SEPARATION

ECONOMICAL, COMPACT, AND SAFE

THE ANDRITZ GOUDA PADDLE DRYER FOR YOUR SLUDGE DRYING PROCESS
Many wastewater treatment plants handle a waste stream of digested sludge. The sludge is normally dewatered on 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 shafts, arrayed with paddles. Thermal oil or saturated steam at 180–250 °C 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 flammable 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 avoids 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. As back-mixing is not required, any residual moisture content can be chosen for the final product. This makes the machine highly suitable for partial drying to 35–40% dry solids, which is required prior to incineration of the sludge.

Sludge drying in a paddle dryer
YOUR BENEFITS
• High evaporation rates
• Class A end product
• Flexible for different sludges

VAPOR TREATMENT
All the evaporated water is fed to a wet scrubber without any sweep gas being added. This means that the volume is limited to the amount of water vapor collecting in the dome of the dryer. The small amount of non-condensables in the exhaust vapor can be post-treated to keep emissions to an absolute minimum. The entire unit is installed on a slight incline, and the sludge flows by gravity alone to the opposite end of the installation for discharge. The dried sludge – with a dry solids content of 90–95% – is conveyed by means of cooled conveyors into a dry sludge storage silo at a safe temperature of well 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 1.5 m² of heat transfer area to a mega processor with an interior of 300 m² 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 complete process solutions – from the dump station for digested sludge to the loading station for the dried sludge, including sludge conveyors, wet sludge tanks, vapor handling system, sludge distributor, sludge 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!

AFRICA
ANDRITZ Delkor (Pty) Ltd.
p: +27 11 012 7300
separation.za@andritz.com

ASIA
ANDRITZ Singapore Pte. Ltd.
p: +65 6512 1800
separation.sg@andritz.com

AUSTRALIA
ANDRITZ Pty. Ltd.
p: +61 3 8773 4888
separation.au@andritz.com

CHINA
ANDRITZ (China) Ltd.
p: +86 757 8258 6802
separation.cn@andritz.com

EUROPE
ANDRITZ Gouda BV
p: +31 182 623 723
gouda@andritz.com

NORTH AMERICA
ANDRITZ Separation Inc.
p: +1 817 465 5611
separation.us@andritz.com

SOUTH AMERICA
ANDRITZ Separation Ltda.
p: +55 47 3387 9100
separation.bra@andritz.com

ANDRITZ.COM/SEPARATION

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