

Perfection in Perforation

ANDRITZ Fiedler PerfTec



Drilling and milling technology:

High stability with maximum open area



When other manufacturers are unable to supply, you benefit from our 120 years of experience in perforating technology.

Using our computer-controlled spindle drilling machines, we can produce holes with diameters between 0,4 and 15 mm even in the most challenging metal or plastic materials. The main advantages of drilled plates are the large open screening area and greater stability. More holes per unit of area improve screening

efficiency. Often the screen is critical to the efficiency of your entire plant. For instance, drilled screens used in combination with milled profiles optimize the drainage process for fibrous suspensions and prevent the screen from plugging.

Drilling has definite advantages over punching:

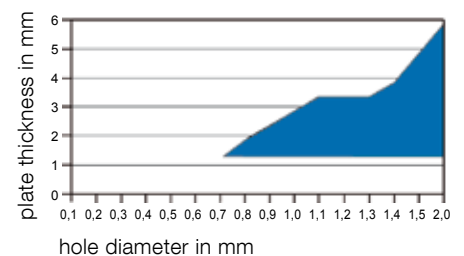
- Smooth hole walls and conical hole shapes ensure optimum throughput without plugging the screen.

- Individual adjustment of hole diameters, conicity of drilling, and the open screening area for specialized sieving and screening applications.
- High compression load during pressing processes.
- The critical ratio observed in punching (smallest hole diameter = plate thickness = narrowest bridge) does not apply — making it possible to produce thick plates with small holes and narrow bridges.

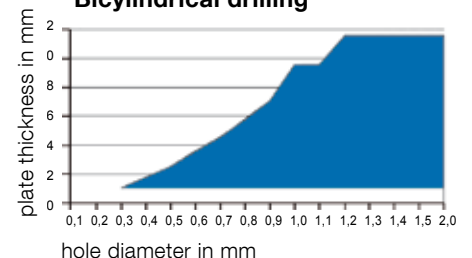
Benefits

- Surfaces are prepared to your specs — ground, brushed, blasted with sand or glass beads, hard-coated — as required
- Conically enlarged holes prevent plugging
- High stability with compression load
- Burr- and ridge-free surfaces
- Precise slot widths and hole diameters

Cylindrical drilling



Bicylindrical drilling

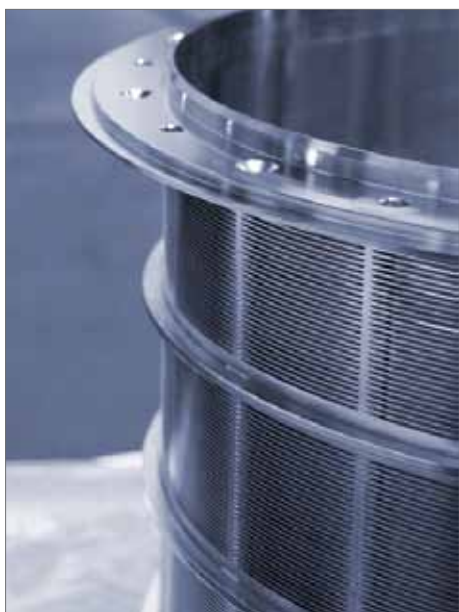
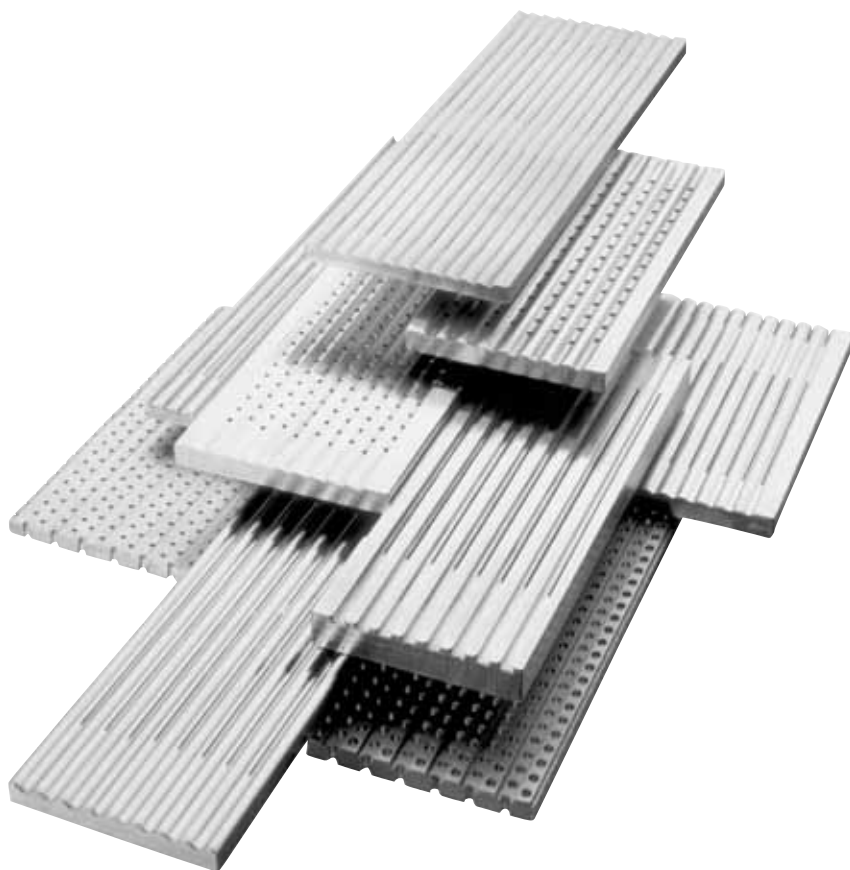


Slots for special screening processes

Slots are better than round holes for certain screening processes. Seeds, crystals, and other spherical process stocks are much more likely to plug a round hole than a slot.

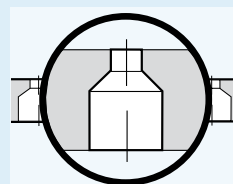
Slots make the tiniest hole widths possible. We supply milled screens with slot widths from 0,1 mm. In addition to various slot cross sections, like parabolic or trapezoidal, we also manufacture profiled screening plates.

Plates made of many different materials can be flat or rounded, processed to cylinders, cones, press jackets or shells.

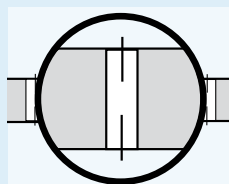


The right shape for every job

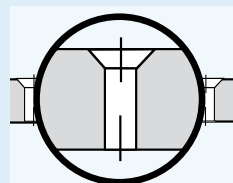
Drilling options:



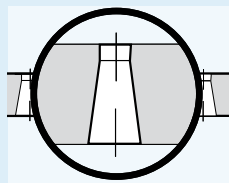
bicyclic



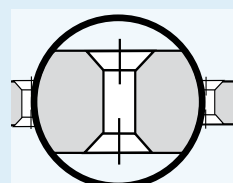
cylindrical



countersunk

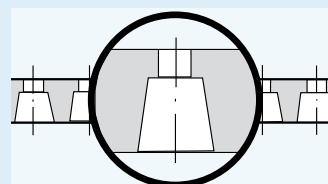


cylindrical conical

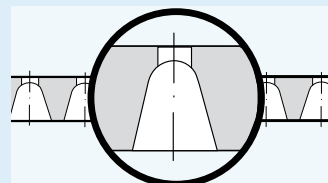


countersunk on both sides

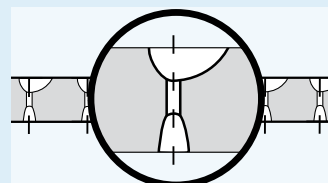
Milling options:



trapezoidal

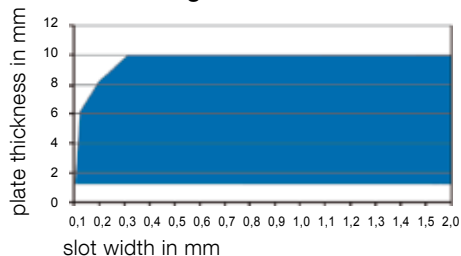


parabolic



parabolic with profile

Slot milling



Micro-perforation

For tiny screen openings

Micro-perforation technologies are an excellent supplement to mechanical perforation methods when the tiniest screen openings are required. Examples include hole diameters of 0.3 mm for the extraction of fruit and vegetable juice, or of just 0.1 mm to recover fiber from process water.

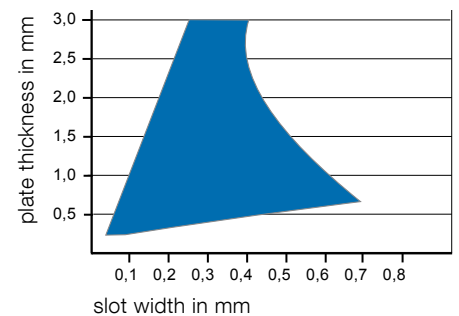
Micro-perforated screens are plates made of steel or other materials which have millions of tiny conical holes or slots. Smooth surfaces and conical openings ensure good material flow and high efficiency when screening.



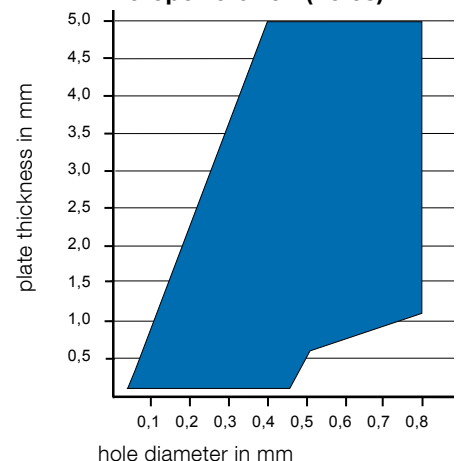
Areas of application

- centrifuges in the sugar, food, and chemical industries
- processing technology
- bowscreens in starch, fruit juice, and other food processing industries
- for the processing of chemical sludges and floating sewage
- high-power screens for the recycling of plastics, pulp and paper
- screens for paint and pigment production
- process filters / screens for catalysts, ion exchangers, resin traps, etc.

Microperforation (slots)



Microperforation (holes)



Benefits

- Ratios between the apertures and plate thickness of 1:10 or even up to 1:15 are possible
- Slot widths from 0,06 mm
- Hole diameters from 0,04 mm
- Plate thickness from 0,2 mm – 3,0 mm

ConiPerf:

Multi-talented fine perforated plates

ConiPerf triangular perforation

The openings of the ConiPerf triangular perforation have a triangular to half-elliptical form, as well as showing a strong conicity. By rolling the triangular perforation, the rough surface can be smoothed as required. This produces a slighted altered hole shape, but conicity remains the same.



ConiPerf triangular perforation



triangular perforation ground

ConiPerf slot perforation

Clearly greater open areas, as with the ConiPerf triangular perforation, will be realized by the oblong openings of the ConiPerf slot perforation.

Based on process requirements, the ConiPerf slot perforations have open areas from 5 to 27%.



ConiPerf slot perforation rolled



slot perforation ground

Material	Plate thickness	Hole width
Stainless steel	0,40 – 1,5 mm	0,10 – 4,0 mm
Non-alloy steel	0,50 – 2,0 mm	0,10 – 6,0 mm

Material	Plate thickness	Slot perforation
Stainless steel	0,40 – 1,0 mm	0,10 x 2,0 mm – 0,50 x 4,0 mm
Non-alloy steel	0,50 – 1,0 mm	

Areas of application

General applications

- aeration bottoms in silo and bunker towers
- pneumatic conveyor bottoms
- lining screens in nutty slack centrifuges

Chemical industry

- as centrifuge screens for ammonia, ferrous sulphate, Glauber's salt, crystal soda, sodium sulphate, calcium, potash, etc.

Food industry

- working screens for starch flour centrifuges
- drainage screens in centrifuges
- mill screens
- air or gas distribution beds in fluidized bed dryers and coolers
- as mill screens for crushing processes

Processing technology

- plastic crushing
- drying and cooling foundry sand
- producing wood splint for chipboards



Benefits

- Ratios between the hole size and plate thickness of up to 1:10
- High wear resistance
- Stability
- Conicity of openings
- Directed flow
- Documented pressure loss measurements

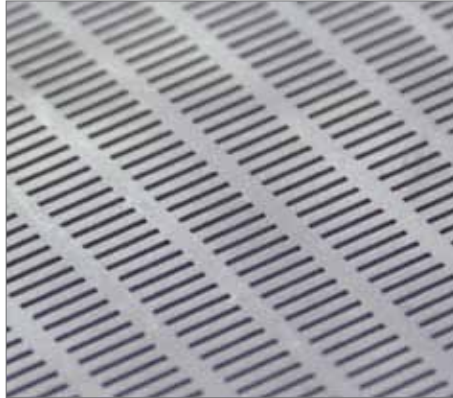
Punching technology

The most inexpensive means to the end



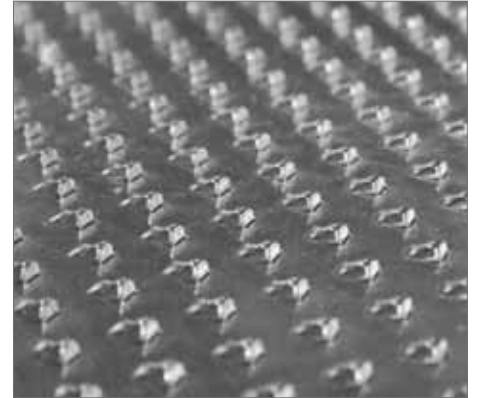
Round perforations

from 0,4 mm hole diameter in stainless steel with 0,4 mm plate thickness; from 0,2 mm hole diameter in stainless steel plate up to 0,2 mm



Slot perforations

from 0,3 x 6,0 mm in 0,5 mm plates, respective 0,4 x 6,0 mm in 0,8 mm plates.



Special perforations

Numerous tools are available for rasp respective special perforations.

We punch plates made of steel, aluminum, stainless steel, brass, copper, titanium, and plastic.

With modern punching automation, we are prepared to manufacture almost every conceivable hole pattern, with unperforated areas – program-controlled, with exact repetition and great precision.

Small series or repeat individual orders can be manufactured economically thanks to the program memory. We deliver standardized plates in accordance with DIN 24 041 and ISO Standards as well as plates between 0,4 mm and

15 mm thickness in special designs according to your drawings.

Punching is the most inexpensive procedure for the perforation of metals, although the “critical ratio” between hole diameter, plate thickness and narrowest bridge is limited to approximately 1 : 1 : 1. Thanks to refined technology, we come very close to the boundaries of what is possible. In certain cases we can even manage to drop below the “critical ratio”.

We manufacture perforations which cannot be punched, by means of drilling and milling technologies. As specialist in small volume and one-off products, we do not produce bulk goods (standard perforations on a coil).

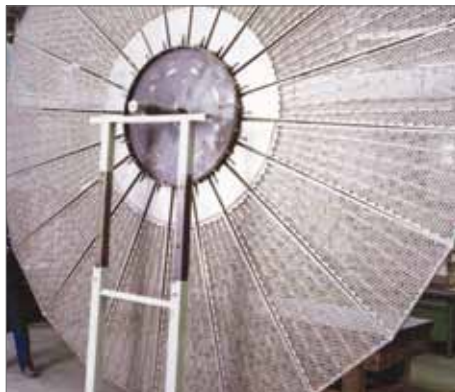


Areas of application

- Reciprocating and vibrating screens in the processing industry
- Screens and filter plates for the food and beverage industry
- Plant and container construction
- Protective screens for pipeline construction
- Screens for presses and purification plants
- Screening elements as well as rasing, screening, and pulverizing inserts for the mill building industry
- Acid-resistant screens for chemical factories

Component construction

Processed perforated plates, ready for installation



We are specialists in processing perforated plates to produce components which are ready for installation.

The surfaces of the perforated plates are high-quality ground, brushed, blasted with sand or glass beads, electropolished, or chrome-plated as required. Whatever the job: cutting, rolling, levelling, rounding, edgeworking, bending, deburring, grinding, turning, or forming, customers can rely upon our manufacturing technology, precision expertise, and 120 years of experience.



Areas of application for pre-finished components:

- Food industry
- Pump industry
- Power station construction
- Mill building
- Processing industry
- Waste water and environmental protection technology
- Textile industry
- Drainage presses
- Separation technology
- Pharmaceuticals
- Chemicals

Diversity in Perforation

from a single source



- **Drilling**
- **Milling**
- **Punching**
- **Micro-perforation**
- **ConiPerf**
- **Component construction**

Andritz Fiedler is one of the leading companies worldwide that has access to all existing perforating technologies: punching, drilling or milling technology, micro-perforation technology, and ConiPerf.

A main focus lies in the processing of these perforated plates. Andritz Fiedler offers machine components ready for installation made of various materials, mostly stainless steel.

More than 500 satisfied customers in various industries benefit from our consolidated knowledge about their quality requirements and processes. What can we do for you?

ANDRITZ FIEDLER GMBH
Regensburg, Germany
Phone: +49 (941) 6401-0

www.andritz.com/perfec
andritz-fiedler@andritz.com