

HUBER Grit Treatment Systems



- Well-proven technology
- High separation efficiency
- High minerals yield
- Reduced disposal costs

➤ 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 within 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 Coanda Grit Washer. The HUBER Coanda Grit Washer 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 pre-classification, HUBER Coanda Grit Washer 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.



➤➤ HUBER Coanda Grit Classifier RoSF3

- High grit removal efficiency due to the Coanda effect
- Partly reduced organic content of the grit
- Grit removal screw supported on both ends for minimised wear
- Encapsulated, odour-free plant
- High corrosion protection
- Option of frost-proof design down to -25°C
- Fully automatic electrical control



HUBER Coanda Grit Classifier RoSF3 installed subsequent to a grit channel

➤➤ HUBER Coanda Grit Washer RoSF4

- No additional preceding screening required
- High grit and gravel yield
- Suitable for treatment of grit from sewers, gully waste, road sweepings
- Unit sizes available for up to 3 m^3 solids per hour
- Separate organics discharge allows for separate further treatment of organics
- Large diameter screws for a high solids throughput
- More than 2000 installations worldwide



HUBER Coanda Grit Washer RoSF4 for improved hygiene and reduction of disposal costs

➤➤ HUBER Grit Washer RoSF4 T

- Treatment of partly dewatered grit from wastewater treatment plants
- Unit sizes available for up to 3.0 m^3 solids per hour
- Organic content reduction to $< 3\%$ loss on ignition
- Dewatering of washed grit to approx. 90% DR
- For installation subsequent to grit classifiers, complete plants, circular grit traps
- Grit removal screw supported on both ends
- High corrosion protection



The HUBER Grit Washer RoSF4 T washes any grit

➤➤ HUBER Grit Treatment System RoSF5 VW(S)

- Raw material feeding with a vertical screw
- Ideal for sewer grit
- Less than 3 % organic content in the grit/gravel fraction
- Reduced disposal volume and costs
- > 95 % capture rate of 0.20 – 0.25 mm diameter grit particles
- Coarse material separation size of 10 mm
- Allows for reuse of mineral material



Wash Drum and Grit Washer installed in the customer's building

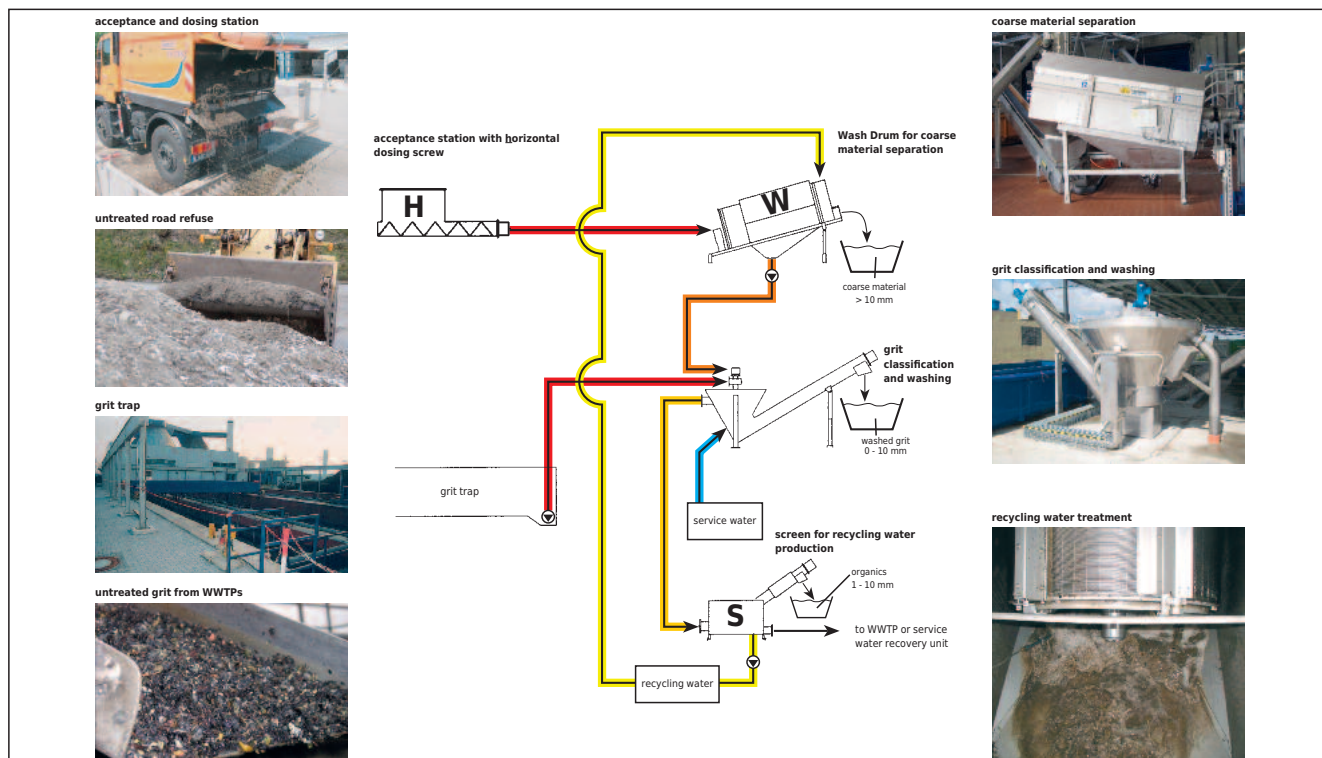
➤➤ HUBER Grit Treatment System RoSF5 HW(S)

- Raw material feeding with a horizontal screw
- Ideal for road sweepings
- Less than 3 % organic content in the grit/gravel fraction
- Reduced disposal volume and costs
- > 95 % capture rate of 0.20 – 0.25 mm diameter grit particles
- Coarse material separation size of 10 mm, i.e road gravel is contained within the grit fraction and not in the residue!
- Allows for reuse of mineral material



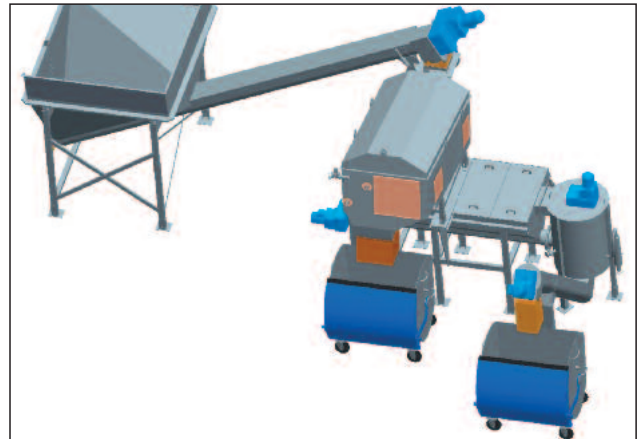
Acceptance tank for above-ground or underground installation

➤➤ Flow diagram of a RoSF5 HWS installation example



➤➤ HUBER Grit Treatment System RoSF5 COMPACT

- Small footprint
- Compact grit treatment plant for
 - classification and washing of grit from WWTPs
 - cleaning of sewer grit and road sweepings
- Up to 1.5 m³/h throughput capacity
- Low water demand
- Optimal coarse material separation size of 10 mm
- Reduction of organics to < 3% loss on ignition
- Reuse of road gritting material
- High minerals yield
- Completely encased unit



Schematic drawing of a compact grit treatment unit

➤➤ HUBER Grit Treatment System RoSF5 HP

- Massive inclined vibrating bar grate
- Processing of liquid and solid phase
- Up to 50 m distance possible between the tank and Grit Washer
- With the Coanda Grit Washer as main component
- Reduction of organics in the grit/gravel fraction to < 3 % loss on ignition
- Reduced disposal costs
- > 95 % capture rate of 0.20 – 0.25 mm diameter grit particles
- Coarse material separation size of 35 mm



Acceptance tank of the RoSF5 HP system

➤➤ HUBER Grit Treatment System RoSF5 VR

- Coarse material separation size of 35 mm with a grate separator
- With the Coanda Grit Washer as main component
- Reduction of organics in the grit/gravel fraction to < 3 % loss on ignition
- Reduced disposal costs
- Maximum minerals yield
- > 95 % capture rate of 0.20 – 0.25 mm diameter grit particles



Effective separation with the RoSF5 VR system

➤ Installation Examples



The RoSF5 HP system allows for long distances between the tank and Grit Washer.



Innovative technology: HUBER Coanda Grit Washer RoSF4 size III, heated plant for outdoor installation



Small HUBER Grit Washer RosF4 TC washing classified grit from a HUBER Complete Plant ROTAMAT® Ro5



Sewer grit treated with the RoSF5 VWS system is recycling material.



RoSF5 HWS system:
 Acceptance tank with horizontal dosing screw



HUBER Coanda Grit Classifier RoSF3 installation

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