

# Laboratory plants for MDF

Focus on your R&D requirements



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# Boost your research and development in your own laboratory plant

Well-founded research and development is important when it comes to finding new solutions to meet actual market or customer requirements. New product developments and ideas for process designs often need to be tested and validated prior to full-scale commercialization. And this is where laboratory plants come into play.

## Supporting R&D

In a competitive environment, continuous product and process improvements are a must to get ahead of your competitors. The technologies of tomorrow cannot be developed simply by playing with theoretical assumptions, but need to be confirmed and refined in practical trials. Furthermore, lab-scale process set-ups often form the basis of designing industrial-scale production plants.

ANDRITZ is a globally leading supplier of laboratory equipment supporting the development of new processes and products for the panelboard industry. Universities, research institutes, and mills around the world trust in laboratory plants configured and equipped by ANDRITZ.

## Laboratory refiner

The centerpiece of each lab-scale panelboard plant is the laboratory refiner, adapted to the specific requirements of the application.

- ANDRITZ 12-1LC refiners
- ANDRITZ 12-1CP and 22-1CP pressurized refiners for thermo-mechanical fiber material
- ANDRITZ 12-1C atmospheric refiner

The laboratory refiner plants can be designed for low-, medium-, and high-consistency operation, and for processing of ligno-cellulose. Thermo-mechanical fiber systems are usually operated with saturated steam at a standard pressure of 10 bar. If required, a digester can be designed for pressures of up to 16 bar.

## Modular system

Each piece of equipment in the ANDRITZ laboratory plants is selected carefully so that the entire system is perfectly in line with the customer's technology. The modular design of each plant allows for flexible trial set-ups and test runs according to the research goals to be achieved.

Customized instrumentation ensures continuous monitoring of the technological test runs and validation of the parameters recorded. The plant is controlled with the aid of an extensive computer system, comprising a plant chart, a trend tracking functionality, a warning system, and alarm lists.

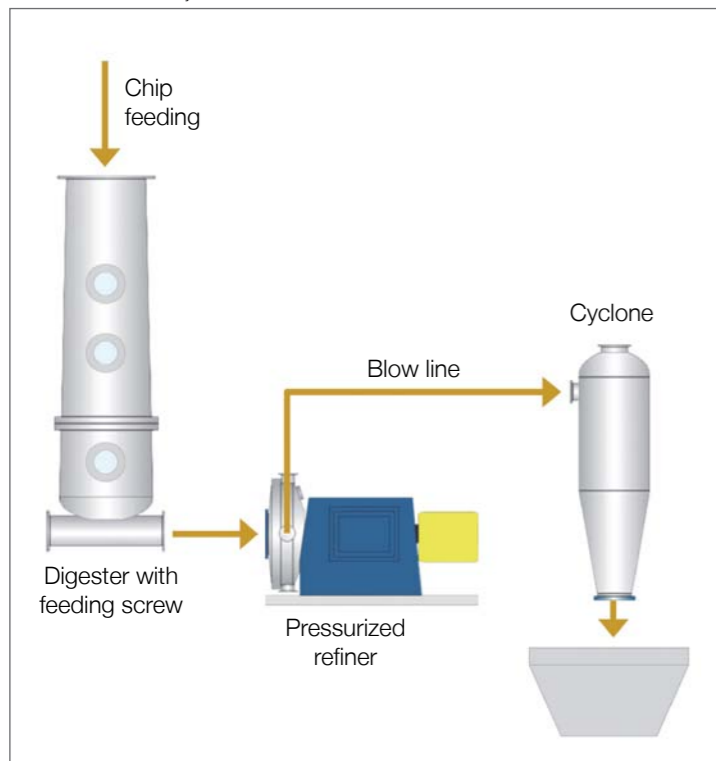
# Benefit from the technological experience of the leading supplier for front end systems

Due to the modular concept, a variety of laboratory systems can be configured with regard to feed arrangements, cooking conditions, refining parameters, and pressure ratings. ANDRITZ's in-depth process know-how forms the basis on which to design modern laboratory systems achieving reliable and reproducible test results.

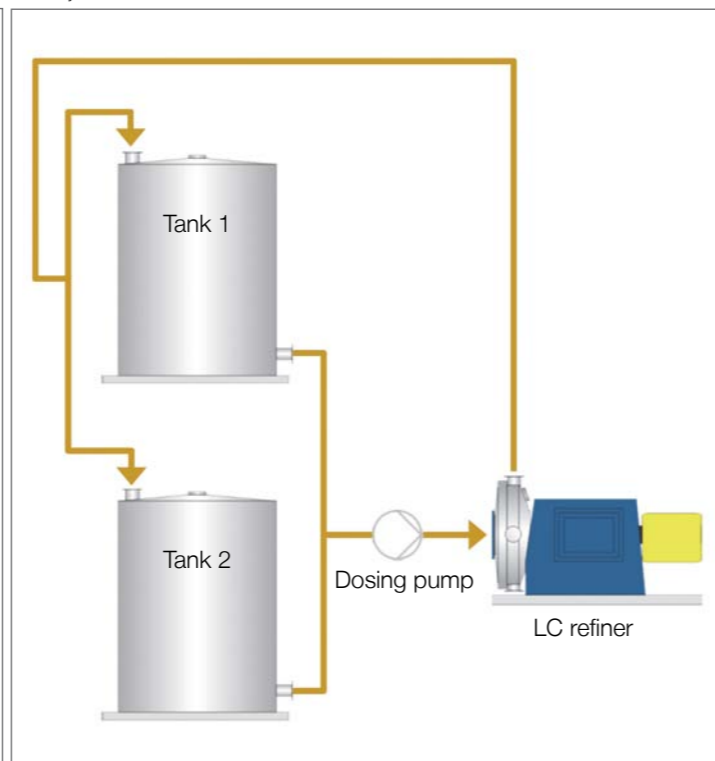
## Benefits

- Modular and flexible laboratory system adapted to the customer's technology
- Cost-efficient test runs with small amounts of material
- Quick change of operating parameters
- Easy operation thanks to clearly arranged control panels
- Inspection glasses to observe the behavior of the material in the digester
- System adaptable to a variety of testing materials

▼ Discontinuous HC system



▼ LC system



## Laboratory components

### For MC and HC applications

- Chip feeding
  - Atmospheric feed screw
  - Feed screw with agitator
- Cooking
  - Vertical digester batch system
  - Continuous digester
- Refining
  - ANDRITZ 12-1C atmospheric refiner
  - ANDRITZ 12-1CP or 22-1CP refiner suitable for a saturated steam pressure of up to 16 bar
- Steam system
  - Plug screw feeder (for continuous system)
  - Steam pressure control system
- Piping system, instrumentation, and plant control
- Steelwork (as far as needed)

### For LC applications

- ANDRITZ 12-1LC atmospheric refiner
- Tanks with agitators
- Adjustable dosing pump
- Piping system, instrumentation, and plant control

▼ Continuous HC laboratory refining system



# Reliable trial results

## with ANDRITZ laboratory equipment

System	Refiner type	Installed power	Capacity	Steam pressure
LC refining	12-1LC	45 kW	80-150 l/min	max. 4 bar
HC refining, discontinuous	12-1CP	45 kW	35 dm <sup>3</sup> /batch	max. 10 bar
HC refining, continuous	12-1CP	45 kW	60 kg/h	max. 16 bar
	22-1CP	200 kW	300 kg/h	max. 16 bar
Atmospheric	12-1C	45 kW	60 kg/h	atmospheric



▲ Simon Barth, Scientific Associate at the University of Applied Sciences in Rosenheim, Germany, examines the output of a test run conducted on the discontinuous laboratory refiner plant supplied by ANDRITZ.

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