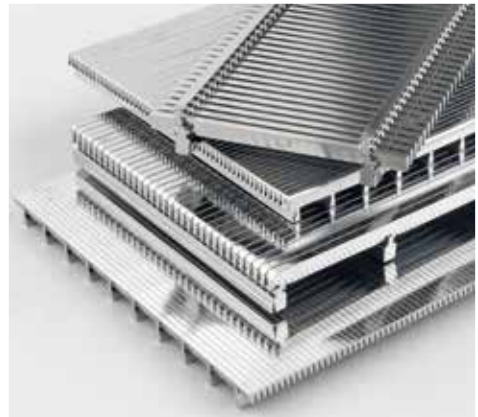


OPTIMA

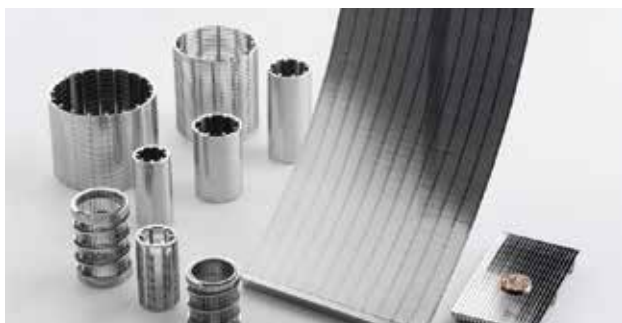
Welded Wedge Wire Screens and Industrial Filter Media



The OPTIMA Products

- Wedge Wire Panels
- Plain Sieve Panels
- Sieve Bends
- Slotted Screen Baskets
- High Precision Filter Tubes
- Industrial Filter Media

 **STEINHAUS**



With welded wedge wire screens cold drawn triangle shaped profiles are used as slot performing wires. Excellent mechanical properties for rigid applications with, at the same time, high precision slots are the special quality features.

OPTIMA wedge wire screens are often used for solid/liquid separation in practically unlimited applications, such as dewatering pipes, filter candles, sieve baskets, filter drums or centrifuge screens.

On screening machines, as sieve bends, in centrifuges for dewatering, for deslurrying and classification, in the chemical, pharmaceutical and food industry, for water treatment etc., these are the typical processes for OPTIMA welded wedge wire screens.



Wedge wire screens and filter for your application



OPTIMA Slotted Screen Baskets

The successful separation of materials in various processes, mainly in the solid/liquid separation is of high priority in many sectors of industries. OPTIMA welded wedge wire centrifuge baskets offer an optimum separation result because of their superior workmanship and high fitting accuracy. Centrifuges as well as separators are in operation in the following sectors:

- Chemical industry
- Food industry
- Waste water treatment
- Sand & gravel industry
- Enviromental applications (bio gas)
- Mining industry



OPTIMA welded wedge wire baskets are often found in:

- Centrifuges with conical or cylindrical design
- Screw press separators with cylindrical design

They can be supplied

- with and without reinforcement
- in one or several parts
- in all technically possible sizes and layouts
- in various steel grades
- with axial and radial slot direction



OPTIMA Spiral Cylinders



OPTIMA spiral cylinders are produced in diameters up to 1022 mm and lengths of 5500 mm. OPTIMA precision filter tubes made by highly accurate automatic welding machines, on the other hand, cover a diameter range from 23 mm to 305 mm.

All OPTIMA products are characterized by a sturdy construction for mechanically demanding applications. The high pressure resistance of our filter tubes can be reinforced further with supports, such as inside square wire spirals.

With specially developed profile wires slots width down to 6 micron can be realised.



Radial Slot FOTI

- FOTI (filtration from outside to inside)
Working surface outside

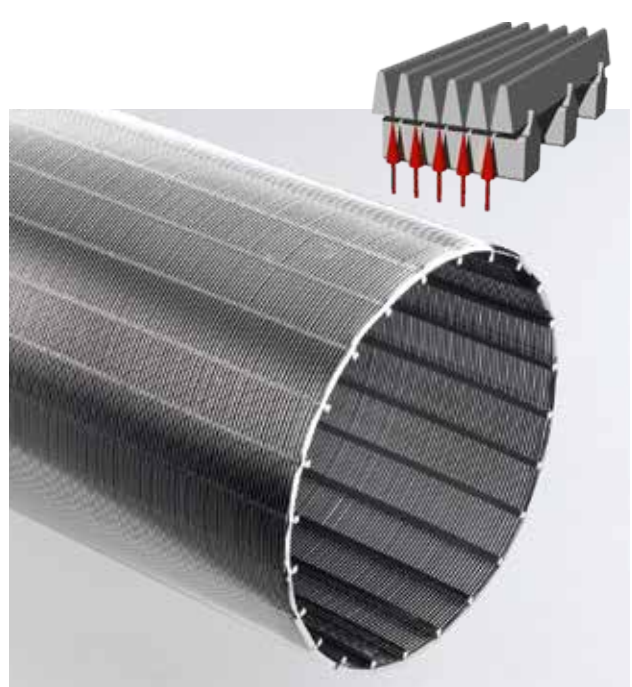
The triangular shaped slot performing profiles are welded with their wedge side to the inner crossbars. This is the most frequent design which makes the outside working surface smooth, thus allowing an easy cleaning from accumulated solids.



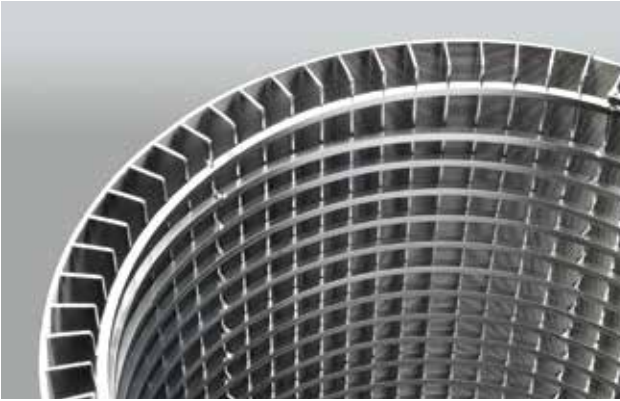
Radial Slot FITO

- FITO (filtration from inside to outside)
Working surface inside

The triangular shaped slot performing profiles are welded with their flat top side to the inner crossbars. In this design the flat working surface on the inside is interrupted by the position of the crossbars, thus making reverse flow the preferred cleaning method.



OPTIMA High Precision Filter Tubes



Axial Slot FITO

In this axial design the slot performing wires follow the axis of the wedge wire cylinder.

The crossbars are spirally winded and welded on the profile wires from the outside. The working surface on the inside is smooth and not interrupted. This cylinder type is either produced directly or by counter rolling from a plain screen panel.

The special feature is the smooth inner working / filtration side, which allows the use of scrapers for cleaning.

Square Slot[®] FITO / FOTI

This very latest OPTIMA innovation with square filter holes follows a new application concept.

The patented execution can be used with filtration – as needed – from the inside and/or outside with both perfect axial and radial openings.

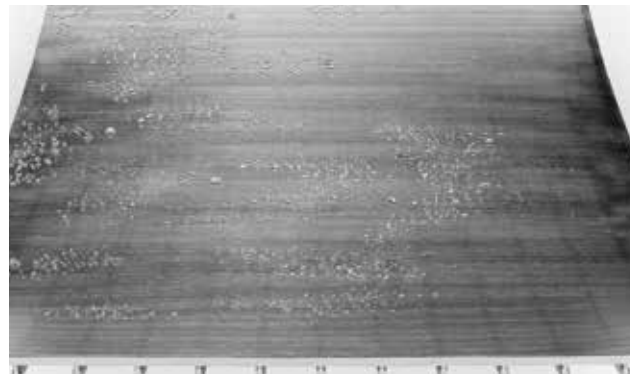
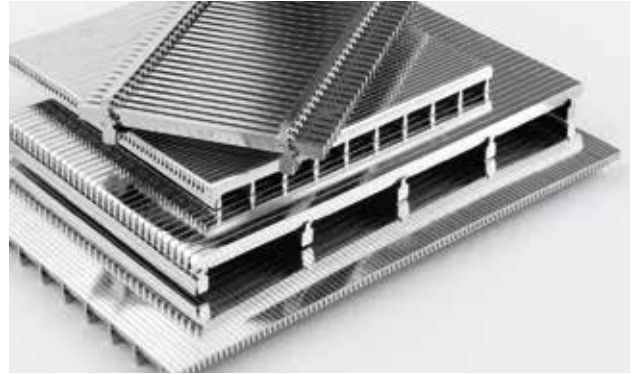
These filter tubes show their operational advantages especially with fibrous media. The special design geometry allows square openings down to 20 micron.



OPTIMA Wedge Wire Panels

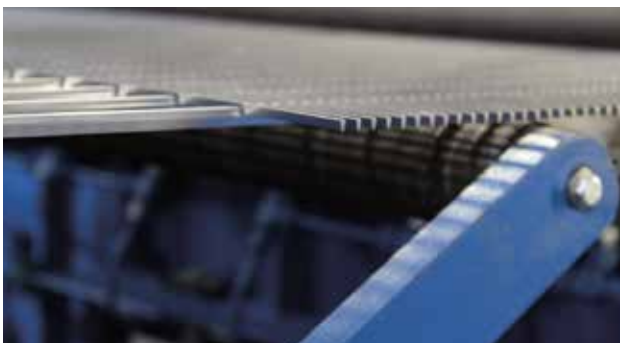
Plain or bended wedge wire panels find their use in the following sectors of industry:

- OPTIMA plain sieve panels with or without reinforcement in dewatering and screening machines
- OPTIMA filter bottoms for diffusion and extraction towers, plain filters, ion exchange systems, back flush filters etc. ...
- OPTIMA support panels for filter fleece in belt filters
- OPTIMA sieve bends with slots across flow direction for an optimal solid / liquid separation
- OPTIMA architectural grids for cladding of building facades
- OPTIMA kiln and lautering floors in breweries and malthouses



The range of OPTIMA wedge screens starts with finest profil wires to achieve the highest possible open screen area and goes to very rigid and sturdy designs to withstand high mechanical impacts when in use.

There is a big range of shapes for the slot performing wires, some of them are patent-registered.



Production

Plain OPTIMA screens are mainly produced by flat welding technics. Apart from them it is also possible, when design and slot width require it, to produce a spirally welded wedge wire cylinder first, which is then cut and made flat.

Types of Reinforcement

Plain OPTIMA slotted screens could be reinforced according to their needs to secure the proper installation.

- Steel reinforcement:

Reinforcements made of various steel grades and designs according to client's specification. Whether with a frame for clamp fixing or with drilled side rails for screwing, all is possible. Often plain sieve panels in smaller dimensions are supplied as one piece ready for installation. Bigger panels, however, are made of several segments to allow an easier handling and building-in. These individual segments could be of either trapezoidal, triangular or conical shape, if needed with a manhole for maintenance.

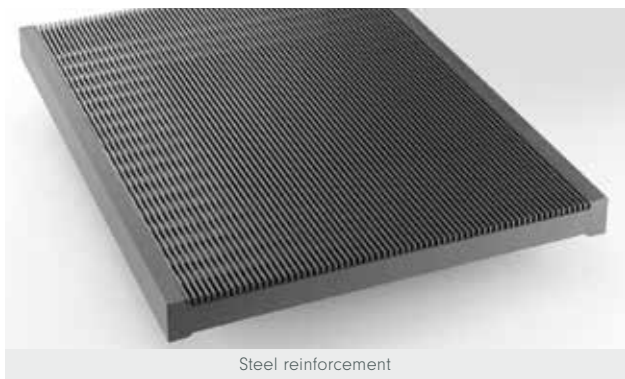


LOSIPLAST

Special Designs

STABO Grids

These heavy duty grids are made of special shape profiles with round wire crossbars. Distance rings secure the needed slot width. STABO grids are used for dewatering, as protection / cover grids and as grizzly or fine grates in waste water treatment.



Steel reinforcement



OPTIMA System

- OPTIMA system:

Made as modular segments with a special stand-ardised side profil to allow an easy snap-in-installation by means of a 2-groove-adaptor slat made of polyurethane.

- LOSIPLAST side rails:

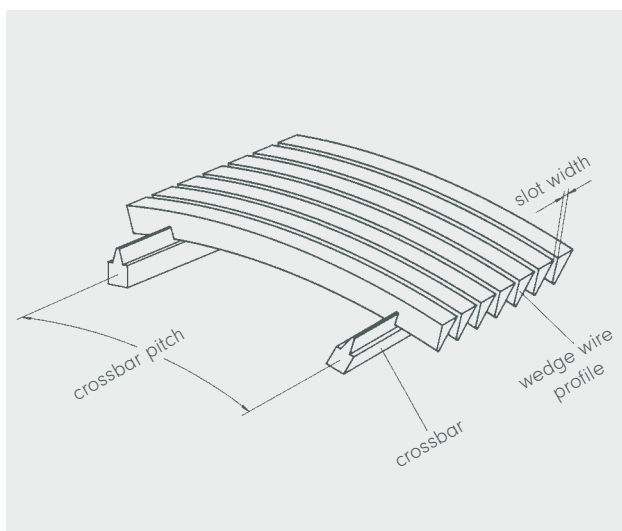
Made of open cast polyurethane with integrated steel reinforcement for clamp fixing in screening machines

PRÄZISSA Looped Wedge Wire Screens

These screen segments are made of looped and cold shaped profile wire connected by round cross bars. PRÄZISSA looped wedge wire screens allow a double conical slot design and are therefore preferably used in the sugar industry.



OPTIMA Functional Principle



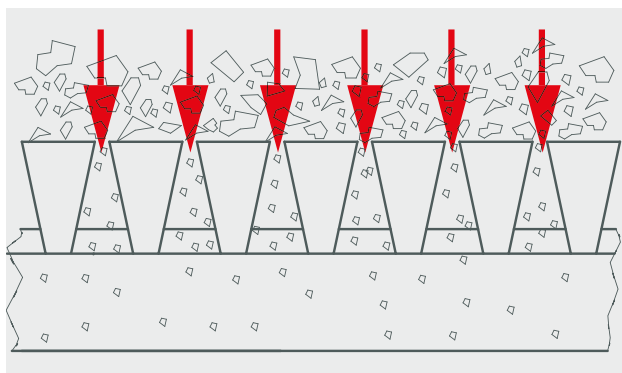
The profile wires are connected to the crossbars by means of high pressure resistance welding. So this construction of the whole segment is slot secure and high resistant. Individual parameters for the production are computer-controlled at the welding machine.

Permanent verification of individual parameters, such as the level of welding current, leads to safe-guarding a constant quality combined with high mechanical stability. The triangular shape of the slot performing wires practically excludes the clogging of individual slots.

The downward widening slot in flow direction prevents blockage of near-mesh grain size particles.

These are your requirements:

- Long operational lifetime
- Filtration / separation performance
- Cut size
- Slot width preciseness
- Stability



To do justice to these aspects there is a wide range of individually developed profile shapes available for your specific application.

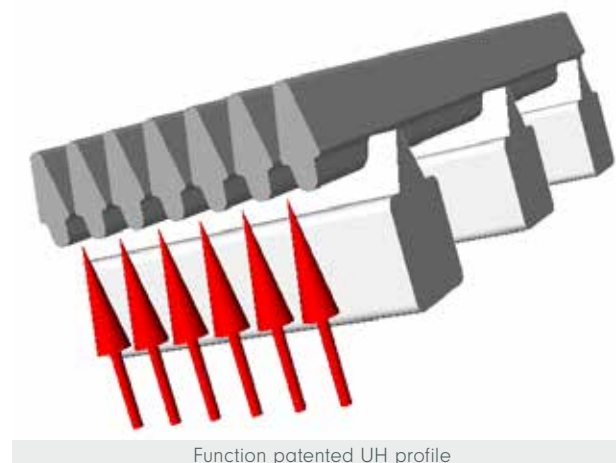
The profile shape defines the type and extent of the widening of the slots and influences the slot openings to remain open.

Material qualities

1.4016	1.4439	1.4864
1.4057	1.4449	1.4507
1.4301	1.4462	2.4360
1.4404	1.4529	... etc.
1.4435	1.4539	on request
1.4541	1.4828	
1.4571	1.4841	

Calculating the open screen area for OPTIMA

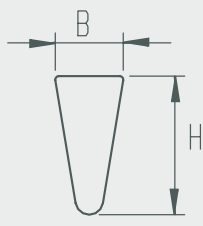
$$\text{Screen area} = \frac{\text{Slot width}}{\text{Profile head width} + \text{Slot width}} \times 100 \%$$



Function patented UH profile

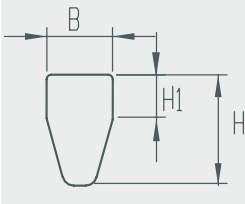
OPTIMA Range of Profiles

US - standard for High Precision Filter Tubes

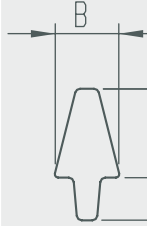


Type	B [mm]	H [mm]
4 US	0,495	1,25
10 US	0,75	1,4
11 US	0,75	1,8
12 US	1,0	2,0
15 US	1,19	2,24
18 US	1,5	2,5
22 US	1,8	3,7
28 US	2,2	4,5
34 US	2,8	5,5
42 US	3,4	6,8

Hs - heavy duty profiles for plain screen panels

	Type	B [mm]	H [mm]	H1 [mm]
	Hs 6	5,0	7,0	1,6
	Hs 8	6,8	9,4	2,2
	Hs 10	8,5	11,5	2,7
	Hs 12	10,0	14,0	3,3

UH - for High Precision Filter Tubes

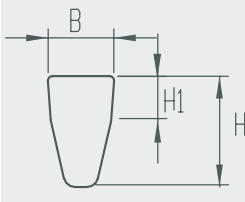
	Type	B [mm]	H [mm]	H1 [mm]
	105 UH®	0,5	1,4	0,9
	11 UH®	0,75	1,8	1,3
	12 UH®	1,0	2,0	1,35

WO - for production based on spiral welded cylinders

The image shows a technical drawing of a cross-section of a WO profile. It is a trapezoid with a top width labeled 'B' and a height labeled 'H'. The drawing includes dimension lines and arrows indicating the measurements.

Type	B [mm]	H [mm]
10 WO	1,0	2,0
15 WO	1,5	2,5
20 WO	2,0	3,0
25 WO	2,5	3,5
30 WO	3,0	4,0

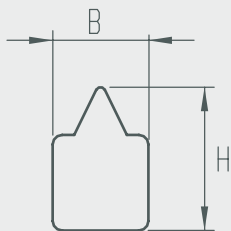
USC / sbb - profiles with higher wear potential: sbb for all types of screens; not for cylinders <400 mm Ø; USC for cylinders <400 mm Ø

	Type	B [mm]	H [mm]	H1 [mm]
	18 USC	1,5	2,5	1,0
	34 sbb	2,2	5,0	3,0
	42 sbb	2,8	6,5	4,0
	50 sbb	3,4	7,5	5,0
	76 sbb	5,0	10,0	7,0

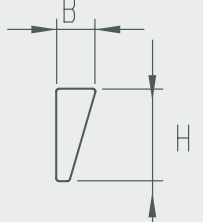
sb - standard for all screen designs; not for cylinders <400 mm Ø

Type	B [mm]	H [mm]
22 sb	1,8	3,7
28 sb	2,2	4,5
34 sb	2,8	5,0
42 sb	3,4	6,5
50 sb	3,4	7,5

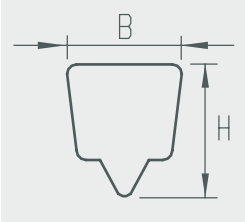
Q - typical crossbar profiles

	Type	B [mm]	H [mm]
	Q 20	2,0	2,2
	Q 25	2,0	3,0
	Q 35	3,0	5,0
	Q 55	4,0	8,0

US - for High Precision Filter Tubes

	Type	B [mm]	H [mm]
	111 US®	0,75	1,8

sb - special profile

	Type	B [mm]	H [mm]
	55 sb	5,0	5,5

OPTIMA Industrial Filter Media



Economical and reliable

Formfilters for separating solid and suspended matter out of liquids and gases in valve fittings, pipework, pumps, hydraulic and air-conditioning systems.

In mechanical engineering, in the chemical and pharmaceutical industry, in the iron and steel industry, in power station systems, in the petrochemical industry, in coolant treatment, in water treatment and in the food-stuffs industry.

Formfilters, being classic surface filters, prevent machine damage and can generally be cleaned and re-used.

We manufacture shaped filters in all possible shapes, geometries and metal-sheet thicknesses to meet individual customer requirements, from prototypes through to large series, in all commonly used materials.

For reliable filtration, connection methods are selected to suit the intended use or your specifications.

Shaped filters are manufactured with high precision to customer specifications and drawings in all technically manufacturable designs, as filter disks (round, rectangular, square), or cylinders, cones, half-shells and in other shapes, as well as in the form of finished filter elements, filter plates and filter baskets, butt-, roller- or spot-welded, soft- or hard-soldered, flanged or beaded, drawn, stamped or pressed.

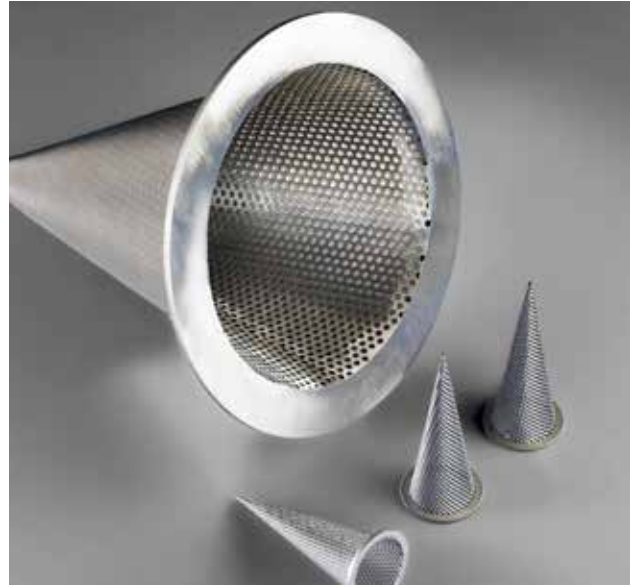


Start-up filters

have the job during the initial start-up of equipment in pipeline and apparatus construction of removing production residues like slags and electrode residues that have found their way into the system by fitting and welding work. Damage to system parts fitted downstream is thus prevented and the risk of costly operational disruptions markedly reduced.

Start-up filters comprise a support element made from perforated metal sheet or wire mesh, onto which the actual fine mesh filter cloth is fitted, plus a flanged ring for fastening in the pipesystem. The size of the mesh holes in the filter cloth depends on the requirements.

All commonly obtainable steel qualities are used as materials for filter cloths, support elements and flanged rings.



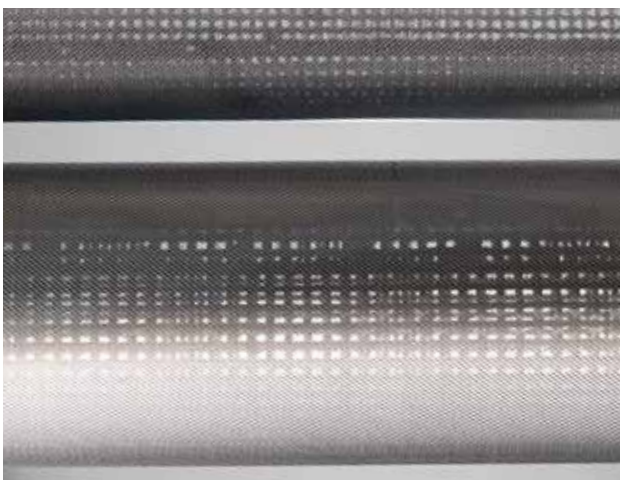
Dual-cone start-up filters

If the fitting length available is insufficient to accommodate a single-cone start-up filter with the required filter surface, it is usually possible to fit a dual-cone start-up filter with a reduced fitting height and the same filter surface.



Filter cartridges

for cleaning and regenerating cutting oils for machine tools. These filter cartridges, which likewise work on the principle of pre-coat filtration, enable a high through-put in the smallest possible space. They can also be used problem-freely at high operating pressures.



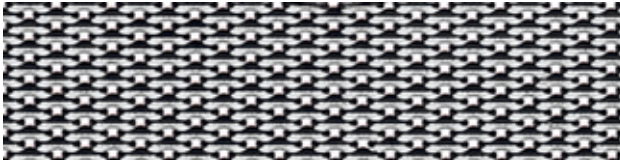
Perforated Plates

Electroformed micro-perforated plates

Micro-perforated plates have done much to help solving difficult separation problems in e.g. centrifuges, particularly in the chemical and foodstuff industries. They now supplement fine-screen plates made from punch-perforated sheets or wire cloths for separating processes that call for the highest precision and optimum through-put.

Micro-perforated plates manufactured galvanotechnically from pure nickel have found use in numerous branches of industry in recent years.

STEINHAUS supplies micro-perforated plates in the form of sheets and segments of all kinds in sizes up to 1000 x 1000 mm and thicknesses of from 0.07 up to 0.75 mm. The surfaces of micro-perforated plates can, if required, be finished in hard chrome.



Round perforations in staggered rows, in straight rows or in diagonally staggered rows.

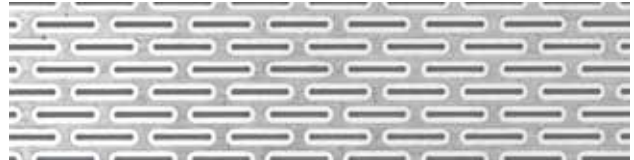
Perforated plates with round and square perforations as well as with slotted-hole and special perforations

- Design: Galvanically manufactured perforated plates with a smooth surface on the working side and perforations that widen conically in the direction of through-put, minimum hole widths of 0.44 mm for round or slotted-hole perforations, special hole shapes on request, perforated plate thicknesses from 0.07 to 0.75 mm
- Material: soft or hard nickel with bright or very bright surface
- Application: as filter, screen/centrifuge lining, printing stencil, separator for dust, water, oil, petrol, etc.



Advantages

- The hole shape can be adapted to any intended use
- The surface is completely smooth on the working side
- Holes that widen in the direction of through-pass guarantee the greatest possible freedom from blockage
- High corrosion and acid resistance and abrasion resistance (that can be considerably further increased with a hard chrome layer)
- Hole widening through wear on the screen surface becomes only gradually apparent



Slotted-hole perforations in staggered rows or in straight rows.

Drilled perforated metal plates

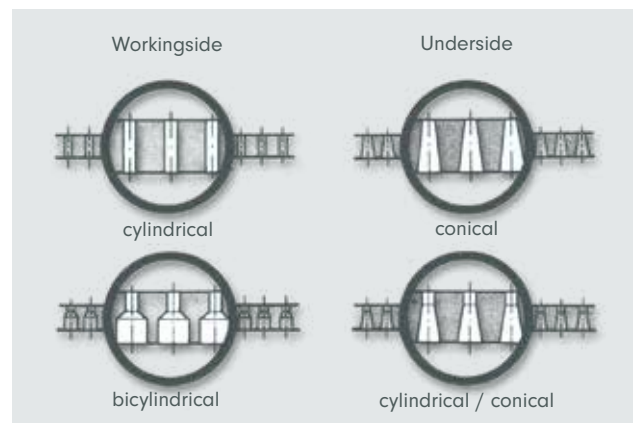
We supply drilled perforated metal plates with different hole shapes in high-precision design.

- Material: commonly available chromium steels and other machinable qualities
- Design: hole diameters from 0.7 up to 10 mm and plate thicknesses from 2.0 up to 10 mm

Hole configuration

In straight rows (rectangular or square)

- diagonally staggered
- in staggered equilateral triangles
- in staggered isosceles triangles



Textile Filters



Treatment and finishing processes

Once the raw felt has been made, it is treated and finished to give the specific physical or chemical properties.

This is done to, on the one hand, improve its filtration properties and, on the other, extend its service life.

There is thus a whole range of effectcient and practice-proven treatment processes available for filter media, tailor-made for any filtration or process problem.

The most important finishing methods include:

calendering, thermofixation, singeing, water- and oil-repellent impregnation, dirt-repellent, antistatic or flame-retardant treatment, acid- and hydrolysis-resistant treatment (spec. for polyesters and aramids), PTFE coating, powder- and foam-coating, membranous tubing.

Textile filters

are outstandingly suited for the economical separation of harmful substances or the retrieval of reusable materials from liquids and gases in existing filter and dedusting systems in many areas of industry – even those with the finest impurities.

For example, in the form of filter hoses for filtering separators in iron and steel and cement works, in mining, in chemicals, in foodstuff and animal feed production and in many other areas of industry. Or in the area of wet and dry filtration in the form of filter pockets, filter bags and filter cloths or filter mats made from non-woven fabric for air purification.

For our ready-made production we stock a broad and varied selection of material qualities made from natural and synthetic fibres in the form of woven cloth or needle felts, in various weights and air-permeabilities and with various resistancies to thermal and chemical action.

The selection of the right material quality for an application depends on the kind of dust to be filtered and the mechanical, thermal and chemical loading.

The performance capability of textile filter media depends on surface loadability, separating efficiency, cleaning characteristics and operational life.



OPTIMA Production



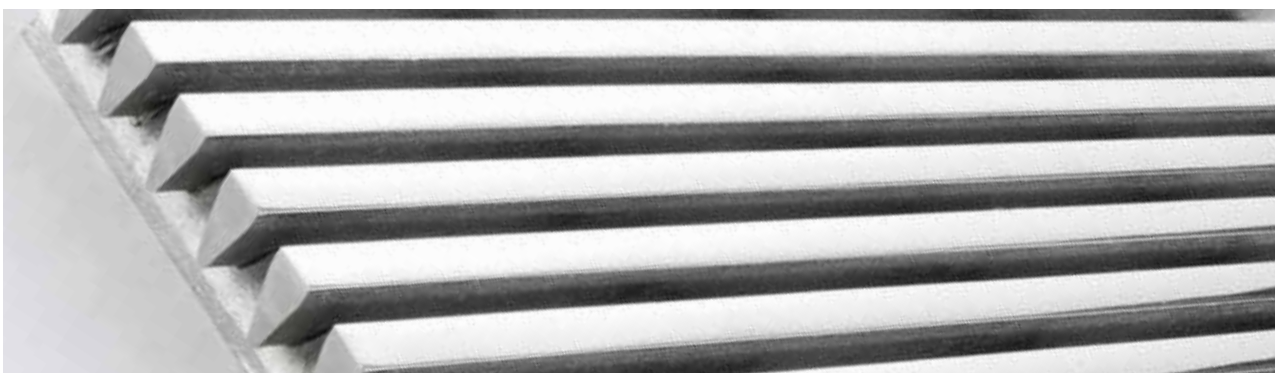
The OPTIMA slotted screen family is produced on own, especially developed automatic welding machines. This is done both in spiral and flat welding processes.

To realize custom-made specifications for our clients is our aim. From individual items right up to series production – based of our many years' experience and know-how – we will find the most economic solution.



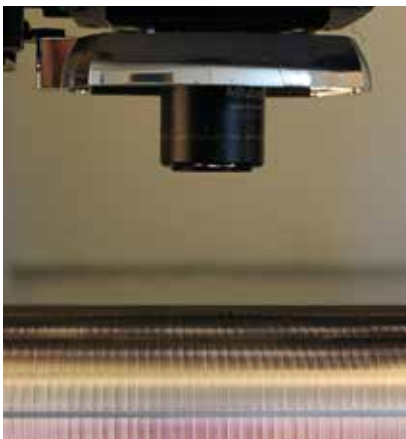
Qualified welding specialists, who always have up-to-date technical knowledge through continuous training programmes, are one of the key factors of our production.

What is more, STEINHAUS instructs these employees themselves in order to ensure that our special needs are fulfilled right from the very first day.



Quality Management

STEINHAUS GmbH is part of an international group of companies employing a workforce of more than 3000 people in over 50 companies throughout the world. Since its foundation in 1922 STEINHAUS has been a reliable partner for the industry and stands for innovative, customised solutions. Highest quality is of top priority for us.



Currently, more than 160 employees are working in strict accordance with our in-house quality management system, closely following DIN ISO 9001.

The most up-to-date testing equipment is available to us.



Delivery Program

Screen Panels

Screen panels made of polyurethane & steel
System screen modules
Wire mesh
Perforated plates

OPTIMA

Wedge wire panels
Plain sieve panels
Sieve bends
Slotted screen baskets
High precision filter tubes
Industrial filter media

Wire Mesh Conveyor Belts

Woven & braided wire mesh belts
Rolled baking oven belts (Z-belts)
CLEANBELT device for belt cleaning

LuCoTec Air Spring System

Air spring systems for screening machines &
other vibrating machines

MULTOTEC - Process Equipment

Slurry Pumps
Cyclones
Spirals

The information given and images in this catalogue are non-binding and represent an approximate description only. They are no guaranteed properties. Alternative designs are possible on request.
Subject to alteration serving technical progress.

Contact us for **on-site consultation** by our experienced **field engineers**.



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