

Press release

BIBKO® INFRA^{TEC} - System reduces disposal costs

Beck Kanalreinigungs-GmbH in Gomaringen invests in new recycling system for waste from sewer cleaning

In 2019 company Beck-Kanalreinigungs-GmbH moved its headquarters from Rottenburg am Neckar to Gomaringen in order to process waste from road construction, sewer cleaning and industry on the new company premises. In this connection, the company **BIBKO®**, business division **INFRA^{TEC}**, got the order to supply a new recycling system for the waste produced from sewer cleaning (waste code 200306). This system has now been put into operation.

Initial situation and objectives

Before the new recycling system was installed, the collected waste was disposed in accordance with the legal requirements. As this is waste with a corresponding organic content, it was disposed in landfills of landfill classes DK I and DK II.

The objective for the new recycling system was to reduce the organic fraction to such an extent that disposal in a landfill of landfill class DK 0 (low contaminated, mineral waste) is possible. As a result, the landfill costs for the recycled material are significantly reduced or eliminated completely.

The quantities of waste to be processed vary depending on the sewer cleaning jobs carried out. A maximum quantity of 7.5 m³ was defined as the maximum quantity that is fed into the system intermittently and has to be processed. This consists of approx. 20% water and 80% solid matter (including mineral components).

In addition to the quantities to be processed, the composition of the waste also varies. The cellulose fibres contained in the waste (e.g. hygiene articles, cotton wool, dressing materials) pose a particular challenge.

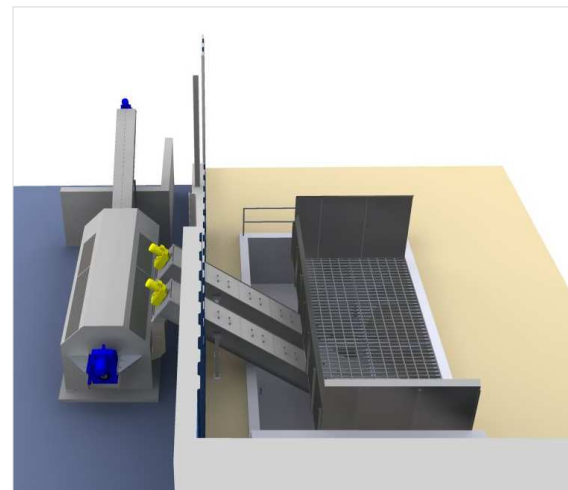
For this purpose, the system should be designed in such a way that strong adhesions in the system are prevented and the function of the system is fully guaranteed.

The recycling system is fed on the one hand by emptying the company's own sewer cleaning vehicles and on the other hand by emptying waste skips.



Material feed by sewer cleaning vehicle

The location for the system was given by an existing concrete basin with the dimensions 8 m x 4.5 m - 1.6 m deep in the outside area.



System layout

BIBKO® INFRA^{TEC} - Solution

A **BIBKO®** recycling system was planned for the recycling of waste from sewer cleaning. In a wet-mechanical process the material is de-mixed in the system and additionally washed with water.

In order to ensure a constantly high washing quality despite the intermittent material feed of 7.5 m³, the material feed and the actual washing process were separated. The emptying of the vehicles as well as the waste skips is first of all carried out in a feeding bunker, which was provided in the existing concrete basin. From this, the material is continuously fed into the recycling system.



Feeding bunker

The recycling system is located in a hall and thus enables trouble-free operation even in winter.

A hopper construction with a feed area of 7.4 m x 3.3 m and a buffer volume of approx. 9 m³ serves as the feed bunker. The material is fed into the recycling system via a duplex screw conveyor with a screw diameter of 600 mm and a conveying capacity of 12 m³/h each.



Material feed by waste skip

A large-mesh grating in the area of the feeding area prevents larger pieces of material from entering the system on the one hand, and on

the other hand it complies with the UVV regulations.

The actual washing process takes place in the BIBKO® recycling system. This system consists of a 5 m long machine trough which is divided into two (washing) chambers.

First, the material is fed from the two screws of the duplex screw conveyor into the 3.5 m long pre-wash chamber of the recycling system. In this there is a water bath. A rotating spiral conveys the material through the water bath and de-mixes it. At the same time, the chamber is flushed with washing water using the countercurrent principle. The organic components are washed out and discharged together with the excess washing water. While this process step is often followed by water treatment to produce clear water, this was not required here. In this case, the washing water can instead be discharged directly into the clarification plant, in consultation with the lower water authority.



BIBKO®-Recycling system

The pre-washed material is removed from the pre-washing chamber via a bucket elevator and fed into the main washing chamber. There, similar to the pre-wash chamber, the main washing process takes place, in which the material is again mechanically conveyed through a water bath. In order to achieve an optimum washing result, the chamber is also flowed through with washing water in a counter-current principle.

A second bucket elevator takes the washed material from the main washing chamber and feeds it to the spiral conveyor. The material is dewatered via this conveyor and transported into the material box.



Materialbox with washed material

Additional washing nozzles can be activated along the entire process so that the washing process can be individually adapted to the material to be processed. This ensures the washing quality at any time. A rinsing beam mounted on the recycling system can also be used to rinse the entire system manually or automatically and remove build-up (including cellulose fibres). The installed SPS control system allows a simple adjustment of the washing and rinsing times and thus a reduced consumption of resources.

Result

With the decision to use a **BIBKO® INFRA7EC** recycling system, Beck Kanalreinigungs-GmbH has made a trend-setting decision. In future, waste from sewer cleaning will be processed in such a way that the material can be disposed of much more economically. This saves money and makes the purchase of a **BIBKO® INFRA7EC** recycling system a profitable investment.