Press release

BIBKO® INFRA*TEC* - Innovative recycling system with dose buffer for small quantities

Reduced waiting and downtimes - stationary and mobile

Mineral waste such as sewer flushing waste, drilling fluid, sand trap waste or road sweepings can be processed using appropriate methods and reused as secondary raw materials in accordance with the Substitute Building Materials Ordinance. This conserves natural resources and reduces the consumption of landfill space.

One method is wet mechanical recycling. In this process, the waste is cleaned in a water bath and separated into its components, such as sand, gravel and organic components. Depending on its condition and pollutant content, the recycled minerals can then be reused.

Mineral waste (left) becomes substitute building material (right)

Objective

The recycling process has the following objectives:

- Reduction of waste volume by separating out the water content
- Recovery of the mineral components for reuse
- Reduction of the proportion of organic components

This objective leads either to a reduction in disposal costs or, ideally, to a building material that has been tested for suitability.

Recycling system IT-1500/1_BW-TR

Direct and indirect recycling

Direct and indirect recycling differ in that in *direct* recycling, the (flushing) vehicle empties the collected waste (solid and liquid components) directly into the recycling machine for processing.

Direct recycling

In *indirect* recycling, the collected waste is first emptied from the vehicle, stored and only fed into the recycling machine at a later stage. This adds an additional step to the processing.

Indirect recycling - Why?

In industrial processes, attempts are usually made to avoid additional work or process steps. Nevertheless, indirect recycling can make sense under certain conditions.
In order to be able to empty vehicles directly, the recycling machine must be designed for the volume flow resulting from emptying. This means that a large recycling capacity is required for a relatively short period of time. However, if the total annual waste volume is relatively low, the recycling machine would be oversized. Compared to a smaller recycling machine, this results in higher acquisition and operating costs.

Waiting and downtime

In smaller recycling machines, the problem with both *direct* and *indirect* recycling is to feed the waste evenly into the recycling plant via the feed hopper. Depending on the composition, the feed must be supported by manual rinsing of the hopper to ensure optimum material feed.

Direct recycling - Recycling machine 4 m³/h

In a recycling machine with a recycling capacity of 4 m³/h, this means that 1 m³ of waste must be fed in evenly within 15 minutes. This leads to corresponding waiting and downtimes.

Dose buffer to reduce waiting and downtimes

In order to reduce these downtimes, the existing IT-1500/1_BW-TR recycling machine with a recycling capacity of 4 m³/h has been further developed and supplemented with a dose buffer.

Recycling process with dose buffer

After the recycling system has been started via the new-start button, the waste is fed into the dose buffer. Feeding can be carried out either via a front end loader (indirect recycling) or directly from the vehicle (direct recycling). When feeding directly from the vehicle, the system is usually installed in a lowered position.

Recycling system with dose buffer

The waste is first buffered in the dose buffer and then continuously fed into the recycling machine. Excess water runs directly from the dose buffer into the recycling machine via a free gradient.
In the recycling machine, the waste enters the washing chamber. This contains a water bath. A rotating spiral conveys the waste through the water bath and separates it. At the same time, water flows through the chamber in a counter-current principle. This washes out unwanted components ≤250 µm, which are then discharged from the recycling machine together with the excess process water.

A bucket elevator removes the washed material >250 µm from the washing chamber and feeds it to a vibrating chute. The material is dewatered and discharged via this vibrating chute.

Recycled material after the recycling process

Mobile system - maximum flexibility

If the recycling system is to be used at different locations, it can also be supplied as a mobile version. For this purpose, the recycling system is mounted on a subframe for roll-off vehicles in accordance with DIN 30722.

Subframe for roll-off vehicles
in accordance with DIN 30722
Source: Sirch GmbH & Co. KG

Complete mechanical and electrical preassembly results in a ready-to-connect unit with the following interfaces:

- Elektrical - on the system side:
  CEE-plug 16 A
- Mechanical - on the system side:
  2"-connection for water

Within a very short time the system can therefore be relocated and used again.

Recycling machine with dose buffer as a mobile system - with subframe according to DIN 30722

Summary

The innovative BIBKO® INFRA*TEC* -recycling machine type IT-1500/1_BW-TR in combination with a dose buffer provides a system that combines the advantages of a recycling machine for small quantities with the advantages of a dose buffer:

- The IT-1500/1_-BW-TR recycling machine has a mechanical capacity of 4 m³/h, making it ideal for small quantities of waste.
- The additional dose buffer enables vehicles to be emptied quickly and intermittently, thus reducing waiting and downtimes.

<u>Additional features:</u>

- Economical solution for small quantities
- High degree of dewatering of the recycled material thanks to dewatering screen as material discharge
- Compact design and therefore low space requirement

Due to the features described above, the IT-1500/1_BW-TR recycling machine in combination with a dose buffer is therefore an ideal solution for the problems of *volume reduction,* low *waste quantities* and reduced *waiting and downtimes*.
If required, the recycling system can be supplemented with additional system components such as fine particle separation, chamber filter press or decanter centrifuge for the treatment of the process water.

Further information
The following QR-Code will take you to the BIBKO® INFRA*TEC* - YouTube-channel.

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