



PANELBOARD

# BUILDING ON AN ECOLOGICAL MULTI-TALENT

FRONT-END TECHNOLOGY  
FOR INSULATION PRODUCTS BASED ON  
WOOD FIBERS OR ANNUAL PLANTS

**ANDRTZ**

ENGINEERED SUCCESS





# PERFECTLY NATURAL INSULATION

With its excellent insulating properties and environmental advantages, wood fiber insulation is rapidly gaining popularity among building designers and contractors. ANDRITZ Panelboard collaborates with pioneers in this industry and supplies complete front-end systems for preparing fiber to produce high-quality insulation based on wood fibers or annual plants – in board form or blown-in.

## SEARCHING FOR SUSTAINABLE BENEFITS

Conventional building insulation is manufactured from materials obtained from petrochemicals or produced using very energy-intensive processes. One global study shows that commercial and residential buildings account for about 40% of the world's total primary energy requirement and contribute to more than 30% of CO<sub>2</sub> emissions. This has led construction companies and residential builders to search for alternatives to synthetic (polymeric) foam or fiberglass insulation. Wood fiber is rapidly becoming the material of choice for environmentally conscious designers and builders. In board form, wood fiber insulation is 100% compostable and recyclable at the end of its useful life. Wood is a sustainable, renewable resource that is a natural carbon sink to offset greenhouse gases. It has excellent thermal insulation properties for both heating and cooling as well as very good noise insulation capabilities. Wood fiber insulation products are vapor-open and can be made water-resistant.

## TECHNOLOGY AND EXPERTISE FOR WOOD FIBER INSULATION

ANDRITZ is a leading global supplier of fiber preparation technology for panelboard and pulp/paper production. Our expertise and technologies have been honed over decades of working with the forest products industry and are enhanced by its significant in-



vestment in R&D to deliver new solutions. For more than ten years ANDRITZ has been supplying front-end technologies to produce high-quality fibers for insulation board and blown-in products. Our technologies for wood fiber insulation extend from the woodyard to pressurized refining, and include all supplementary and auxiliary equipment. The machinery is modular in design and flexible in application, allowing us to develop tailored solutions that comply with each customer's requirements.

## MAKE THE DIFFERENCE

Several factors influence the quality and efficiency when producing insulation based on wood fiber or annual plants. Chip species, chip quality, proper pre-con-

ditioning, the correct refining degree, uniformity, and throughput are all aspects that must be considered for each customer. ANDRITZ' expertise in understanding these parameters, and our flexibility in arriving at tailored solutions, are what makes the difference when working with ANDRITZ. A factor that sets our technology apart is its ability to achieve stable production rates and quality over a range of operating conditions. Another priority is the conservation of energy. ANDRITZ offers environmentally friendly technologies for recovering thermal energy and reducing the consumption of electrical power.

"We have worked with true pioneers in wood fiber insulation for over a decade. This has given us a sound base of experience in the application of our technology and has helped us tailor our offerings to the unique needs of this sector."

**MICHAEL RUPP**

Vice President Panelboard Systems, ANDRITZ



# TAKE ADVANTAGE OF THE COMPLETE PACKAGE

Our key products contribute to safe, efficient, and energy-saving production of insulation based on wood fibers or annual plants, beginning with the receipt of raw materials. The most visible, and the most important, technology in the fiber preparation process is the pressurized refiner, but ANDRITZ offers all the supplemental equipment to arrive at a complete front-end package.



Tilting floor for constant and high throughput of the bulk material.



Plug screw feeder for highest dewatering efficiency.

## TILTING FLOOR

The tilting floor is a safe and efficient solution for tipping bulk materials such as wood chips into a receiving pit. The floor is easily adjusted to control the tipping of pourable and free-flowing materials (wood chips, sawdust, etc.). Materials that tend to form lumps are broken up by the oscillating movement of the panels and channeled into the receiving pit while keeping dust to an absolute minimum.

## PLUG SCREW FEEDER

For the pre-conditioning of wood chips, a very efficient Plug Screw Feeder compresses the raw material into a 'plug' to form a seal between atmospheric conditions and the pressurized digester and refiner. This improves flow uniformity and also reduces energy consumption by lowering the moisture content prior to the digester and refiner.

## C-FEEDER

The C-Feeder delivers continuous and stable feeding of raw materials to reach the highest fiber quality with the lowest specific energy consumption at the refiner.

## PRESSURIZED REFINER

The refiner is the heart of the fiber preparation process. It is sized to specific requirements to produce high-quality fiber with low energy consumption. Performance, reliability, and availability are hallmarks of ANDRITZ high-consistency refiners. The innovative "swing-door" design as well as the proven design of the bearing unit makes refiner plate changes fast and easy. With the accurate refiner plate gap adjustment, ANDRITZ ensures a fast start-up ramp to achieve the required fiber quality within a very short period after starting up the whole system.

## STEAM RECOVERY SYSTEMS

The Steam Recovery System (SRS), which can optionally be added, recovers and re-directs surplus steam from the blow line. The recovered steam is typically used in the chip pre-steaming bin, significantly reducing the amount of fresh steam required. The Fiber Centrifuge separates and recovers surplus steam from the fiber flow to preheat chips prior to refining, which reduces the energy required for downstream drying equipment significantly.

## IIOT TOOLS FOR MAINTENANCE AND OPERATION

ANDRITZ is very active in developing solutions compatible with the Industrial Internet of Things (IIoT), including its innovative ANDRITZ Maintenance Interval Guide Organizer (AMIGO) to help maintenance personnel increase their efficiency and lower costs. Examples include the automation of cleaning sequences, the monitoring of wear in critical components, condition monitoring of bearings, lubrication systems, and cooling water systems, recognition of refiner plate patterns, etc. In addition, there are new SMART products to improve product performance, such as dewatering efficiency and steam recovery. Connected properly these IIoT solutions will contribute to complete autonomous plant operations in the future.



High-consistency (HC) refiner ensuring a constant refining gap that is essential to obtain high fiber quality.



Very even feeding of the material to the refiner with the well-proven ANDRITZ C-feeder

**FROM WOOD TO HIGH-QUALITY FIBER**  
Get an overview of all our equipment  
for fiberboard production





# ANDRITZ – THE LEADING TECHNOLOGY SUPPLIER TO THE WOOD FIBER INDUSTRY

We provide equipment and complete fiber preparation lines for manufacturing insulation products in various forms like fiberboard or blown-in. Our services cover design, engineering, manufacturing, project management, installation, commissioning, and after-sales support. With extensive experience, we have implemented over 15 insulation board lines, showcasing our expertise and reliability, including one at naturheld GmbH in Germany.

## BEST PRACTICE IN SUSTAINABILITY

It is crucial to reduce the energy our buildings consume to combat climate change. So ANDRITZ and naturheld have pushed the sustainability and technical boundaries in wood-based insulation. Insulating buildings effectively combats climate change by regulating temperatures year-round. Traditional insulation materials, like mineral wool or fiberglass, pose sustainability concerns, prompting a shift toward wood-based alternatives. Ziegler Group, with Europe's largest sawmill, recognized this trend and established naturheld GmbH in Germany to utilize woodchips from its timber processing for sustainable insulation solutions. Equipped with pressurized refining systems and an entire chip handling system from ANDRITZ, naturheld GmbH produces

blown-in insulation for walls, ceilings, and floors, lightweight insulation boards for roofs and walls, and flexible material for spaces between rafters.

Despite challenges resulting from the COVID pandemic and the coordination of extensive civil engineering work, the ANDRITZ installation was completed swiftly. It included two fiber processing lines with pressurized refining, each capable of producing up to ten tons per hour. The key components comprised a chip handling system with a tilting floor, the chip storage and chip screening system, a plug screw feeder for optimal dewatering before refining, a C-feeder ensuring a consistent chip supply, and a 44"-1CP refiner to produce high-quality fibers with low energy use.



naturheld in Hütten, Germany: office building in front of the mill for sustainable insulation board production.

## MOVING FORWARD

**Forests are part of the solution to climate change. The intelligent use of wood, energy, and efficiency in the production of building insulation materials creates opportunities for sustainable climate solutions. Renowned, pioneering companies in the wood fiber insulation industry have specified and installed ANDRITZ technologies for wood fiber insulation production.**

**ANDRITZ is actively collaborating with these pioneers to achieve high-quality production with the ultimate goal of zero carbon emissions. As energy costs rise, it is becoming increasingly important to reduce energy consumption while producing insulation materials. ANDRITZ has invested considerable research into the fundamentals of fiber preparation while reducing energy consumption.**





## DISCOVER OUR FULL-RANGE PORTFOLIO FROM FIBER PROCESSING TO PAPERMAKING

An outstanding paper product requires outstanding production – matched with the particular needs of raw material and final product. Discover the full-range portfolio from ANDRITZ: Excellent stock preparation that allows best fiber development according to furnish and with economical use of resources. *PrimeLine* paper machines that are a synonym for producing top-quality tissue, paper, and board grades. Complete lines or single units, upgrades, and modernizations. Contact us and benefit from your individual package in papermaking technology.

### AUSTRIA

ANDRITZ AG, Vienna  
p: +43 50805 0

### USA

ANDRITZ Inc., Glens Falls  
p: +1 518 793 5111

### CHINA

ANDRITZ (CHINA) Ltd., Beijing  
p: +86 10 8526 2720

### CANADA

ANDRITZ Ltd., Lachine  
p: +1 514 631 7900

**PANELBOARD@ANDRITZ.COM**  
**ANDRITZ.COM/PANELBOARD**

**CLICK HERE**  
to get to know our  
locations worldwide



# ANDRITZ

All data, information, statements, photographs and graphic illustrations in this leaflet are without any obligation and raise no liabilities to or form part of any sales contracts of ANDRITZ AG or any affiliates for equipment and/or systems referred to herein. © ANDRITZ AG 2024. All rights reserved. No part of this copyrighted work may be reproduced, modified or distributed in any form or by any means, or stored in any database or retrieval system, without the prior written permission of ANDRITZ AG or its affiliates. Any such unauthorized use for any purpose is a violation of the relevant copyright laws. ANDRITZ AG, Stattegger Strasse 18, 8045 Graz, Austria. Due to legal requirements, we must inform you that ANDRITZ AG processes your data for the purposes informing you about the ANDRITZ GROUP and its activities. Find out more details about our data privacy declaration and your rights under the data protection legislation on our website: [andritz.com/privacy](https://andritz.com/privacy). Wood-fiber-insulation\_01/032024 EN