HUBER TECHNOLOGY
WASTE WATER Solutions

Grit Separation and Treatment

The optimally suitable system for any application!

Our comprehensive product range offers you **the best solution for any grit separation application** , with longitudinal or circular grit traps and also by means of complete plants for complete mechanical wastewater treatment in a single and compact unit.

Based on our wide ranging experience and expertise, HUBER Engineers will design your **customised, complete grit treatment system** for your specific needs. All grit treatment process steps can be reliably fulfilled by state-of-the-art HUBER equipment.

Systems

- Longitudinal Grit Traps
- Circular Grit Traps
- Complete Plants
- Grit Classifiers
- Grit Washing Plants
- System Components
- Grit Feeding Arrangement

- Grit Treatment Systems

Grit Separation

For reasons of operating reliability of wastewater treatment plants it is necessary to separate the grit transported with the wastewater and other mineral materials from the digestable organic material. Separation of grit, gravel and other mineral matter is required to increase the reliability of wastewater treatment plant operation.

Good grit separation prevents operational problems, such as grit sedimentation in aeration tanks and digestors, reduces wear of equipment, such as pumps or sludge dewatering plants, and avoids clogging of sludge hoppers and sludge lines.

While as much as possible of the mineral matter should be removed, as much organic matter as possible should remain in the wastewater. Testing of the grit capture rate is usually done with a grit particle size of 0.2 mm. In combined sewer systems, approximately 60 l of grit can be removed from 1,000 m^3 of wastewater.

The most common grit separating systems in use are grit channels, circular grit traps and vortex grit traps. Grit is either separated by gravity sedimentation (grit channels) or centrifugal force (circular and vortex grit traps).

Grit treatment

Grit and mineral material from wastewater treatment plants or sewer and road cleaning is very variable and can either be more or less contaminated with organic particles or other foreign matter similar to domestic waste. Such contamination with in the heterogeneous mixture results in a relatively low dry residue content [DR], ranging between 40 % and 70 %, and in a relatively high loss on ignition [GV] in the range of 10-80 %. The purpose of a well performing grit treatment system is removal of grit up to 0.20 mm grain size and subsequent separation of the valuable recyclable grit and mineral fraction from the contamination material.

The end product of grit treatment should be regarded as a valuable product with a low loss on ignition (< 3 %) and a high DR (> 90 %). Grit treatment thus reduces both the disposal costs whilst providing a secondary raw material as a by product which can be reused and recycled.

As the composition of the polluted grit to be treated can vary greatly, depending on its source of production, the decision on which is the best suited treatment system is the deciding factor at the concept planning of a treatment plant.

Treatment of grit from wastewater treatment plants

If the grit to be treated is material from the grit trap of a wastewater treatment plant, the best worldwide proven solution is the HUBER Grit Washing Plant. The HUBER Grit Washing Plant ensures that the organics within the grit are washed out to such a degree that the treated grit has a loss on ignition of below 3 %, which allows low-cost grit disposal or direct reuse of the resultant grit.
Many countries meanwhile also have legislation in place that defines the requirements for washed grit. In practice however, not only the effective separation of organic and mineral material is decisive, but also the retention of fine grit. The HUBER Grit Washing Plant takes this fact into account.

Treatment of grit from sewers and road refuse

Grit from sewers or road pits or road refuse requires individually designed grit treatment systems. Depending on the system capacity, input material composition, requested material output, etc., the treatment technology has to be tailored to meet these specific requirements such as the following main process steps: acceptance tank, foreign matter separation, wash drum for preclassification, grit washing plant for separation of organic material.
If the external supply and treatment of the wash water required for grit treatment cannot be provided, an additional wash water treatment unit can be offered as an option for recycling of the water necessary.
On the basis of its wealth of worldwide experience in developing complete grit treatment systems, HUBER is able to provide a tailored concept for each individual grit treatment project.

Downloads

- Overview brochure grit separation [pdf, 0.96 MB]
- Overview brochure grit treatment [pdf, 1.32 MB]

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