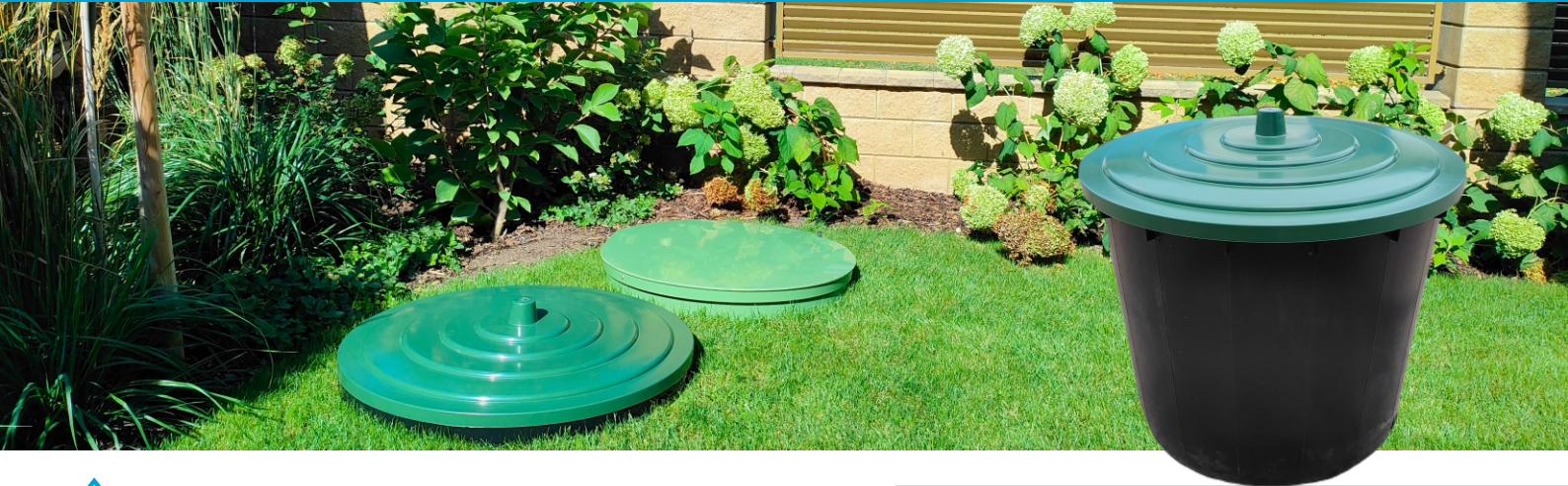


SLUDGE DEWATERING BOX



DESCRIPTION OF THE SLUDGE MANAGEMENT IN WWTP

Wastewater from households and especially toilets contains organic pollution which is removed in a biological way in a domestic wastewater treatment plant (WWTP). Treated water flows out of the plant and excess sludge remains in the plant as a product of biological treatment. At the same time, the better quality of treatment process is, the more sludge it produces. Therefore, each treatment plant must be regularly desludged, otherwise the sludge will start to flow down the drain with the treated water. The better quality domestic WWTPs, such as TOPAS, contain a separate area dedicated solely to sludge accumulation - the sludge tank. The sludge accumulated in the sludge tank is still in a liquid state and in a relatively large volume making it difficult to handle and dispose of. TopolWater launches on the market a patent-protected method of sludge dewatering where sludge can be removed with an inserted jute bag or shoveled and transported to compost.

GRAND PRIX

We got an award at the For Arch trade fair
GRAND PRIX 2022
for WWTP TOPAS with the dewatering box



MAIN ADVANTAGES OF THE SLUDGE DEWATERING BOXES

- + No more worrying about and paying for fecal truck calls to unclog the plant!
- + No more running around the plant with pumps and hoses to pump out the plant with your own hands!
- + No more drying puddles in your yard after a desludging!



ADVANTAGES OF THE SLUDGE DEWATERING BOXES

- + With a typical family of five producing about 8 kg of sludge per month, the **storage capacity** of the sludge in the dewatering box is **more than one year**.
- + The sludge dewatering box can also be **retrofitted to any TOPAS treatment plant** because even plants manufactured many years ago always had a separate sludge tank.
- The sludge dewatering box is inexpensive** and can be installed by anyone without special tools according to the instructions for each type of TOPAS WWTP.



Dewatering box in operation

More than 30 years of experience!



TYPES OF THE SLUDGE DEWATERING BOXES

- + **STANDARD** - the separate box that can be used for any WWTP with manual pumping using a pump
- + **SET MANUAL** - the box for WWTP TOPAS with manual filling - manual filling by switching on the retrofitted air-lift pump
- + **SET AUTOMAT** - the box for WWTP TOPAS with automatic filling - filling by automatic switching of the electrovalve by means of a control unit supplying air to the retrofitted air-lift pump



PROCESS OF SLUDGE MOVEMENT IN THE TREATMENT PLANT AND SLUDGE HANDLING

- + The excess sludge is automatically pumped from the activation section into the sludge tank at a concentration of approximately **cca 8-10 kg/m³**.
- + The sludge is gradually thickened by mixing to **about 35 kg/ m³** and accumulated in the sludge tank.
- + Depending on the need, the thickened sludge is either pumped out automatically after 2-3 weeks or **once every 3 months** with the air-lift pump from the sludge tank into the dewatering box.
- + The excess water leaks through the fabric and the permeable interbottom back into the accumulation tank and the sludge is thickened to a **thickened state (in about 20 days)**.
- + After filling the box with dewatered sludge, it can either be removed with the inserted jute bag or removed with a shovel and transported to the compost heap where it will be finally decomposed and sanitized.
- + The sludge dewatering box has a volume of 0.5 m³ and will be thickened to 200 - 250 kg/m³, which represents the storage of 100 to 125 kg of sludge. For a treatment plant for 4 to 5 inhabitants the calculated sludge production is about 7 to 9 kg per month. At an average of 112 kg / 8 kg per month, **the capacity is based on 14 months**.



Dewatered sludge in the riparian state



INSTALLATION AND FUNCTION DESCRIPTION OF THE SLUDGE DEWATERING BOX

The dewatering box shall be installed in the ground in the immediate vicinity of the plant, preferably on the side where the sludge tank is located. It is self-supporting and fitted with a cover. The outlet of filtered water from the interbottom shall be connected back to the inflow tank of the plant. An air-lift pump is installed in the sludge tank. The discharge of this excess sludge air-lift pump is located under the cover of the box and the air at the air-lift pump is connected to the air inlet for aeration of the sludge tank. The air inlet is equipped with a manual aquarium valve and in the automatic version with an electrovalve. When the valve is opened the air-lift pump starts working and pumping the sludge out of the sludge tank to a level of about 60 cm from the bottom which takes about 20 minutes. Once the sludge has been pumped out the air supply is closed. Further sludge pumping is carried out either automatically or manually as required. The bioreactor of the plant is desludged into the sludge tank automatically.

