit THU-1200 up to 210 °C, while the tar can be heated from 140 to 195 °C over 3–5 hours.

Air supply for oxidation:

Once the column reaches operating temperature (at least 190 °C), air from the air preparation and supply unit OBP-25-AFU is fed into the column and/or reactor for oxidation. The air preparation and supply unit consists of a compressor unit and an air receiver. The compressor unit provides the required air pressure and volume, which passes through a filtration system to remove impurities. The air receiver smooths flow pulsations and stores air, maintaining stable system pressure.

Activation of recirculation:

After air supply is initiated and the oxidation reaction progresses, two recirculation processes are implemented in the OBP-25:

- From the oxidation column OC-17 to the recycle heat exchanger block OBP-25-RHU for removing excess reaction heat.

At this stage, thermal oil acts as the cooling medium, heating from 160 °C to 200 °C, while the oxidized tar is cooled from 220 °C to 190 °C (±5 °C). Recirculation ratio: 3:1.

- From the oxidation column to the intensive oxidation unit OBP-25-IO.

Tubular reactors OBP-25-IO-TR create turbulent flow and maximize oxygen dispersion in the product. After passing through the reactor, the oxidized product enters the degasser OBP-25-IO-D to separate gases from the liquid product. From the degasser, the oxidized product is recirculated back to the reactor at a 3:1 ratio and also returned to the column in an amount equal to that leaving the column.

Transition to continuous mode:

Once the desired product quality is achieved in the oxidation column, the OBP-25 switches to continuous operation. Feedstock (tar) is supplied to the feed heat exchanger block OBP-25-FHU and heated to 195 °C by the outgoing products from the intensive oxidation block. Continuous mode involves feeding the heated raw material into the column and uniformly withdrawing the product from the column to the reactor, and from the reactor to the outlet. This ensures a continuous feedstock processing process, maintaining stable reaction conditions and increasing production efficiency.

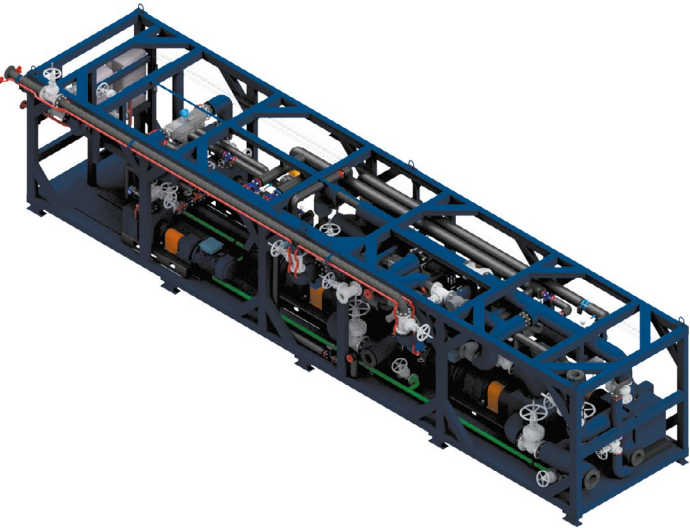
Exhaust air and released gases are drawn from the top of the column and fed into the gas cooling and separation unit OBP-25-GRU, where black oil is separated from the exhaust gases. The separator condensate (black oil) is pumped into storage tanks and can be used as a component of boiler fuel or disposed of.

Technical Description of the Main Equipment

Product feed and recirculation unit (Pumping Unit OBP-25-PU)

The **product feed and recirculation** unit is designed to handle feedstock supply, recirculation, and product withdrawal in the OBP-25 unit. It is a modular containerized block, housing the following systems:

- Tar feed line: Designed to deliver tar to the oxidation column via the feed heat exchanger block.
- Oxidation column recirculation line: Designed to supply oxidized tar from the oxidation column to the intensive oxidation unit or to recirculate it through the recycle heat exchanger block back to the column.
- Intensive oxidation unit recirculation line: Designed to deliver bitumen exiting the unit through the feed heat exchanger block, as well as for internal recirculation within the intensive oxidation unit.



Technical Specifications of OBP-25-PU

Product pipelines, DN, mm	100, 125, 150
Oil pipelines, DN, mm	25, 40, 50, 100
Mass, kg	10000
Dimensions (L × W × H), m	10x2,7x2,5
Tar feed line	
Filter	HOF-100
Pump station	Victor Pumps R105 or equivalent
Capacity, m³/h	45
Operating pressure (gauge), bar	8
Rotation speed, min⁻¹	355
Quantity, pcs	2 (1 operating, 1 standby)
Electric motor power, kW	18,5
Liquid flow measurement	Vortex flow meter (or Coriolis flow meter)
Oxidation column recirculation line	
Pump station	Victor Pumps R180 or equivalent
Capacity, m³/h	120
Operating pressure (gauge), bar	8
Rotation speed, min⁻¹	315
Electric motor power, kW	37
Quantity, pcs	2 (1 operating, 1 standby)
Liquid flow measurement	Vortex flow meter (or Coriolis flow meter)
Intensive oxidation unit recirculation line	
Pump station	Victor Pumps R180 or equivalent
Capacity, m³/h	120
Operating pressure (gauge), bar	8
Rotation speed, min⁻¹	315
Electric motor power, kW	37
Quantity, pcs	2 (1 operating, 1 standby)
Liquid flow measurement	Vortex flow meter (or Coriolis flow meter)

Heat exchanger block (Feed Heat Exchanger Unit OBP-25-FHU and Recycle Heat Exchanger Unit OBP-25-RHU)

The **heat exchanger block** consists of the feed heat exchanger unit **OBP-25-FHU** and the recycle heat exchanger unit **OBP-25-RHU**.

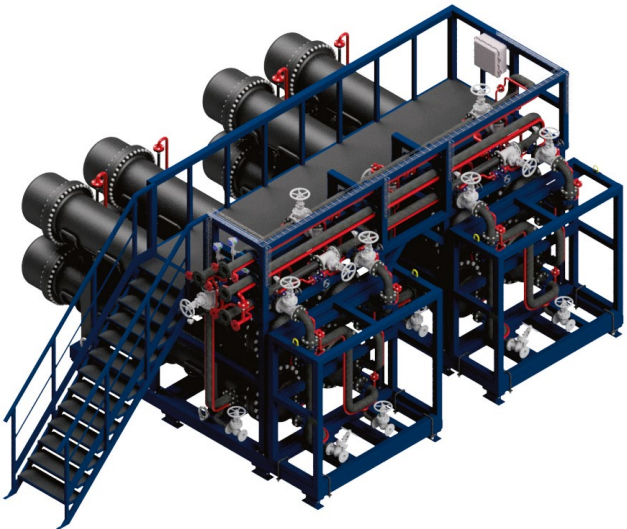
The feed heat exchanger unit OBP-25-FHU is a modular

containerized block housing shell-and-tube heat exchangers with floating heads (ErichHahn THE-600).

The unit is designed to heat tar using the heat from outgoing bitumen (heat recovery).

Technical Specifications of OBP-25-FHU EX

Power of the OBP-25-FHU unit, kW	600
Mass, kg	20000
Dimensions (L × W × H), m	8,5x2,24x2,35
Heat exchange surface area, m²	432
Shell diameter, mm	604/585
Tube diameter, mm	21,3
Tube wall thickness, mm	3
Tube length, mm	3800
Number of tubes, pcs	292
Design pressure, MPa	1,6
Design temperature, °C	300
Product pipelines, DN mm	125
Oil pipelines, DN mm	100
Insulation thickness, mm	50



Feed Heat Exchanger Unit **OBP-25-FHU**

The **recycle heat exchanger unit OBP-25-RHU** is a modular containerized block housing shell-and-tube heat exchangers with floating heads (ErichHahn THE-600).

During unit start-up, the block is used to heat tar with thermal oil (heating mode). In normal operation, the block removes reaction heat, with the tar heating the thermal oil (cooling mode).

To operate in these modes, the block is equipped with a thermal oil distribution manifold, which includes two three-way control valves.

The first valve regulates the flow of thermal oil through the heat exchangers and is used for precise product temperature control.

The second valve regulates the supply of thermal oil to the pipeline and equipment heating systems (thermal satellites).

Technical Specifications of OBP-25-RHU

Power of the OBP-25-RHU unit, kW	up to 1000
Mass, kg	15000
Dimensions (L × W × H), m	7x2,24x2,6
Heat exchange surface area, m²	288
Design pressure, MPa	1,6
Design temperature, °C	300
Insulation thickness, mm	50



Recycle Heat Exchanger Unit **OBP-25-RHU**

Air Preparation and Supply Unit (Air Feed Unit OBP-25-AFU)

The unit is designed to supply compressed air for the bitumen production process in the column-type and tubular reactor blocks.

It consists of a modular container housing the compressor unit and a separate air receiver unit.

Inside the compressor unit, compressors are installed along with associated process equipment (filters, dryers, etc.) and piping systems.

The air receiver unit OBP-25-AFU-AR is installed externally to the compressor unit.



Compressor Unit

Technical Specifications of OBP-25-AFU

Compressor Unit	
Type	Containerized air preparation and supply compressor station
Block composition	2 × 40 ft HC containers
Compressor type	Screw compressors, oil-filled, air-cooled
Number of compressors	2 pcs
Compressor configuration	• 1 × with variable speed drive (VSD) • 1 × without variable speed drive
Rated power of one compressor, kW	75
Capacity of one compressor, Nm³/h	800
Operating medium	Atmospheric air
Air inlet temperature, °C	-25 ... +45
Air outlet temperature, °C	100
Cooling system	Air
Air drying system	Optional
Type of dryer (if installed)	Refrigerated
Dew point (if installed), °C	up to +3 °C
Air Receiver Unit OBP-25-AFU-AR	
Type	Containerized air receiver unit
Purpose	Accumulation and stabilization of compressed air pressure
Operating pressure (gauge), bar	7
Design pressure, bar	16
Total receiver capacity, m³	10
Receiver equipment	Safety valve, pressure gauge, automatic drain, 2 × air flow meters, 2 × control valves



Air Receiver Unit OBP-25-AFU-AR

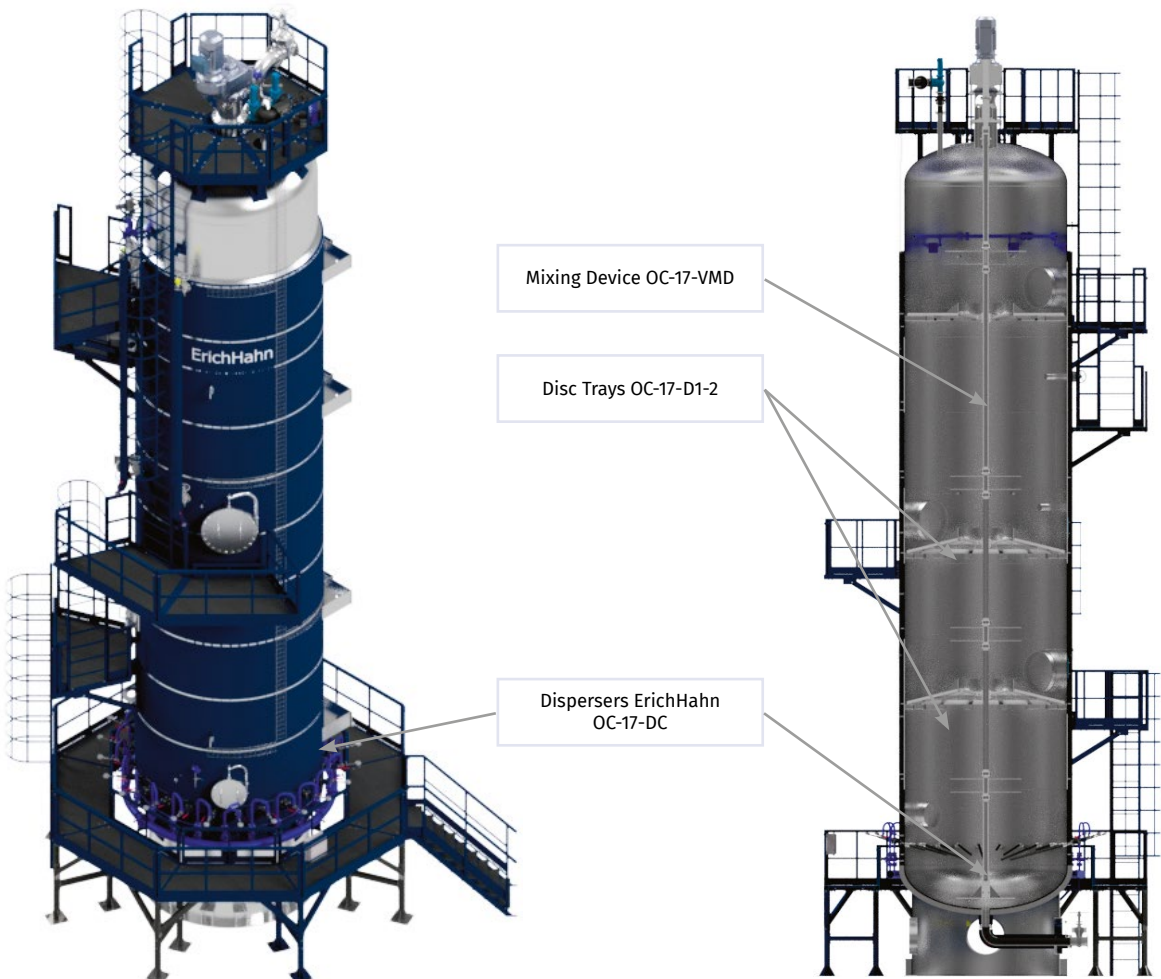
Oxidation column OC-17

The ErichHahn OC-17 Oxidation Column is a cylindrical apparatus with a diameter of 3.2 m and a height of 19 m. The column is equipped with a mixing device OC-17-VMD, ErichHahn OC-17-DC dispersers, and disc trays OC-17-D1-2 (2 units).

The OC-17 oxidation column is designed for efficient oxidation of various substances in chemical processes. Its internal design ensures optimal distribution of reactants (air) and maximum contact between phases, providing a high degree of reaction.

The OC-17-VMD mixing device ensures uniform flow distribution and prevents stagnant zones, which is critical for maintaining stable operating conditions. The ErichHahn OC-17-DC dispersers are used to improve gas dispersion within liquids, further enhancing the efficiency of oxidation processes.

The disc trays OC-17-D1-2, installed within the column, provide improved phase contact and prevent the formation of large bubbles. This increases column throughput and improves the quality of the final product.



The oxidation column is designed to operate under elevated pressure and temperature conditions. A safety instrumented system (SIS) is installed to bring the column to a safe state if process parameters reach emergency values.

Technical Specifications of OC-17

Operating medium	Tar, bitumen, air, exhaust gases
Material construction	Carbon steel
Diameter, m	3,2
Height, m	19
Internal volume, m³	120
Reaction volume, m³	80
Column mass at hydrostatic test, max, kg	170000
Operating temperature, °C	up to 230
Operating pressure (gauge), MPa	0,005-0,3
Design temperature, °C	300
Design pressure, MPa	0,6
Dispersers, pcs	1
Disc trays (perforated sheets), pcs	2
Air oxygen analyzer (O₂ concentration transmitter in exhaust gases)	provided
Spring-loaded safety valve	provided
Automatic fire protection	provided (optional)
Explosion-proof electrical equipment	provided
Emergency protection devices	provided
Mixing Device	OC-17-VMD
Device type	Vertical
Electric drive power, kW	45
Number of blade rows	3
Number of blades per row	3

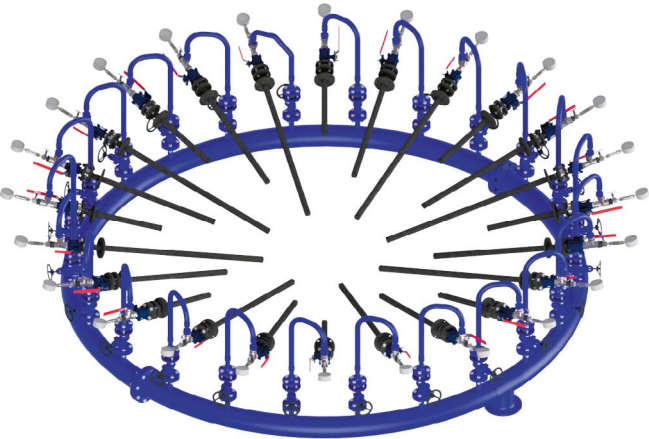
Dispersers OC-17-DC

ErichHahn dispersers include devices for supplying air into the column and a ring manifold, which ensures uniform air pressure throughout the manifold and, consequently, even distribution of air along the arms.

The ErichHahn disperser provides turbulent air injection into the liquid medium, ensuring intensive air dispersion throughout the column volume.

The design of the ErichHahn disperser reduces the risk of coking and allows adjustment of the air supply and its distribution along the arms.

Each arm is equipped with a pressure sensor that monitors the functionality of the disperser arms.



Technical Specifications of OC-17-DC

Operating medium	Air
Material construction	Carbon steel
Capacity, m³/h	3000
Manifold ring diameter, m	3,8
Number of arms	24
Hole diameter, mm	8-18

Intensive oxidation unit (OBP-25-IO)

The intensive oxidation unit OBP-25-IO is a modular container block housing:

- Tubular reactors OBP-25-IO-TR
- Degasser OBP-25-IO-D

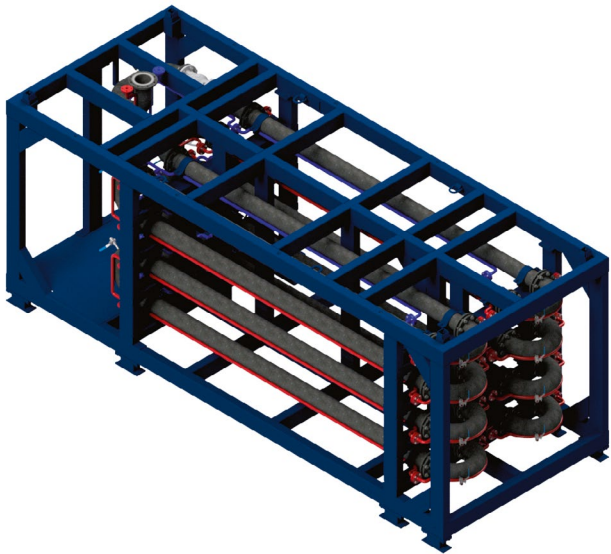
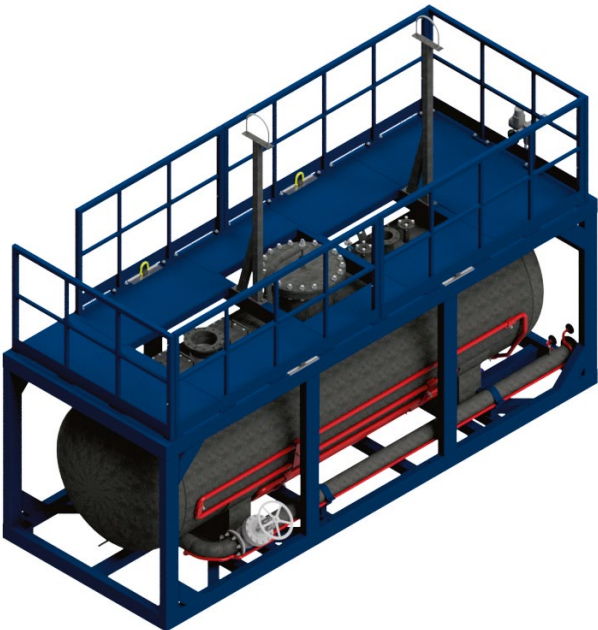
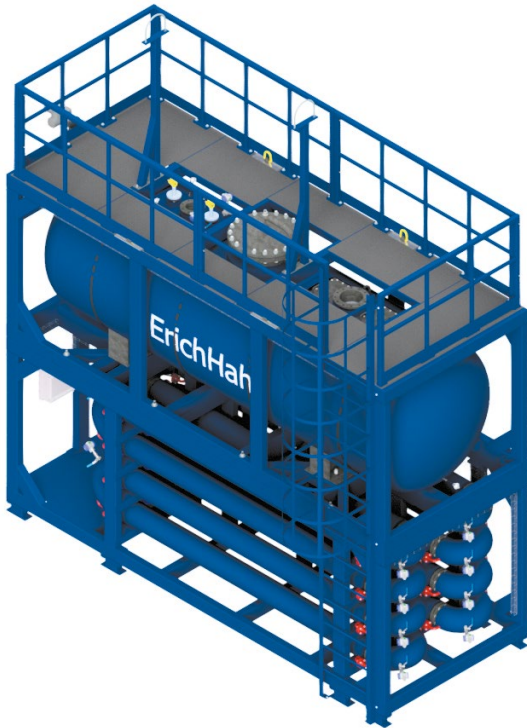
The tubular reactor of the intensive oxidation block consists

of 16 horizontal tubes equipped with internal static mixers, which enhance air dispersion and ensure reaction intensity through turbulent mixing.

The tubular reactor block is equipped with a safety interlock system (SIS), which brings the unit to a safe state if process parameters reach emergency values.

Technical Specifications of OBP-25-IO

Degasser OBP-25-IO-D	
Tank type	Horizontal
Operating medium	Bitumen / off-gases
Operating temperature, °C	up to 230
Design temperature, °C	300
Design pressure, MPa	0,05
Internal diameter, mm	1600
Weight during hydrotesting, max, kg	20000
Tubular Reactor OBP-25-IO-TR	
Nominal diameter DN, mm	150
Number of sections	16
Length of one section, mm	4000
Internal volume, m³	1,38
Design temperature, °C	300
Design pressure, MPa	0,6



Gas cooling and separation unit (OBP-25-GRU)

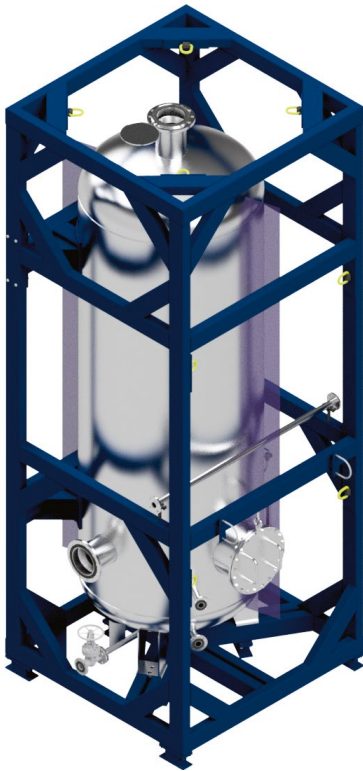
The **gas cooling and separation unit** is designed to cool the off-gases from the oxidation column and the intensive oxidation unit, followed by the separation of black diesel from the off-gases.

It consists of modular blocks, which are assembled on-site:

- Air cooler OBP-25-GRU-GC;
- Separator OBP-25-GRU-S.

Technical Specifications

Air cooler OBP-25-GRU-GC	
Type	Vertical, with forced air supply to the heat exchange surface, featuring a replaceable heat exchanger section
Operating medium	Off-gases from column and tubular reactor blocks
Fan type	Axial fan
Quantity, pcs	2
Nominal impeller diameter, mm	900
Capacity, m³/h	up to 35,000
Motor protection rating	IP55
Insulation class	F
Nominal diameter of heat exchanger tube, DN, mm	80
Number of tubes per heat exchanger section, pcs	120
Separator OBP-25-GRU-S	
Type	Vertical, with built-in droplet separator
Apparatus capacity, m³	9,5
Nominal diameter of apparatus, DN, mm	1600
Apparatus height (overall), mm	5500
Weight during hydrotesting, kg	17000
Transport dimensions (L × W × H), m	5,90x2,35x2,38



Separator OBP-25-GRU-S



Air cooler OBP-25-GRU-GC

Thermal oil heating unit THU-1200 (Optional)

The **thermal oil heating unit** provides heating of the feedstock to the reaction temperature during unit start-up. A closed-loop circulation of the thermal oil ensures uniform and efficient heating. The oil is heated in a modular boiler

Technical Specifications

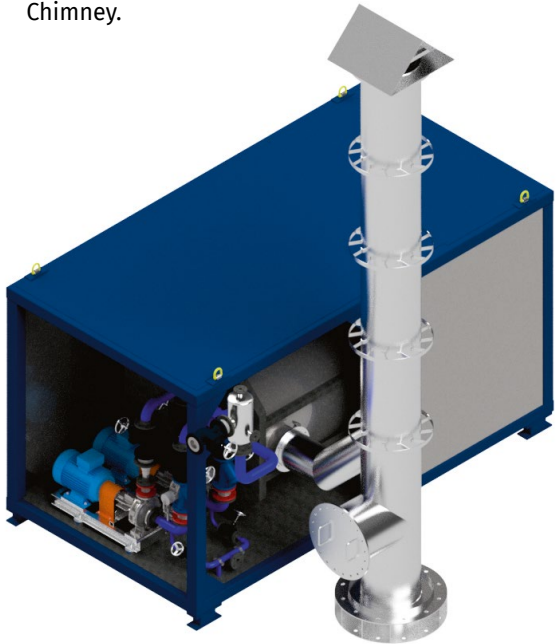
Thermal oil heater Cannon Bono Energia OMV 1200 or equivalent	
Thermal power, MW	1,2
Thermal oil heating temperature, °C	up to 215 ¹⁾
Efficiency, %	93
Fuel	Natural gas, LNG; diesel fuel; fuel oil ²
Hourly natural gas consumption, Nm³/h	≈ 137 Nm³/h (at LHV = 34 MJ/Nm³)
Hourly diesel fuel consumption, m³/h – approx. 0.13	based on LHV = 42.6 MJ/kg, ρ = 840 kg/m³
Circulation pump block THU-1200-PU	
Pump	ALLWEILER NT 80-200/03 or equivalent
Capacity, m³/h	80
Head, m	up to 100
Motor power, kW	22
Number of pumps	2
Chimney	
Internal diameter, mm	600
Length from tangent to tangent, m	6950

1. The thermal oil heating temperature depends on its technical specifications and can reach up to 350 °C.
2. The fuel type is determined by the customer.

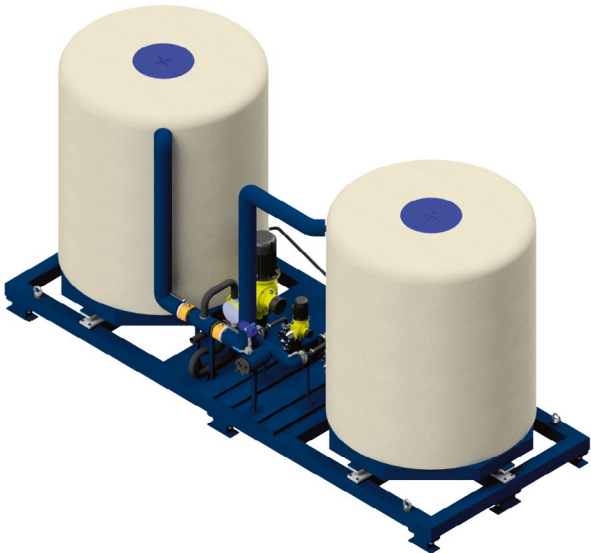
house equipped with a burner that can operate on diesel, fuel oil, gas, or in a multi-fuel mode. The system maintains a stable operating temperature required for handling viscous products.

Main components of the thermal oil heating unit:

- Modular container-type block;
- Thermal oil heater;
- Circulation pump block;
- Chimney.



Catalyst dosing unit (Additives Feed Unit OBP-25-AdFU)



The **catalyst dosing unit OBP-25-AdFU** is designed for the supply of polyphosphoric acid, surfactants, or other liquid catalysts during the oxidation process. The OBP-25-AdFU consists of two double-walled polypropylene tanks. The tanks are mounted in separate frame blocks. On top of the tanks, specialized valves with electric actuators in chemical-resistant design are installed. Additives are supplied via a chemical dosing pump station, which is located in the product feed and recirculation unit.

Automation and control unit (Control Room OBP-25-CR)

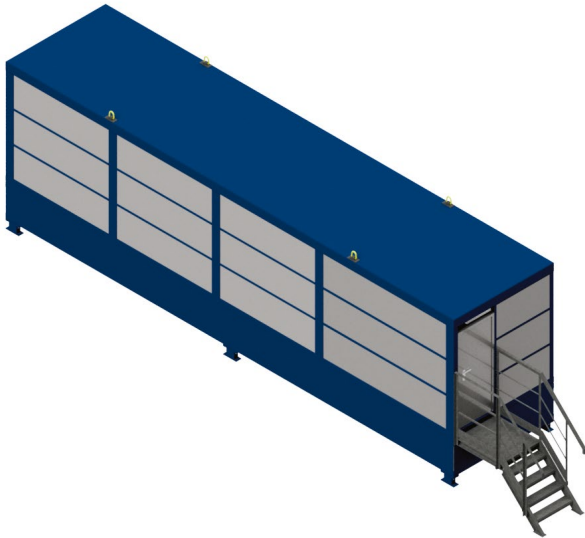
The control room of the OB-25 unit provides all necessary conditions for safe and comfortable operation of the personnel. An access card system is installed, along with air conditioning; video surveillance is optional. The cabin is furnished with all necessary furniture for convenient placement of operating staff and is fully equipped with control cabinets to house electrical and instrumentation equipment. The control system is based on Siemens SIMATIC S7-1500/ET200SP microcontrollers and includes a computer; if necessary, the computer can be placed in a separate room. Pump drives are controlled via frequency converters. The system supports remote management of technological processes through SCADA systems (operator workstation). Data exchange with external process control systems is carried out via the Modbus TCP protocol (Modbus RTU, OPC UA – optional). The control system automatically maintains pump performance according to the selected recipe.

The control system performs the following functions:

- Automatic control of the bitumen oxidation process according to the set modes defined in the technological regulations.
- Continuous monitoring of process parameters during bitumen oxidation, including temperature, pressure, level, and flow of feedstock, air, oxidized product, and recirculation streams.
- Control and monitoring of the main and auxiliary equipment of the unit, including the oxidation column, reactors, air feed compressor unit, product feed and recirculation pumps, heat exchangers, and heating systems.
- Monitoring of air supply parameters for oxidation (flow, pressure, temperature) to ensure process stability and uniformity along the height and volume of the reaction zone.
- Maintaining specified oxidation conditions (temperature, hydrodynamics, and gas dynamics) to achieve the required physicochemical properties of the product.
- Visualization of the status of all unit components on the operator’s automated workstation (AOW), including current parameters, equipment states, and alarms.
- Emergency and warning signaling (visual and audible) in case of deviations from permissible process parameters or abnormal situations.
- Automatic protection of technological equipment, implementing interlock algorithms and transitioning the unit to a safe state during emergency conditions.
- Archiving of events, alarms, and process parameters in chronological order for subsequent analysis; archived data can be displayed on the operator workstation as event logs and trend charts with configurable filters.
- Ensuring safe, stable, and continuous operation of the bitumen oxidation unit in accordance with technological regulations, industrial safety requirements, and operational reliability.

Main Technical Specifications of the ErichHahn OBP-25 Unit

Operating medium	Tar, bitumen, air, oxidation gases
Ambient temperature, °C	от -25 до +40
Product operating temperature, °C	up to 230 °C
Operating (gauge) pressure, MPa	0,005-0,3
Explosion and Fire Hazard Classification of the Production	
Explosion and Fire Hazard Category (SP 12.13130.2009)	BH (High fire and explosion hazard)
Explosion and fire hazard zone class (PUE)	П-III (Fire and explosion hazard zone class P-III)
Group of industrial processes by sanitary characteristics (SP 44.13330.2011)	1B, 2Г (Sanitary process groups 1V, 2G)
Category and group of explosive mixture	-
Substances determining the category and group of explosive mixtures	-
Electric power consumption	
Installed electric power, kW	650
Rated voltage, V	380
Frequency, Hz	50
Protection rating	
Protection rating of equipment located externally, minimum	IP54
Protection rating of equipment located in the automation and control unit, minimum	IP20
Heating	Thermal oil
Thermal insulation thickness of pipelines/tanks, mm	25/50/100
Weight of the unit in basic configuration, kg	200 000
Unit dimensions (L × W × H), m	40x30x19



Nitrogen supply unit OBP-25-NR (nitrogen ramp)

The nitrogen supply unit is a gas equipment assembly consisting of twenty-five gas cylinders, interconnecting pipelines, manifolds, and auxiliary equipment.

It is intended for supplying nitrogen to the oxidation column and the intensive oxidation unit in the event of an emergency exceedance of the oxygen concentration in the oxidation off-gases.



Oil waste unit OBP-25-OWU

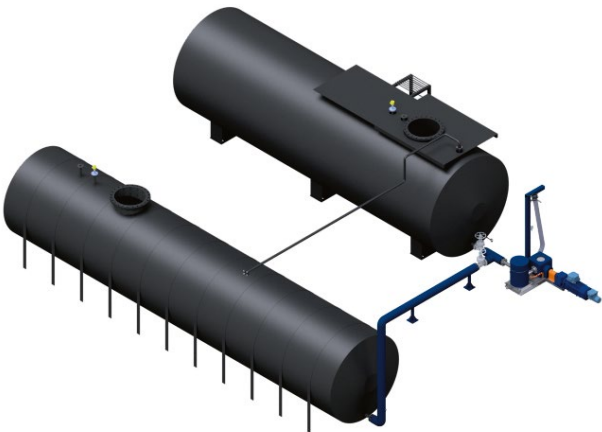
The Oil Waste Unit is designed for the organized handling, temporary accumulation, and safe storage of oil-containing liquids generated during the operation of the bitumen oxidation unit, including black solar oil, emergency discharges, and technological drainages.

The unit ensures localization of oil-containing liquids, prevention of uncontrolled spills, and their organized transfer to a storage system or for disposal in accordance with the approved technological and environmental scheme of the plant.

The Oil Waste Unit includes the following equipment:

Tank MHT-50.01	
Useful volume, m³	50
Orientation	Horizontal
Internal diameter, mm	2760
Overall length, mm	9600
Tank MHT-50.02	
Useful volume, m³	50
Orientation	Horizontal
Internal diameter, mm	2406
Overall length, mm	11 990
Pump Station HPS-30 EX	
Pump type	Gear pump
Rated capacity, m³/h	30
Safety relief valve	Provided
Filter type	Sieve
Sieve mesh size	8
Gear motor power, kW	11

1. Tank MHT-50.01 — intended for the accumulation and temporary storage of black solar oil generated in the off-gas cooling and separation system.
2. Tank MHT-50.02 — intended for receiving emergency discharges and technological drainages from equipment and pipelines during start-up, shutdown, and abnormal operating conditions.
3. Pump Station HPS-30 EX — intended for pumping oil-containing liquids from the tanks to the downstream storage system or for disposal.



Turkey

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