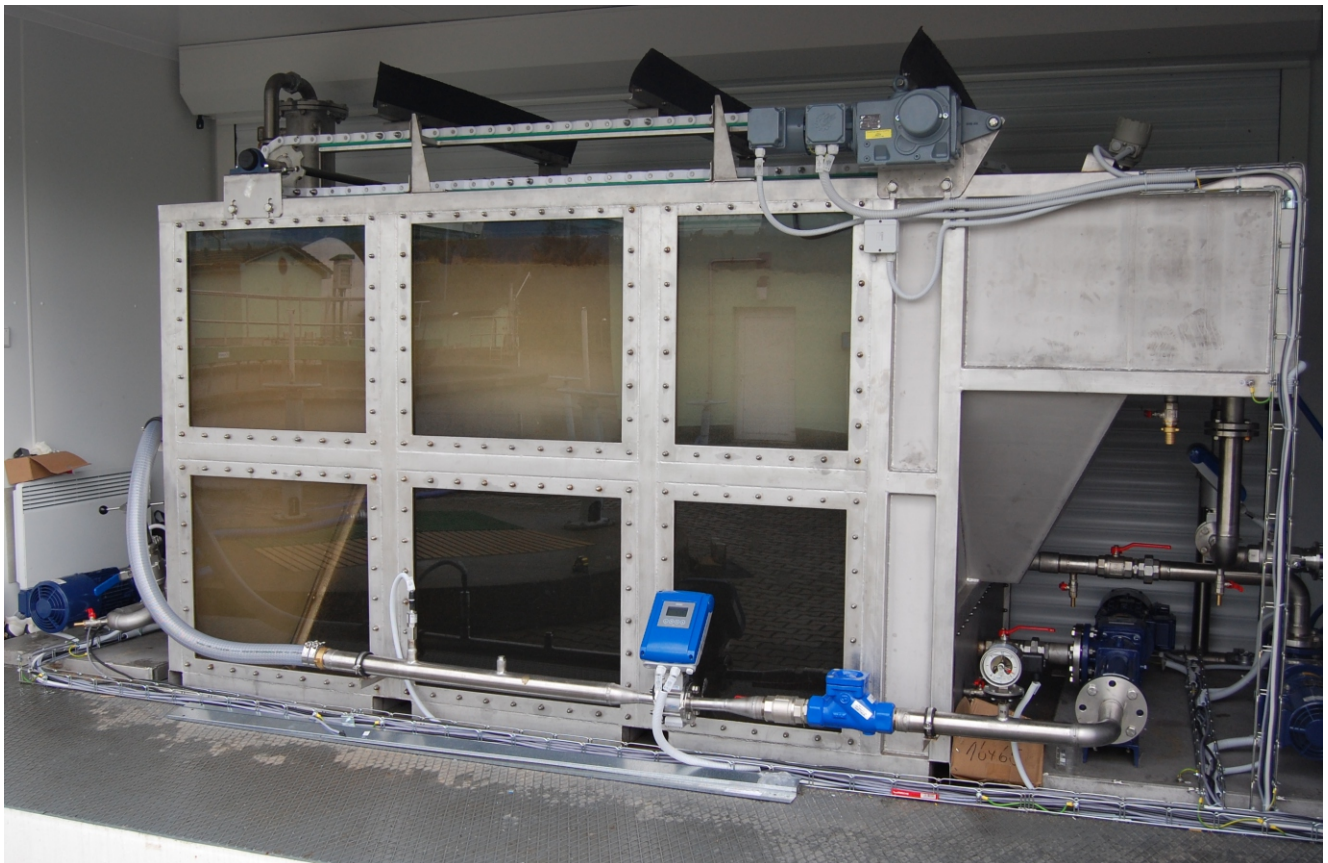


## MOBILE FLOTATION UNIT

### KUNST - i - FLOT



Mobile flotation unit was developed and manufactured as part of the project called "Innovative Approach towards Cleaning of Waste Water – KUNST Flotation Unit". This flotation unit helps verify and test the process of flotation in operating conditions of a given application. The separation of suspension in flotation unit is achieved by the DAF system (dissolved air flotation). All the equipment of the mobile flotation unit KUNST-i-FLOT is positioned in two separate technological containers. The flotation unit itself is located in one of the containers; device for dosing and mixing of coagulant/liquid flocculant is positioned in the other container.



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## MOBILE FLOTATION UNIT

# KUNST - i - FLOT

### Flotation

The complete flotation unit with a saturation circuit, equipment and a distribution board is located in the first, fully-functional container. The container is equipped with roll-up doors at both sides to facilitate easy access and work. The flotation process takes place in a stainless steel tank; one wall of the tank is made of see-through polycarbonate which allows for visual inspection of the ongoing processes. The tank contains an adjustable built-in fixture, a tank for separated sludge, and an adjustable excess outlet. Skimming devices, equipped with a frequency converter, and skimming blades serve for removal of the sludge into the sludge tank. Inlet screw pump with a flow rate of 0.8–5 m<sup>3</sup>/h pumps the inlet contaminated water into the flotation unit. Flow rate, temperature and amount of undissolved particles in the medium may be measured at the inlet pipe. The pipes of inlet water and saturation circuit are connected in front of the tank; cleaned sludge water from the outlet is saturated with air in the saturation circuit. A small compressor station supplies pressurized air. The screw pump with a flow rate of 0.2–1.6 m<sup>3</sup>/h pumps the separated sludge. Purified sludge water leaves the container using its natural gravity. The flowmeter and undissolved particles measuring are conducted at the outlet pipe.

The container further includes an electric distribution board that is responsible for automatic operations, including a remote access for monitoring and control of the process.

### Basic parameters:

Container dimensions (LxWxH): 6058 x 2990 x 2820 mm

Flotation unit volume: 5,25 m<sup>3</sup>

Flotation unit surface area: 3,75 m<sup>2</sup>

Connections: 3 fire hose couplings C52 for connection of DN50 hoses that are used for inlet of the contaminated water, outlet of the separated sludge, and outlet of the purified water

Electricity for the flotation unit container is supplied from a CEE 63A socket.

Contemporary power of the flotation unit is max. 6 kW.

Total contemporary power of the container including heating and lights is 8.2 kW.

### Coagulation

The other container contains a coagulant dosing station with a flow rate of 0.01–0.16 L/h including 60 L storage tank, two coagulation tanks with stirrers and an electric distribution board located in the container. The container further contains a portable submersible pump with a hose for pumping into the first 150 L coagulation tank for rapid mixing; coagulant is also dosed into the water here. Excess from the tank is lead to the second 900 L tank for slow mixing. Rotations of both stirrers are controlled by frequency converters.

### Basic parameters:

Container dimensions (LxWxH): 4000 x 2990 x 2500 mm

Connections: 1 fire hose coupling C52 on a slow-mixed tank for connection of a hose to the flotation unit pump

The electricity for the container is supplied using an extension cord from the flotation unit container.

Contemporary power of the coagulation unit is 0.8 kW.

Total contemporary power of the container including heating and lights is 3.0 kW

The above described pilot flotation unit design provides a “plug&play” installation to a WWTP or WTP. The installation itself requires only a hard paved and flat surface area, connection to power supply and connection of the inlet/outlet hoses. The unit has a remote access to a control system. The unit serves for acquisition of input information necessary for design of the flotation technology.

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