

Press release

BIBKO® INFRA TEC - Recycling systems for confined spaces and small quantities of waste Site selection using existing buildings, structures and conditions

The recycling of waste produced during the cleaning of drains, pipes and sewers at the company's own site is gaining in importance for more and more companies. The reduction of the disposal volume, the reduction of the allocation value and the resulting reduced disposal costs play a central role.



Initial situation: Existing concrete basin at customer's site

In addition to reducing disposal costs, the purchase of a recycling system can also be a component of sustainable site development. Here, for example, an appropriate zoning of use and an optimal utilisation of the available space are of great importance. In addition, the increasing demands on traffic safety and occupational health and safety require regulations on the company's traffic areas.

Use of existing conditions

Regardless of whether only a concept for a recycling system is planned or an overall concept for sustainable site development, it is always necessary to include existing buildings, structures and conditions in the considerations. These include, for example, terrain jumps, depressions, existing basins, etc.

The question arises to what extent these can be integrated into the concept and further utilised.

Conception of the recycling system

The conception of a recycling system is based on three criteria:



Waste characteristics

- Which material is recycled?
- What is the composition of the material?



Amount of waste

- What quantity is recycled?
- How is the material fed in?



Recycling quality

- What recycling quality is to be achieved?

Based on these design criteria, the first step is to design the recycling machine as the central component. This involves selecting the appropriate recycling machine and the necessary additional components on the basis of the quantity of waste, the type of waste fed and the desired recycling quality. The next step is the design of further components of the recycling system.



Final situation: Vehicle being rinsed at the recycling system

Adaptation to local conditions

As soon as the conception of the recycling system is completed, the next project step is to check the possible integration of the plant components into the existing buildings, structures and conditions.

Space constraints – waste quantities

The modular system concept of the **BIBKO® INFRA TEC** portfolio offers an ideal starting point for this. This applies in particular when *space is limited* and the *waste quantities* involved tend to be *small*.

Project example

The following project example shows a realised recycling system based on the following parameters:

Material	from sewer cleaning septic tanks
Waste quantity _{max.}	approx. 15 t/h
Material feed	steady
Conditions	Hall with recess in the floor available



Initial situation: Existing hall with recess

Task/ machine selection

As a hall with a recess in the ground already existed on the customer side, this location was to be used for the recycling system.

The existing hall allows the system to be operated without problems even in winter.

For the recycling system, a 2-chamber recycling machine of the type IT-4000/2 with a mechanical capacity of approx. 20 t/h and a screw conveyor of the type IT-WDF-6 as material discharge was planned. The design of the recycling system was adapted accordingly so that a lowered installation in the existing recess was possible. This enables optimum emptying of the vehicles into a feed hopper. From there, the material is fed into the recycling system, where the actual recycling process takes place.



Final situation: Recycling system with material discharge

The recycling system consists of a 4 m long machine trough divided into two (washing) chambers. First, the material enters the 2.2 m long pre-washing chamber of the recycling system. This contains a water bath. In a wet-mechanical recycling process, a rotating spiral conveys the material through the water bath and segregates it. At the same time, water flows through the chamber in countercurrent. The organic and mineral components $\leq 250 \mu\text{m}$ are washed out and discharged together with the excess process water via an outlet channel.

The mineral components >250 µm remaining in the system are removed from the pre-washing chamber via a bucket elevator and fed into the main washing chamber. There, similar to the pre-washing chamber, the main washing process takes place, in which the material is again mechanically conveyed through a water bath. In order to achieve an optimal washing result, water flows through the chamber in countercurrent.



Recycling system in operation

A second bucket elevator removes the washed material from the main washing chamber and feeds it to the screw conveyor. This conveyor dewateres the material and conveys it to the material box. The material is then available to be reused.



Recycled material

Summary

The modular machine concept of the **BIBKO® INFRA^{TEC}** portfolio offers the following advantages:

- Machine capacity - individual adjustment of the recycling capacity (t/h) to the project-specific waste quantities
- Machine design - individual adaptation of the structural design (dimensions) to the local conditions

This great flexibility makes it possible to develop individual and economical solution concepts for the customer. This applies to recycling systems without process water treatment as well as to complete systems with fines separation, sludge thickening and chamber filter press/ decanter centrifuge for treatment of the resulting process water.