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## [Ideal synergies of ecology and economy: smart HUBER solutions for grit processing in the waste management industry](#)

Sand and water, as the most important components for concrete production, are a basis of modern society. Due to the growing world population and the ongoing construction boom, both resources are becoming increasingly scarce. Smart solutions from HUBER are designed to remedy this by exploiting synergies of ecology and economy, thus promoting sustainable grit processing in the disposal industry. Intelligent and efficient products and solutions for grit processing not only in industrial plants include the HUBER Grit Treatment Process RoSF5, with the HUBER Horizontal Grit Dosing Screw RoSF7, the HUBER Wash Drum RoSF9 and the HUBER Coanda Grit Washer RoSF4.

### [The HUBER Grit Treatment Process RoSF5](#)

The HUBER Grit Treatment Process RoSF5 is the solution for processing grit, mineral waste and wastewater into reusable fractions. Especially the low operating costs and low maintenance requirements of the HUBER machine technology are decisive for the efficient treatment of the input material and thus also for waste management companies to plan economically. In addition, HUBER technology ensures a consistently high quality of the components to be recycled. This in turn provides the disposal company with planning security and can lead to competitive advantages.



*HUBER Horizontal grit dosing screw RoSF7 with coarse material separator*

### [Used by waste management companies: intelligent HUBER solutions in practice](#)

Hammerer Kanalservice GmbH, based in Wackersdorf, Germany, and HP Enders Umweltservice GmbH, based in Föhren, Rhineland-Palatinate, Germany, have recognised the advantages of HUBER products and solutions: both waste management companies have met the steadily growing customer demands for a receiving station for grit from municipal wastewater treatment plants, industrial grit chambers and sewer flushing by taking a HUBER Grit Treatment Process RoSF5 into operation.

Hammerer Kanalservice GmbH can accept up to 20 tonnes of raw material per day, process it and sell it profitably on the raw materials

market. The processing plant of the waste management company HP Enders Umweltservice is designed for a solid material volume of 1 m<sup>3</sup>/h. Thanks to HUBER's treatment technology, HP Enders was able to immediately accept the sewer flushing material produced during last year's flood disaster and to make an essential contribution to the restoration of the sewer system.

### Acceptance of the liquid and solid phase in the receiving bunker of the HUBER Grit Dosing Screw RoSF7

The first step of the process is the discharge of the liquid phase from the tanker vehicles. For this purpose, the operator connects the vehicle via the hose directly to the provided Perrot connection. With the HUBER system, the liquid phase can be reused and recirculated as service water. Cost-intensive fresh water supply is therefore not necessary for the operation of the plant. This is a significant advantage because, compared to municipal wastewater treatment plants, the process water in industrial companies is not available in sufficient quantities and quality and not without additional costs.

At the wastewater treatment company HP Enders, the solids are fed directly via the tanker truck into the receiving bunker of the HUBER Grit Dosing Screw RoSF7. Due to the situation on site at Hammerer, the grit as well as the mineral and organic waste is fed from the dewatering site to the HUBER reception bunker by wheel loader. In general, HUBER designs the receiving area according to customer specifications. Alternatively, a crane can be used to feed the waste into the HUBER reception bunker.

### Use of HUBER Grit Screw RoSF7 and HUBER Wash Drum RoSF9: separation and washing of coarse material

The HUBER Grit Dosing Screw RoSF7 integrated in the receiving bunker feeds the material fully automatically into the HUBER Wash Drum RoSF9. In the wash drum, the fraction < 10 mm is washed out by homogenisation. Coarse material > 10 mm is separated by the inclined screening drum, statically dewatered and discharged into the customer's bin. In addition, a magnet is provided for the separation of metals. Both operators dispose of the coarse materials, and the metals are sold after pre-sorting.

### Classification, washing and dewatering of the grit in the HUBER Coanda Grit Washing Plant RoSF4

In the next process step, the HUBER Coanda Grit Washing Plant is used. The grit, organic and water mixture (fraction < 10 mm) is fed into the plant via the Coanda tulip with upstream vortex chamber. The flow, which is set into strong rotation by the vortex chamber, is deflected from the vertical into the horizontal direction at the curved surface of the Coanda tulip due to the Coanda effect that occurs and is fed evenly into the container.

The solids contained in the flow (grit particles, organic material) are then separated due to the flow diversion combined with flow velocity reduction, dependent upon the particle settling velocity, and sink down to the bottom area of the tank.

There, the organic and mineral components are separated. Due to a defined introduction of upwardly directed service water the grit in the lower part of the HUBER Coanda Grit Washing Plant RoSF4 will be fluidised in the upflow, i.e. a locally defined grit fluidised bed is created. Within this fluidised bed the lighter organic particles are separated from the dense grit particles, independent of the particle size. The mineral fraction is then statically dewatered via the discharge screw and can be profitably sold by both companies to the construction industry.

### Organic and fine grit separation with the HUBER Compact Plant ROTAMAT® Ro5

The effluent from the HUBER Coanda Grit Washing Plant RoSF4 is then treated in the multifunctional HUBER Complete Plant ROTAMAT® Ro5. Here, the organic and fine grit components are separated from the water stream in a grit channel in only one process step. Both the organic material and the fine grit < 0.2 mm are in turn dewatered and discharged by separate discharge screws. The fine grit is used, for example, in the recultivation or backfilling of pits in opencast mining and can thus be sold at a profit, while the organic components can be used in biogas plants.

### Sustainable internal water recycling for further reduction of operating costs: effluent from the HUBER Complete Plant ROTAMAT® Ro5 supplying the Wash Drum RoSF9

The quality of the effluent from the HUBER Complete Plant ROTAMAT® Ro5 is so good that it can be used directly as wash water supply for the HUBER Wash Drum RoSF9. The remaining wastewater is treated to clear water by the HUBER Dissolved Air Flotation Plant HDF at the end of the process. This clear water is reused as internal process water for the Grit Washer and the Complete Plant. In addition, Hammerer uses the clear water to refuel its suction vehicles. The disinfection plant ensures that the water is free of germs.

The internal and external use of clear water reduces operating costs to a minimum, as the cost-intensive supply of fresh water can be dispensed with and, in addition, no wastewater subject to charges is produced. Furthermore, no additional compressed air is required for the saturation system of the HUBER Dissolved Air Flotation Plant HDF, which is another positive influence on the operating costs of the overall plant. Dissolved Air Flotation sludge is dewatered mechanically.

### The HUBER Grit Treatment Process RoSF5: smart, efficient, sustainable and economical

The HP Enders and Hammerer project examples show that the turnkey HUBER Grit Treatment Process RoSF5 is the smart, efficient and sustainable solution for an adaptive system for grit treatment that guarantees a consistently high quality of the recyclable fractions and also saves operating costs. This technologically sophisticated process for grit treatment by HUBER makes an important contribution to the efficient use of resources – and has the nice side effect of being economical.



*HUBER Wash Drum RoSF9*

**Related Products:**

- [HUBER Grit Treatment System RoSF 5](#)
- [HUBER Horizontal grit dosing screw RoSF7 with tank followed by a wash drum](#)
- [HUBER Wash Drum RoSF9](#)
- [HUBER Coanda Grit Washing Plant RoSF4](#)

**Related Solutions:**

- [HUBER Solutions for Mineral Waste Utilization](#)

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