



SEPARATION

**ECONOMICAL, COMPACT,  
AND SAFE**

THE ANDRITZ GOUDA PADDLE DRYER  
FOR YOUR SLUDGE DRYING PROCESS

**ANDRITZ**

ENGINEERED SUCCESS



# Indirect heating to treat sludge waste streams

Many wastewater treatment plants handle a waste stream of digested sludge. The sludge is normally dewatered with a centrifuge or belt filter press. After dewatering, the sludge has a typical dry solids content of approx. 20-25%, which is very suitable for thermal treatment in an ANDRITZ Gouda paddle dryer.

## ECONOMICAL, COMPACT, AND SAFE

The heart of the installation consists of a trough containing two counter-rotating paddle shafts, equipped with paddles. Thermal oil or saturated steam flows continuously through the jacket, hollow shafts, and paddles. As the sludge is fed in, the wedge-shaped paddles ensure perfect local mixing and mechanical fluidization. The shafts are precisely aligned, and thus enable the paddles to interweave as they turn. This ensures the ideal surface-to-product contact and sludge flow, resulting in high evaporation rates per square meter inside the machine.

## INDIRECT DRYING

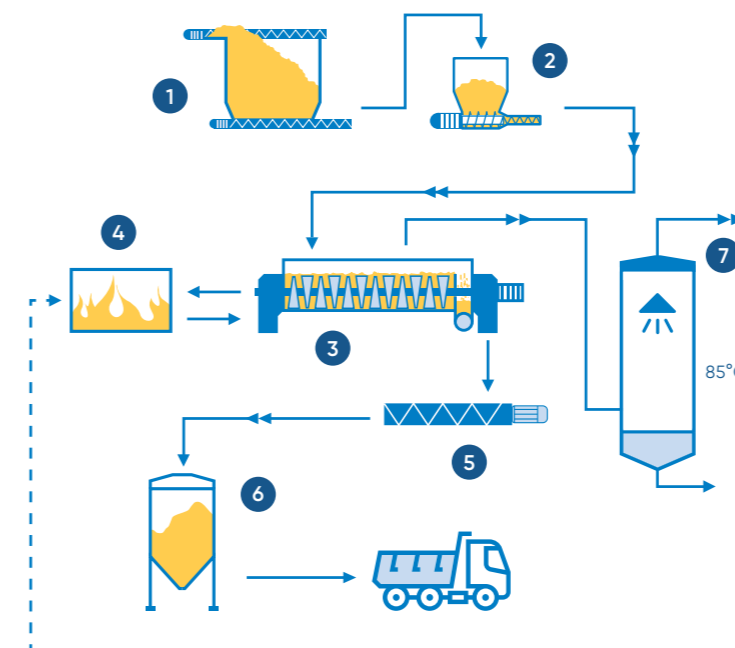
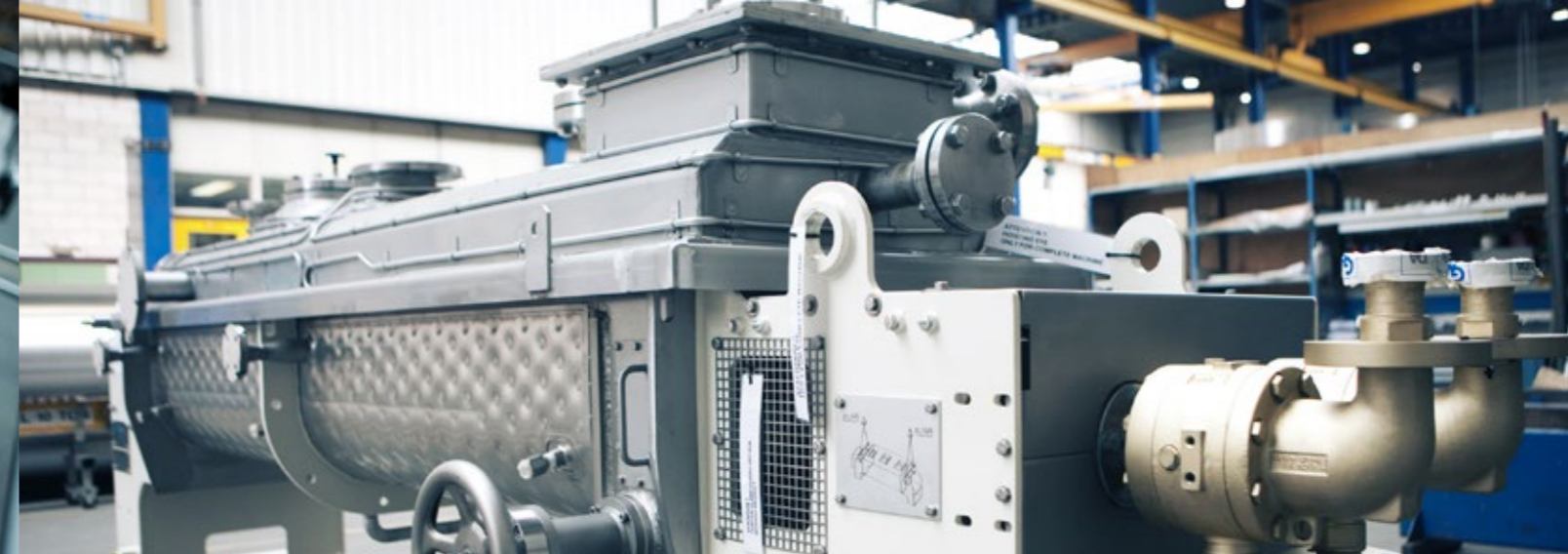
The paddle dryer is based on a system of indirect sludge heating. The indirect heat transfer avoids air flows, while fully enclosed operation enables the safe treatment of toxic, noxious, or combustible products. Due to the low operating speed of the shafts, little or no dust is formed during the drying process, while wear on the installation is reduced to a minimum. Another advantage of the indirect drying system is its low energy consumption as all the heat generated is used to evaporate the water.

## FLEXIBLE FOR DIFFERENT SLUDGES

The ANDRITZ Gouda paddle dryer offers once-through drying technology that does not require back-mixing. The long sludge retention time combined with the average sludge temperature of 100 °C make it possible to provide pasteurization and sanitary treatment of the sludge. Due to the type of process, any type of sludge is accepted by this machine, making it extremely suitable for centralized drying plants that handle different sludges from different regions.



Sludge drying in a paddle dryer



- 1 Wet sludge silo
- 2 Wet sludge pump
- 3 Paddle dryer
- 4 Thermal oil boiler
- 5 Cooler
- 6 Dry sludge silo
- 7 Scrubber

## YOUR BENEFITS

- High evaporation rates
- Class A end product
- Flexible for different sludges

Sludge drying process

## VAPOR TREATMENT

All the vapors coming from the dryer can be condensed in a wet scrubber. Because the dryer uses no sweep gas the volume which is treated in the scrubber is limited. The small amount of non-condensable gases in the exhaust can be post treated to minimize emissions. The sludge is pushed by the feed. The dried sludge leaving the dryer needs to be cooled prior to storage, to a safe temperature below 40 °C.

The dried product can be used for several applications, for example as a composting component for agriculture or an alternative fuel for combustion processes.

## PROCESS SOLUTIONS

The ANDRITZ Gouda paddle dryer comes in a variety of sizes, ranging from 3 m<sup>2</sup> of heat transfer area to a mega processor with an interior of 300 m<sup>2</sup> and a water evaporation capacity of 6 t/h for sludge. More than 220 ANDRITZ Gouda paddle dryers are in operation around the world, 30 of which are used for municipal sludge drying. Apart from the paddle dryer, ANDRITZ Gouda also provides process solutions – from the intake station for wet sludge to the silo for the dried sludge, including conveyors, wet tanks, vapor handling system, cooler, pelletizer, and truck silo.



## WHAT'S YOUR SEPARATION CHALLENGE?

ANDRITZ Separation is the world's leading separation specialist with the broadest technology portfolio and more than 2,000 specialists in 40 countries. For more than 150 years, we have been a driving force in the evolution of separation solutions and services for industries ranging from environment to food, chemicals, and mining & minerals. As the OEM for many of the world's leading brands, we have the solutions and services to transform your business to meet tomorrow's changing demands – wherever you are and whatever your separation challenge. **Ask your separation specialist!**

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