Screen Surfaces & Wedge Wire
As the premier manufacturer of stainless steel, polyurethane, rubber and woven wire screening systems, FLSmidth Ludowici offer the most comprehensive and innovative range of screen surface media for the industry including:

**Wedge Wire**
- Fully welded centrifuge baskets
- Modular screen surfaces
- Flat panels
- Sieve bends
- Custom screen panels
- Water well & intake screens
- Intertank screens

**Polyurethane**
- Pipo Two® modular screen system
- Pipo Three® modular system
- Continuous slot
- Tension mat
- Trommel screen panels
- Custom designed panels
- Kokol® modular systems
- XIF® Slot

**Rubber**
- Moulded modular screening Systems
- Punched rubber tension mats

**Woven Wire**
- High carbon
- Stainless steel
- Exotic materials

**Perforated Plate**
- Round, square, hexagon and slotted slots and rectangular aperture
- Plate thickness - 1.2mm to 10mm
- Materials 3cr12, 5cr12 and Bisalloy
- Available in Pipo Two modular, bolt-in panels and tensionable screen forms

**Combination and specialty products**
- Poly-Vibe®
- TIRO®
- Woven wire Agavibe
- Woven mesh mats

**Industries using wedge wire**
- Coal processing
- Mineral beneficiation
- Gold
- Aggregate
- Sand and gravel
- Abrasives
- Cement
- Clay
- Pulp and paper
- Wood products
- Steel-coke/sinter
- Iron ore
- Architectural
- Agriculture
- Poultry
- Food processing
- Sugar
- Brewing
- Malting
- Grain processing
- Animal feeds
- Fertilizer
- Rendering
- Pharmaceutical
- Chemical
- Petroleum
- Paint
- Plastics

**Equipment using wedge wire**
- Vibrating equipment
- Carbon screens
- Intertank screens
- Kemix screens
- Shakers
- Stationary and vibrating sieves
- Centrifugal dryers
- Screw conveyors
- Washers
- Scrubbers
- Noise control flumes
- Filters
- Pressure sieves
- Tank bottoms
- Digesters
- Jigs
- Cyclones
- Mills
- Feeders
- Floor grates
- Trommels
- Pipeline strainers
- Ion exchange vessels

---

**Benefits**
- Substantially reduces pegging and binding
- Custom made to flat and curved shapes, cylinders and cones
- Manufactured according to slot size (0.2mm to 20mm)
- Large selection of profile wires - varying head widths, heights and relief angles
- Variety of support rods - catering to light and heavy loads
- Selection of stainless steel graded panels including high corrosion resistant grades.
Woven Wire Screen Cloths

FLSmidth Ludowici have a wide range of woven wire screen cloths - the most versatile and common screening medium in the quarry industry.

There are two types of woven wire screen cloths based on manufacture method:

- Woven wire screens: manufactured in hi-tensile wire 'AGATEX', 304ss or 316ss.
- Fine mesh screens: manufactured in 304ss or 316ss.

Ideal For

- Scalping operations
- Classification – coarse and fine screening

Feed size

- Square
- Long slot
- Double chute
- Triple chute
- AgavibePoly-Vibe®
- Piano wire/harp screens.

Features and Benefits

- Standard aperture sizes from 0.063mm to 125mm.
- Variety of wire sizes and weaving patterns.
- Manufactured from Australian steel (certified materials).
- Range of weaves for different duties.
- TIRO®, Poly-Vibe® and agavibe use a unique harp wire pattern for difficult to screen materials.
- Reduces blinding and pegging in difficult screening applications when machine action and material impact is combined to enliven the surface.

Woven Wire Agavibe Screens

Woven wire screen cloths are made with stainless steel, high carbon and other exotic materials and is manufactured using round wires. The wires are woven, forming a wave pattern with transverse wire clusters holding the wires together to provide excellent open area for peak performance.

Agavibe has excellent open area and is ideal for applications where pegging and blinding of apertures are an issue.

Ordering woven wire

When ordering woven wire, specify the following for best results:

- Quantity
- Dimensions
- Over hooks
- Overall length
- Length of hooks (if overlap)
- Aperture Size
- Wire diameter
- Metal (e.g. agatex or stainless steel)

<table>
<thead>
<tr>
<th>Aperture Size (mm)</th>
<th>Wire Diameter (mm)</th>
<th>Open (%)</th>
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<tr>
<td>3</td>
<td>1.6</td>
<td>43.3</td>
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<tr>
<td>4</td>
<td>1.6</td>
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<td>4.5</td>
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<td>32</td>
<td>6.3</td>
<td>63.3</td>
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</tbody>
</table>

Ideal For

- Minerals processing
- Aggregate industry
- Difficult applications where blinding and pegging reduce screening efficiency

Features and Benefits

- Higher open area than standard woven wire.
- Apertures from 0.10 to 1.26 inches (2.5mm – 32mm). Available in a range of wire gauges.
- Assists with sticky, moist or near size material to pass the screen.
- Increases throughput by 20% to 60%.
- Provides a flatter surface.
- Lighter screen cloth reduces manual handling injuries.
Fine Mesh Screens

Woven wire screen cloths are made with stainless steel, high carbon and other exotic materials and are manufactured using round or shaped wires. The wires are woven, forming a wave pattern with transverse wire clusters holding the wires together to provide excellent open area for peak performance.

Agavibe has excellent open area and is ideal for applications where pegging and blinding of apertures are an issue.

Ordering woven wire
When ordering woven wire, specify the following for best results:
- Quantity
- Dimensions
- Over hooks
- Overall length
- Length of hooks (if overlap)
- Aperture
- Square or rectangular
- Preference for particular type of crimp
- Width then length if rectangular aperture
- Wire diameter
- Metal (e.g. agatex or stainless steel)

<table>
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<tr>
<th>Aperture Size (mm)</th>
<th>Light Duty Wire Dia (mm)</th>
<th>Standard Duty Wire Dia (mm)</th>
<th>Heavy Duty Wire Dia (mm)</th>
<th>Extra Wire Dia (mm)</th>
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<tr>
<td>14.00</td>
<td>1.80</td>
<td>2.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Harp Screens

Harp screens are used for difficult materials, where blinding and pegging make screening with square mesh limiting. They screen sticky and damp materials, where screening with a woven mesh would not be possible.

Harp screens will generally screen at double the rate of the equivalent aperture woven wire and can be fitted to any side-tensioned vibrating screen, without modification to the screen body.

Cross harp wire screen
A cross harp wire screen (piano screen) is made up of single strands of straight, highly tensioned wire, connected at either end of the screen with a sheet metal hook. Spacer strips sit over the top of capping rubbers to maintain correct aperture. This produces a long, uninterrupted slot between the capping rubbers.
**TIRO® and Poly-Vibe**

**Poly-Vibe® Screen Panel**
Poly-Vibe® (polyurethane vibe) panels are screens with non-woven wires bound together by polyurethane bands to reduce, or even eliminate blinding and pleggling of screen surfaces.

The polyurethane bands are located above the bucker bars creating a flat surface in which the wires can move independently. The flat, more active screen surface reduces build-up and increases throughput, virtually eliminating the need to shut down for screen cleaning.

Poly-Vibe is used in both quarrying and mining screening applications.

**Tiro® Panels**
Ludowici’s Tiro® or ‘tap in, rip out’, panels are an extension of the Poly-Vibe® panel in which smaller panels are snapped onto the support frame of the screen.

The flat, more active screen surface reduces build-up and increases throughput virtually eliminating the need to shut down a screen for cleaning.

Tiro is a safe, highly efficient, non-pegging, non-blinding modular wire screening system. Only worn panels need to be replaced and they are lighter and easier to handle than traditional woven wire screens.

**Ideal For**
- Sand and gravel industry
- Mineral processing

**Features and Benefits**
- Rectangular wires (not round) to improve wear results and provide higher open area.
- Only worn panels require replacement.
- Screen panels much smaller than a full-hooked screen panel.
- Screen panels are lighter and safer for maintenance teams.
- Easy replacement - carried out with a lever and mallet.

**Rubber Screening Systems**

FL Smidth Ludowici’s rubber screening systems compliment woven wire and polyurethane screens and can be used in tension mat, modular or special heavy duty steel backed formats.

Our rubber screening systems have been specifically developed to provide maximum screening performance and resistance to damage by cuts and abrasion. Our panels come in a range of standard modules and configurations or can be engineered to suit specific applications.

**Moulded Modular Screening Systems**

FL Smidth Ludowici manufacture moulded modular rubber screening systems from a range of premium high strength rubber formulations. The systems perform well in wet environments with reduced pegging and blinding in high moisture applications. They are designed to withstand the most aggressive environments.

**Punched Rubber Tension Mats**

**Thinner cloths**
- Thickness of 0.04in/3mm to 0.60in/15mm
- Single-ply fabric reinforcement

**Thicker cloths**
- Thickness of 0.8in/20mm to 1.4in/35mm
- Two layers
Polyurethane Tension Mats

FLSmidth Ludowici offer a comprehensive range of polyurethane tension mats. Polyurethane exhibits the elasticity of rubber and provides significant advantages for applications when used as a screening surface.

The distinct advantage polyurethane mats have over rubber is the accuracy of the cast apertures and resistance to sliding abrasion (longer wearing). Polyurethane tension mats allow for more precise screening compared to the punched apertures in rubber.

Screens
- Quartz
- Silicon
- Sand
- Gravel

Features and Benefits
- Fully cast screen cloth available in both slotted and square apertures.
- Thicknesses of 10mm, 20mm to 30mm.
- Reinforced using stainless steel hooks – tough durability.
- Screen cloths custom designed to suit light, medium or heavy duty application.
- Minimised pegging and blinding.
- Frequency of scheduled stoppages caused by screening surface failure reduced.

Ludodeck Panels

Ludowici Ludodeck are modular polyurethane panels that are simple to use, tough and effective.

The patented clipping system provides extra friction grip, providing a high panel security in the clipping rail. It also seals between the mating surfaces, preventing wear from the entry of fine material.

Available as PIP0 Two, PIP0 Three, KOKO and BPS modular screening systems.

Features and Benefits
- Used in standard modular & special heavy duty formats.
- Fully moulded and modular.
- Available in Ludowici Pipo Two® system and one-foot square modules.
- Tough and resilient fabrication.
- High resistance to cutting and gouging.
- Excellent performance in extreme temperatures.
- High abrasion and impact resistance.
- Noise minimisation.
## The Bolted Pin System

The bolted pin system (BPS) is a modular polyurethane screening surface that has been invented and designed by MESHCAPE TRADING to meet present and future demands of the crushing industry.

### Components

**Grommet**
A mushroom shaped bush that is spigoted into the disc top frame and “L” bolted into position securely latches the panel to the frame allowing high ‘G’ force operation of the machine. The ‘bolted’ assembly negate the need for over size pins or sleeves that become necessary when utilising the traditional pin system.

**Deflector caps**
A dome shaped deflector cap is secured into a groove in the panel to protect the L bolt assembly and acts as a deflector.
- International patent - PCT/ZA/000027
- South Africa patent - BPS 993662 Disc Top Frame 994719

### Screens

<table>
<thead>
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</tr>
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<tbody>
<tr>
<td>Mining and quarrying industry screening applications</td>
</tr>
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<td>Secure fixing method to operate on screening machines in the range of 4.8 to 10 ‘G’ force or more.</td>
</tr>
<tr>
<td>High open area for best production capacity per machine size.</td>
</tr>
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<td>User friendly system is a holistic approach to the screen deck where the screen frame is an integral part of the screening surface.</td>
</tr>
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<td>Fixing grommet bolted to ‘disc top’ stringer frame onto which the high open area spring steel reinforced panels are latched.</td>
</tr>
<tr>
<td>Dual function deflector cap positioned over the bolt extension to seal the fixing assembly whilst acting as a deflector of the material being screened.</td>
</tr>
<tr>
<td>Panels create the largest practical open area, where the aperture configuration allows, offset apertures are incorporated to ensure the best probability of screening by preventing highway fast tract of the product.</td>
</tr>
</tbody>
</table>

### Ludodeck Pipo Two® Perforated Plate Panels

Ludovic's PIPO, or ‘push in, pull out’, panels are designed to make the installation of heavy perforated screen surfaces easy.

Perforated screen surfaces are typically heavy, difficult to handle and unsafe to install. Ludowici has overcome these problems with the utilisation of the modular screen panel concept. The PIPO design combines a perforated steel screening surface and polyurethane to provide the clip down system. The panels are installed and un-installed by clipping and un-clipping them to and from a series of clip rails mounted in the vibrating screen.

### Screens

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</tr>
</tbody>
</table>

### Ideal for

- Mineral processing
- Aggregate industry

### Features and Benefits

- Panels are lighter and easier to handle.
- Panels are smaller and safer for installation and maintenance.
- Only worn panels require replacement.
- Variety of standard perforated plate screen surface materials and aperture shapes.
**Pipo Three® Modular Screen Panels System**

Ludowici’s next generation Pipo Three® modular screen panels system is the most economical consumable in today’s market.

The FLSmidth Ludowici engineering team have built upon the advantages of the innovative PIPO ‘push in, pull out’ system. Using a support structure that clips into Pipo Two® intermediate rails, Pipo Three® is a removable working screening surface. By separating the internal reinforcement and the screening surface, only the top section is replaced while the structural support remains in the machine to be used again, reducing the cost of screen maintenance.

The separated reinforcement and skin gives the mat a ‘live’ surface, reducing or eliminating blinding entirely. This means the open area is maximised for the life of the deck without costly and time consuming wash down and sticky, moist feeds with high clay can still be screened.

**Features and Benefits**

- Reduced operating costs.
- Ease of maintenance.
- Screwdriver assists in easy removal.
- Flexible design enables the skin to easily peel out.
- Frame slots into position.
- Skin locks into place.
- Lightest replacement screen element in the industry.
- Simplest, safest and most cost effective change over replacement process.
- Easy interchange with existing Ludowici Pipo Two® system.
- Lowest ongoing unit cost.

**Configurations**

Pipo Three® is available with varied configurations including:

- Efficient, accurate screening from 0.5-25mm.
- Custom designed screen dimensions.
- Apertures available in square, slotted, hexagonal and our unique boomerang patterns.

**Ideal for**

- Mineral processing
- Quarry industry

---

**XIF Aperture Screen**

The XIF screen panel is an advanced design modular polyurethane screen with a unique combination of cross and in flow apertures, allowing a closer placement of the apertures and providing one of the highest relative open areas available in the world today.

The patented XIF is the world’s most advanced and efficient polyurethane screen panel. It is specially designed for fine aperture applications, is hard wearing and comes on all our standard modular clip systems.

**Features and Benefits**

- Up to 30% greater open area providing substantially increased throughput.
- Minimal pegging.
- Superior efficiency in media recovery.
- Significantly lower moisture level on discharge.
- High wear resistance.
- Increased operating life.

**Configurations**

- Aperture sizes in 0.5mm, 0.63mm, 0.75mm, 1.0mm, 1.25mm, 1.4mm or 2.0mm.
- Custom aperture sizes available.

**Ideal for**

- Mineral processing
- Aggregate industry

**Standard dimensions of 305mm x 305mm (1ft x 1ft) or 610mm x 305mm (2ft x 1ft).**
Continuous Slot Aperture Panels

FLS Ludowici’s continuous slot is one of the highest open area, fine aperture modular screen panel in the world today, combining the advantages of the long wear life characteristics of polyurethane with the high open area pattern of profile wire.

Open area, or ratio of apertures to total panel surface area, is of crucial importance to screen users at a time when plants are upgrading capacity to increase profitability and maximizing screen performance.

Open area for the continuous slot pattern is about 40 to 50 percent greater than standard polyurethane modular panels of the same aperture, which means greater throughput through the same screen or alternatively much better quality of the screen products for the same feed.

In fine apertures, deviation from tolerance can lead to reduced recovery, large losses of valuable screen product and reduce plant profit. Continuous slot panels have +/- 10 μm standard deviation over the specified aperture size. Field tested over a period of two years in a number of coal screens, continuous slot panels can be used in any fine aperture (less than 0.06 in. / 1.5 mm) screening application. Continuous slot is compatible with horizontal or banana-type screen decks and is ideally suited for dewatering, de-sliming or fine classification and drain/rinse heavy media recovery applications.

The continuous slot aperture design is compatible with the Pipo® Two and Pipo Three modular systems.

Koko® Modular Panel Systems

Ludowici’s Koko® ‘knock on, knock out’ modular panels system is the world’s most advanced and efficient polyurethane screen panel.

The Ludowici Koko® system delivers the functional and economical advantages of a removable screening surface module for screen decks with a one-foot-square formatted support frame. It has a Koko® pin securing system that stays in place in the poly-encased panel support structure, enabling fast and simple panel change outs.

**Ideal for**
- Mineral processing
- Quarry industry

**Features and Benefits**
- Lightest replacement screen element available in this format.
- Open area equal or better than any one-foot-square system.
- Simplest, safest and most effective change-out replacement process.
- Easy changeover from other pin systems.
- Lowest ongoing unit costs.
**Wedge Wire Trommel Screen**

Ludowici's wedge wire trommel screens are highly efficient cylindrical rotating wedge wire screens used to separate solids from liquids or solids from solids.

The flow of material is fed into the inside of the drum and the screen and centrifugal rotating action forces any particles smaller than the slot size through the screen and any particles larger than the slot size off the end of the screen.

The wedge shape of the profile wires helps to minimise pegging and blinding. FLSmidth Ludowici supplies complete trommel units, including a motor and base frame, or a replacement screen for existing units.

**Ideal for**  
- Sugar industry  
- Fruit processing industry  
- Mineral processing  
- Sewerage treatment  
- Fertilizer processing  
- Abattoirs

**Features and Benefits**  
- Long lasting stainless steel.  
- Higher flow capacities.  
- Lower capital cost and maintenance.  
- Rotating screen available in a range of sizes, profile wires, apertures and material grades to suit every application.

---

**Perforated Plate**

Perforated materials have been used for screening and sorting for as long as, if not longer than, woven wire screen cloth. Manufacturing a perforated plate involves cold punching sheets with an arrangement of holes in various shapes, sizes and patterns.

**Specifications**  
Perforated sheets can be manufactured with the following types of holes in a wide variety of patterns:
- Round
- Square
- Rectangular
- Oblong
- Hex
- Slotted.

**Ideal for**  
- Sand and gravel  
- Mineral processing  
- Aggregate industry  
- Scalping  
- Sizing

**Features and Benefits**  
- Strong and durable.  
- Smooth topped and resistant to winding, aging and corrosion.  
- Locally manufactured.  
- Available in almost any type of material e.g. high carbon, stainless steel, mild steel and other alloys.  
- Available in a full range of thicknesses.  
- Custom designed with expert technical advice.

Subject to the thickness of the material, the aperture type and the size of the plate, FLSmidth Ludowici can produce:
- Perforated plates from 0.2mm up to 16mm thick.
- Aperture sizes varying from 0.50mm to 0.90mm.

The latest relevant international specifications pertaining to apertures sizes on all manufactured perforated materials are applied including:
- BS 1449
- BS 1669
- BS 7613
- ISO 10630.