

Pelleting of municipal and industrial sewage sludge

Pelleted sewage sludge is demanded more and more frequently in tenders, as the subsequent treatment of a compacted, dustless final product is more efficient. This applies to the transport, the use as cover material in agriculture, or the thermal utilisation.

For pelleting the sewage sludge which is pre-treated in whatever manner, a solids content of 60 to 95 % is required. This content is achieved by means of dehydration and subsequent thermal drying or by a combination of both processing steps. The pre-treatment of the sewage sludge in a digestion tower has a positive effect on the capacity of the pelleting press as well as the wear of the pan grinder rollers and die.

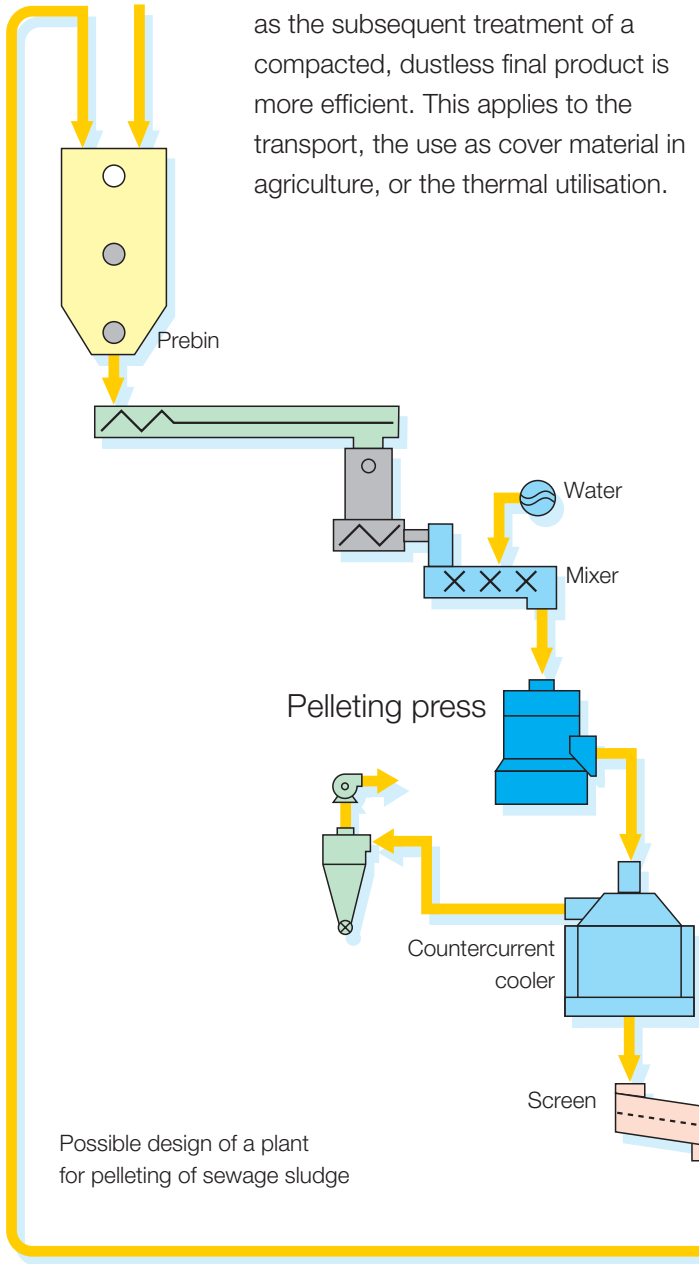
With a solids content of 60 % less solid pellets are produced than with 90 %. The solids content chosen depends on the further use of the sewage sludge.

The machines to be used are determined by the variable percentage of organic substances and the lowest pH value.

In case of a high percentage of organic substances the dried sewage sludge has a high volume and can only be proportioned into the press by means of special devices due to its bulk density of 150 - 200 kg/m³.

Besides, grinding will be required before pelleting. In case of the flat die pelleting press used by

Kahl grinding is effected by means of the cylindrical pan grinder rollers which rotate on the die. For this reason the KAHL pelleting system is particularly appropriate for the above-described product, as it can be adapted without problems to varying organic contents.



Possible design of a plant for pelleting of sewage sludge

The final products are pellets which are appropriate for a variety of applications.



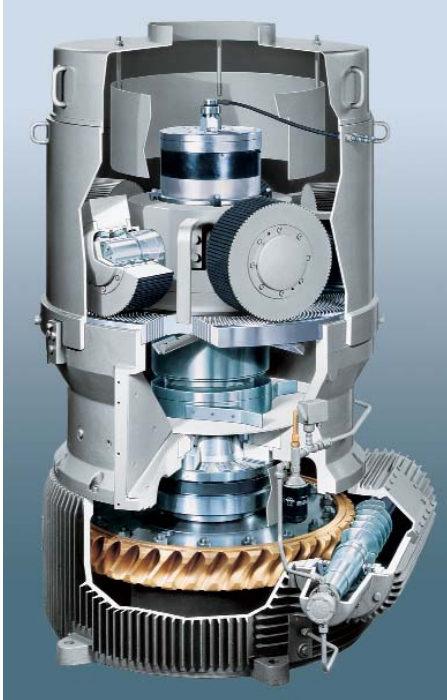
Pelleting presses



The range of KAHL pelleting presses comprises 12 sizes which cover laboratory requirements through to high capacity production.

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More than 20 KAHL pelleting plants for sewage sludge are now in operation worldwide



Pelleting press for the production of sewage sludge pellets

The bulk density of the sewage sludge pellets is about 800 kg/m³. The dust content is very low with < 1 % referred to a dust particle size of < 0.5 mm. All other fines do not cause dust nuisance during further treatment.

Under regular operating conditions the pelleting elements have a service life of 1,500 to 2,000 hours.

All safety regulations are fulfilled. The highest circumferential speed is 2.5 m/s and the surface temperatures are far below 120 °C. Consequently fire risks in the plant can be excluded.

A pelleting plant installed by Kahl has been in operation for several years (see illustration on the right) and is controlled automatically from a central switch plant. All operating data of the plant are gathered there and the corresponding reports are printed out.

Due to the automatic operation operating phases of about 3 months are possible. During this time the pelleting plant is operated unattended. After 3 months the regular preventive repairs are carried out, before the plant is set in operation again.



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