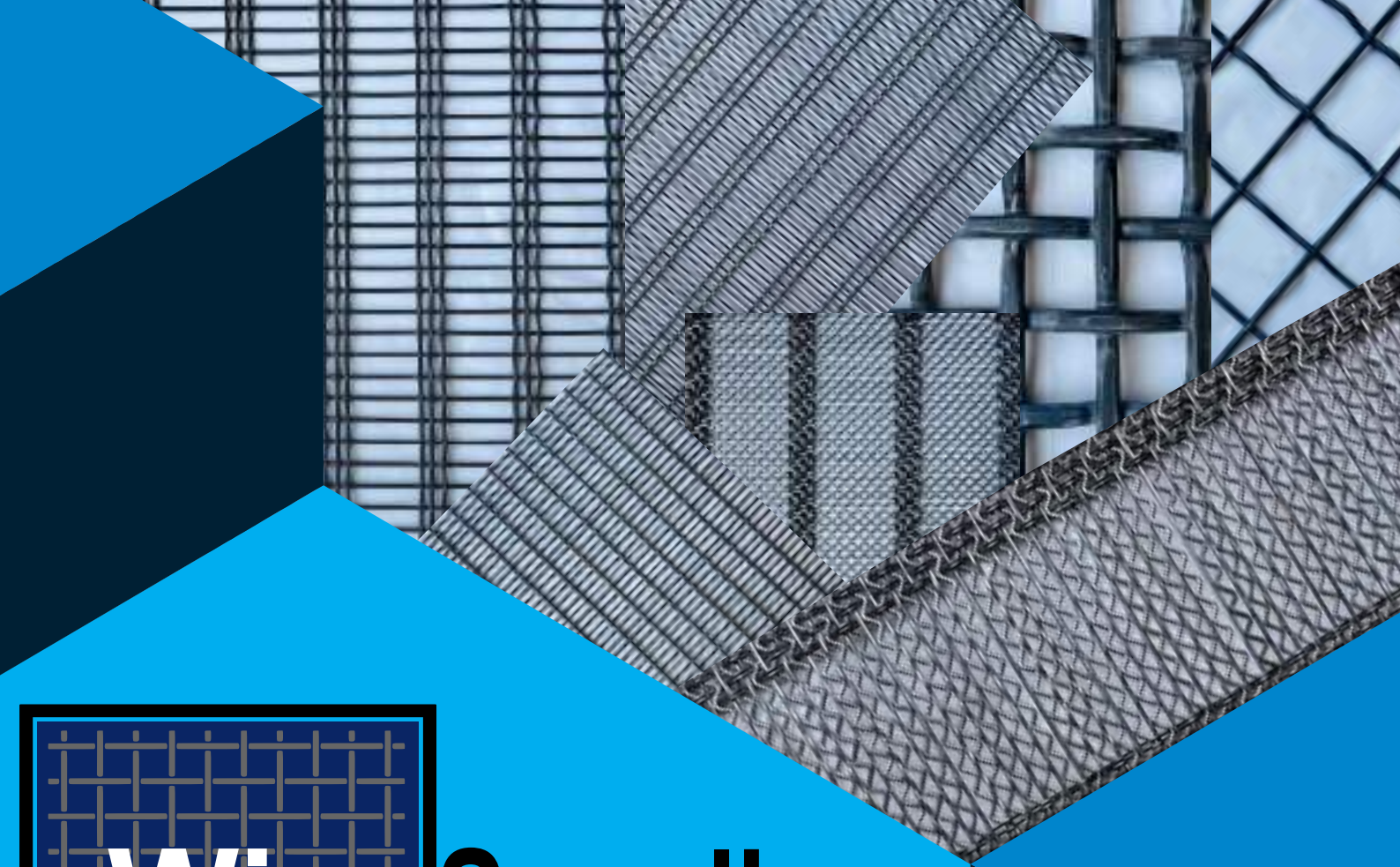


Wire Supplies

Screening Services (Pty) Ltd

Brochure

The leading Manufacturer of
Woven Wire Screen Cloth

2022

Next

INTRODUCTION

At Wire Supplies Screening Services we are committed to precision screening products, innovation and dedicated services for our customers. This brochure is compiled to give prospective users an indication of our range of products. In this brochure,you will find information and specifications on many screens.

However, if you can not find the screen that you require, you are invited to contact us with your specific needs. Any material that has to be screened presents its own particular requirements. Our technical staff are available to advise on screens that will solve your problems and provide optimum production.

Wire Supplies Screening Services has been created with the vision to become the industry leader in supplying the highest quality woven wire screens in the global mining and aggregate industries, by becoming the first wire weaving operation with its own raw material manufacturing plant in South Africa. We have invested in state of the art weaving equipment. The equipment has been proudly manufactured locally by a highly reputable engineering company with 40 years of experience in the wire manufacturing industry.

Our raw material manufacturing plant is situated in Alrode Gauteng and is home to a state of the art wire drawing facility where we manufacture wire from 0.90mm to 12.50mm. The screen manufacturing facility is located five kilometers from the wire drawing facility resulting in a low stock-holding and reduces costs. By manufacturing our own raw materials we would have competitive advantage resulting in lower prices to our customers. We have also installed equipment to assist customers, in the event of a breakdown, to cut the delivery time considerable.

We own our own trucks for local deliveries and therefore can guarantee reliable deliveries.

We trust this information gives you , our valued customer, a good overview of the capabilities of our company and we invite you at your convenience to visit our production facilities for a tour.

Table of Contents

Woven Wire Screen Cloth

Screen cloth is a generic term, this is normally broken down into two distinct groups largely due to the methods employed in their manufacture. These are:

Woven Wire Mesh
Screens Products applies this term to all woven wire products that are manufactured using a wire diameter of 0.70mm or less.

Our sister company Screen and Industrial Solutions Supplies do stock most of the fine mesh ranging from a 0.025mm - 0.90mm wire diameter.

The Manufacturing process employs the use of automated looms, which use uncrimped wires. The operation of the loom, by virtue of its mechanism and final setting, controls the finished aperture in the weaving direction and introduces the crimp that locks the wires into place. The aperture across the weaving width is predetermined by the initial setting of the wires into the machine.

Woven Wire Screening
Screen products applies this term to all woven wire products that are manufactured using a wire diameter of 0.71mm or greater.

Unlike woven wire mesh the process employed to manufacture woven wire screening is manual. The wire are pre-crimped to size prior to being set into the loom. The aperture is predetermined by the crimped wire.

Woven wire screens has a array of intersecting wires, similar to a woven cloth. Typically, the wires are woven over and under perpendicular wires producing a stable sheet.

Applications for Screens

The most common applications for screens are used in industrial and manufacturing work, particularly filtration and separation. Wire screens is used in wastewater treatment plants, petrochemical facilities and juice manufacturing to reachable desired pulp level.

Among the most common industrial applications for wire mesh are:

- Agriculture
- Automotive
- Chemical and Petrochemical
- Coal
- Construction and building
- Food and beverage
- Mining
- Plastics
- Pharmaceuticals
- Textiles

It can also be used in commercial products such as insect screens or animal fences. Among the other uses are:

- Security mesh to protect windows or stairwells
- Fireplace screens
- Gutter guards
- Bird screens
- Ventilations

Materials

Woven wire screen cloth can be manufactured from any material that is sufficiently malleable to enable it to undergo the deformation associated with the different weaving methods:

Steel

- High Carbon Steel, Mild Steel, Galvanized Mild Steel

Plain, low carbon steel, because of its relative low cost, tensile strength and ductility, is often used for manufacture of woven wire screens. It is used in applications where corrosion or abrasion resistance are note controlling factors and where contaminations of products are not critical.

High Carbon Steel is a special developed high carbon spring steel wire for use under severe working conditions, where resistance to abrasion, shock, vibration and heavy loads is essential and corrosion resistance is secondary. High Carbon Steel has all these properties but is also ductile and therefore extremely suitable for tensioned screen cloths.

304/316 Stainless

- Chromium steel, nickel, chromium molybdenum steel, heat resisting steel

These alloys contain chromium and nickel in proportions that make them austenitic at room temperatures. They are not magnetic in the annealed condition but become slightly magnetic when cold worked. Superior corrosion resistance and strength at high temperatures are the primary reasons for the choice of these alloys. The AISI304 (18% chromium and 8% nickel) and AISI316 (17% chromium, 10% nickel and 2% molybdenum) for higher degree of corrosion resistance due to the addition of molybdenum.

The product range for woven wire screens include:

- Standard Rolls
- Roll sections
- Sheet with fixed dimensions
- Hooked screens
- Trommel screens
- Strips

Type of Weaves

- **Plain Weave**

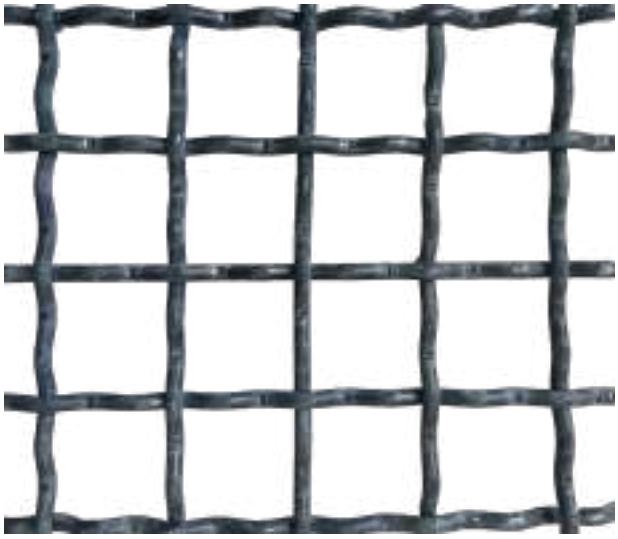
Plain weave is most basic of three fundamental types of textile weaves. It is strong and hard wearing and is used for fashion and furnishing fabrics. In plain weave cloth, the warp and weft threads cross at right angles, aligned so they form a simple crisscross pattern. This weave is applicable to a wide range of specifications where the aperture to wire ratio is 5 or less.

- **Flat Top**

Flat top is a square or slotted pattern that places all the crimps on the underside of the screen, creating long smooth runs of wire on the top surface. The flat surface results in less frictional resistance to the aggregate that is being screened, this will result in a longer life of the screen cloth

- **Inter-Crimp**

Inter-crimp refers to the use of extra crimps between intersections to provide rigidity and locking tightness for light wires in relationship to the wire opening. This type of construction allows for rectangular and square openings in a large variety of sizes. The weft and waft wires are interwoven with three or five crimps per aperture. This used when the wire ratio is in excess of 5.



- **Lock-Crimp**

Lock-crimp is characterized by straight sections of wire connected by a well-defined "bump" at the wire intersections, such a manner to actually "lock" the wires together, offering further assurance of no wire movement. A modified plain weave, additional mini crimps are introduced on either side of the main crimp. This is applicable when the aperture to wire ratio is in excess of 5.

- **Slotted Screens**

Slotted screens can be woven to have a long aperture with or against the material flow. Slotted screens are designed because of the need to:

1. Maximize open areas.
2. Less blinding when screening damp material.
3. Raise screening efficiency.
4. Improve the effective working life of the screen.

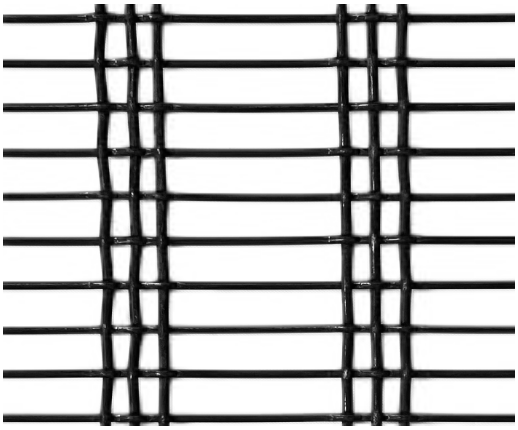
Slotted Screens

Slotted screens are broken up in to 3 categories:

- **Single Shute Construction:** Any woven wire screen cloth constructed with a single wire bridging the narrowest aperture i.e. at the end of the slot. Available in plain, inter-crimp and flat top weaves
- **Double Shute Construction:** Any woven wire screen cloth constructed with two wires bridging the narrowest aperture i.e. at the end of the slot. Available in inter-crimp weave only.
- **Triple Shute Construction:** Any woven wire screen cloth constructed with three wires bridging the narrowest aperture i.e. at the end of the slot. Available in inter-crimp weave or flattop

Single Shute

Double Shute



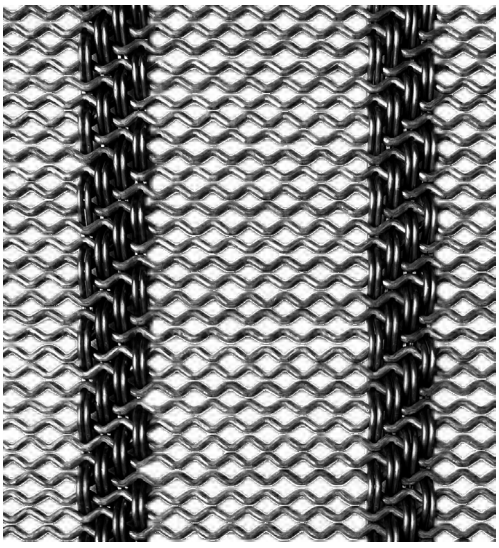
Triple Shute

- **Harp Screens**

Harp screens, unlike woven screen cloth, are made up of individually tensioned wires that are straight and run hook to hook. These wires move independently of each other during the screening process and cut through the material. Screens at double the rate of the equivalent square aperture woven wire. Used for difficult materials where blinding and pegging makes screening with square apertures difficult. Giving Harp screens the advantages like higher production rates, offering maximum percentage of open area, no cross wires, therefore no corners for fines to build from.

- **Square Harps:** Serpa- (Flex)-Harps consist of crimped screens wires arranged one after another building thereby square meshes. In order to achieve stability for the screens, the crimped longitudinal wires are linked at definite spacings by wires. Used to give maximum capacity, good conformity to the nominal aperture size range with anti-blinding feature being greatly improved.
- **Tria-Harp:** Similar to the square harp, but is includes wires of thicker diameters, running between the adjacent crimped wires. The additional wires are normally thicker making the screen more robust and introducing a second harmonic to the screen media, making them even more efficient than the square harp in difficult processes. The non-blinding characteristics are further improved by the dissimilar wires vibrating at different amplitudes and frequency.

Harp Screen



Tria-Harp Screen

Descriptions and Measurements

- **Defining Aperture Size**

The two types of screen cloth are dealt with in different ways, although the “mesh” description may be used down to the 10 mesh.

- **Woven Wire Mesh**

Normally referred to numerically, it refers to the number of openings per lineal inch. The datum used is the center of one wire, the number of apertures to a point one inch distant is then counted. This then describes the mesh e.g. 18 apertures equal 18 mesh.

If the count does not come to a whole number, actual opening or aperture should be specified in microns and when it is specified in microns this refers to the aperture size or space between wires.

- **Woven Wire Screens**

The aperture size or space between the wires is given as a dimension e.g. 26mm square aperture.

- **Woven Wire Screening - Standard Square Apertures**

1.	Heavy	-	1901 to 2250 kg per cubic meter - heavy ores - high abrasives.
2.	Medium Heavy	-	1601 to 1900 kg per cubic meter - moderate ores - moderate abrasives.
3.	Medium	-	1201 to 1600 kg per cubic meter - moderate abrasives, lime stone, grave.
4.	Light	-	801 to 1200 kg per cubic meter - coal, non-abrasives.

- **Aperture Size vs Wire Diameter**

The most import factors affecting the selection of wire are normally:

1. Abrasiveness of aggregate being screened.
2. Open area of subsequent screen cloth.

- **Standard Description**

The same format applies to woven wire screening as for woven wire mesh:

40Ap x 10 x 1830 x 1220
1 x 2 x 3 x 4

- **Legend**

1. 40 Ap = Aperture size required
2. 10 = wire size required
3. 1830 = Length of screen cloth
4. 1220 = width of screen cloth

- **Variables**

The following examples show how these variables are added. Woven wire screening: Vibro Optimax 40Ap x 10 x 1830 x 1220 alternatively for an over-hooked screen cloth: HIgh Carbon Steel 40Ap x 10 x 1830 x 1180 x OH. Construction and special requirements may be required, again these are added in the form of narrations: woven wire screening - AISA304 (8 x 40)Ap x 2.5 x 1220 x 1790 x OHME.

- **Narration**

Slot parallel with 1790 dimension. Triple shute construction. Inter-crimp weave.

1. Galvanized metal edges.
2. Metal Edges to be 1220 + overlap 20 one side only

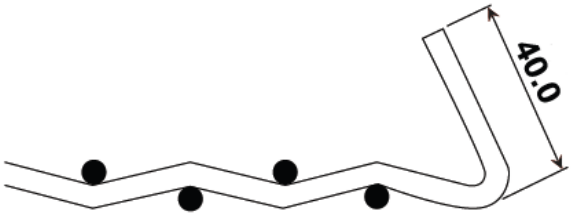
- **Alternate**

1. Alternatively woven wire screening: High Carbon Steel (4 x 12)Ap x 2 x 2000 x 1000
2. Slot parallel with 1000 dimension
3. Single shute construction
4. Inter-crimp
5. Tolerance on 2000 dimension +0; -6
6. Tolerance on 1000 dimension +0; -6

- **Standard Hook Arrangements**

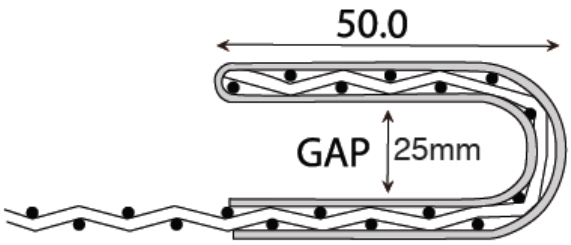
The most popular hook arrangements used throughout the industry are shown below. The hook itself is at approximately 45° to the screening surface, hook lengths are between 19mm and 40mm, subject to the type of hook arrangement.

1. **Plain Hook:** For wire diameter greater than 4.00mm
2. **Metal Edge:** For wire diameter of 3.15mm down to 0.71mm
3. **Double Fold Metal Edge:** For wire diameter of 0.70mm or less down to 75mesh
4. **C-Shape Metal Edge:** C-Shape Metal Edge is used mainly on mobile screens for end tensioning.
5. **C-Shape Weld On:** For wire diameter greater than 6.00mm

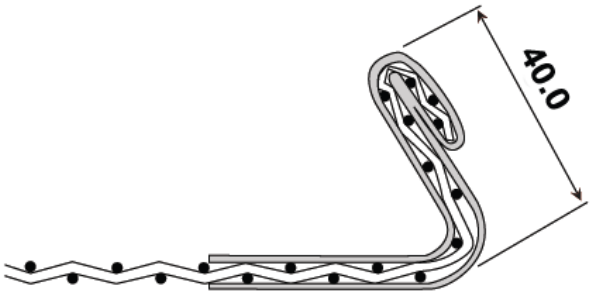


Plain Hook (OH)

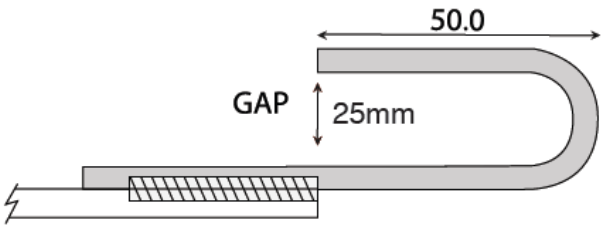
Metal Edge (OHME)



C-Shape Metal Edge (OHCME)



Double Fold Metal Edge



C-Shape Weld On (OHCWO)

Hooks

Poly Ripple Screens

Poly Ripple Screens were originally designed to take the self-cleaning properties of the standard wire ripple screen, developing it into a longer laster screen while delivering a more precise cut point, so it is in wet conditions that they truly come into their own.

Poly Ripple Wire Mesh Screens Panels are designed for high abrasion applications where the material has tendency to blind or peg. Produced using abrasion resistant polyurethane profiles molded over straight and crimped high quality steel wires, Poly Ripple Wire Mesh Screens could provide superior wear life.

- **Features**

Poly Ripple Screens can be manufactured with apertures between 2.5mm and 32mm and are very efficient across this range. Ripples can be manufactured with a larger aperture where necessary but their efficiency lies within this range.

Poly Ripple's are constructed from a combination of crimped wires held in place by means of abrasive resistant polyurethane. A long lasting and highly efficient screen, they offer many advantages over conventional woven wire.

Using the same principle as the wire ripple screens, which offered many advantages in the past, the ripple has now been improved by the addition of polyurethane.

It has proved to be a great asset to the mining and quarrying industries, offering these benefits:

- **Pegging or Blinding**

Is reduced, as the very active wires are not woven together. With less pegging, the result is clean screen surface and optimum area throughout the screening process. These active wire will not allow the build up of ultra-fine particles, which in time completely cover or blind the screens.

- **Lighter Screens, which leads to easier installation**

Poly Ripple is lighter than woven wire and therefore is easier to handle and install.

- **Increased wear life**

The Poly Ripple is longer lasting than woven wire and wire ripple, which therefore reduces maintenance and saves costs.

- **Construction**

There are four main parts to the Poly Ripple:

1. Crimped wire are laid on their sides from an aperture, and are held in position by means of moulded polyurethane strips.
2. These poly strips are designed to sit over the support bars or stringers of the screens when fitted. This allows for maximum screening area uninterrupted by polyurethane. The aperture that is formed by this process allows wire to vibrate independently, as they are not woven together.
3. The Poly Ripple is fitted to be vibrating screen in the same manner as normal woven wire. That is, it is supplied with hoked edges to fit all makes of side clamps and cambered decks.
4. When fitted to machines with center hold down bars, the Poly Ripple is supplied to suit complete with bolt holes already cut.

- **Heavy Duty Impact**

The Poly Ripple screens can be constructed with an area of solid polyurethane as an impact zone.

This blank impact zone will stop the wires from opening up if the drop height is too great, or where the feed onto the screen is too harsh and tends to wear the first screen out prematurely.

To gain even wear-life out of the full set of Poly Ripple down the screen, an impact zone on the first mat may be desirable.

The ideal solution process is to inspect the worn area of the mat to be replaced, and only specify this particular area to be blanked off. This will ensure that the screening area is not reduced unnecessarily.

- **Standard Apertures to Wire Diameters**

The general rule for the correct wire diameter for a given aperture, is that it is the next gauge down from what would normally be supplied in woven wire.

For example 12.50mm aperture in 4mm wire, 6.3mm aperture in 2.50mm wire and so on.

Specification & Confirmation Sheet

2 Jurie St Alrode
Tel: 011 864 2174
P.O. Box 146009
Brackengardens
Alberton
1452
E-mail:
reception@wirescreening.co.za
Co Reg No. 2009/000773/07

Flat Woven Wire Screens
Specification and Confirmation Sheet

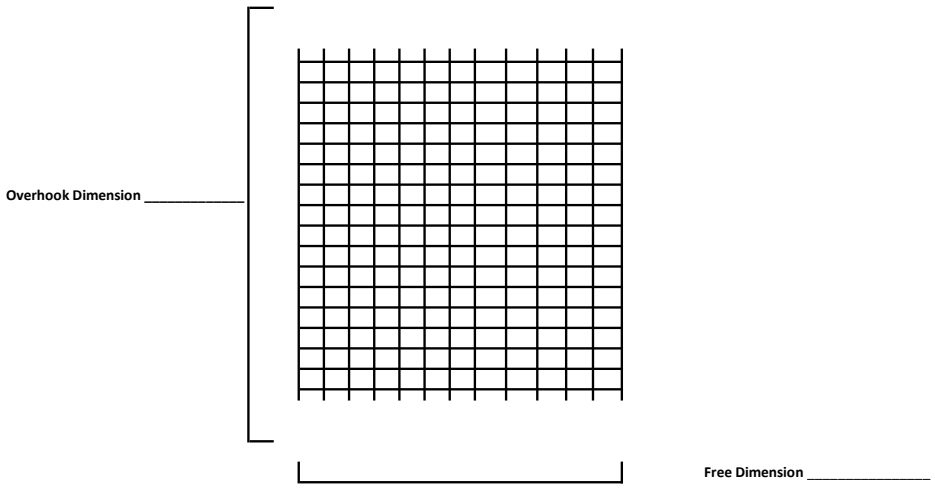
Company Name:

Date:

Contact Person:

Contact Number:

Signature:



Sizes of Screen:

Qty: _____ Free Dimension : _____ Overhook Dimension : _____

Apperture : _____ Wire Diameter: _____

Wire Type :

High Carbon		SS 304		Galv	
Mild Steel		SS 316			

2 Jurie St Alrode
Tel: 011 864 2174
P.O. Box 146009
Brackengardens
Alberton
1452
E-mail:
reception@wirescreening.co.za
Co Reg No. 2009/000773/07

Overhook Woven Wire Screens
Specification and Confirmation Sheet

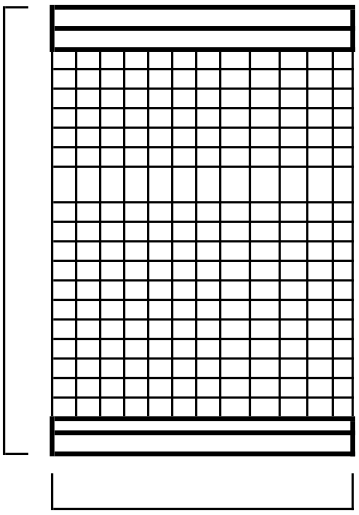
Company Name:

Date:

Contact Person:

Contact Number:

Signature:



Sizes of Screen:

Qty: _____ Free Dimension : _____ Overhook Dimension : _____

OH Length: _____ Apperture : _____ Wire Diameter: _____

Wire Type :

High Carbon		SS 304		Galv	
Mild Steel		SS 316			

Overhook Type :				Type of Weave:	
45 Hook		C- Shape		1 Sinus Weave (Plain weave)	
				2 Double Crimp	
Metal Edge		IH		3 Lock Crimp	
				4 Flat Top Constuction	
IHME		C-Shape W/O			

Screen Hooks :

Normal Overhook		One hook up		Flat Screen	
		One hook down			

2 Jurie St Alrode
Tel: 011 864 2174
P.O. Box 146009
Brackengardens
Alberton
1452
E-mail:
reception@wirescreening.co.za
Co Reg No. 2009/000773/07

Slotted Woven Wire Screens
Specification and Confirmation Sheet

Company Name:

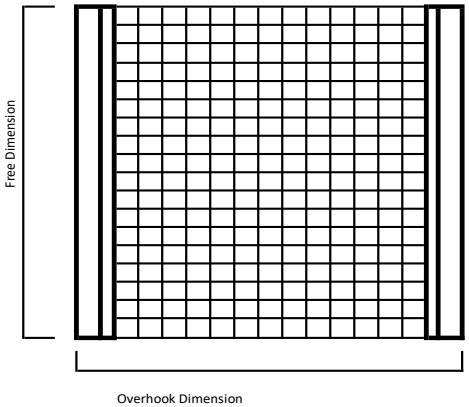
Date:

Contact Person:

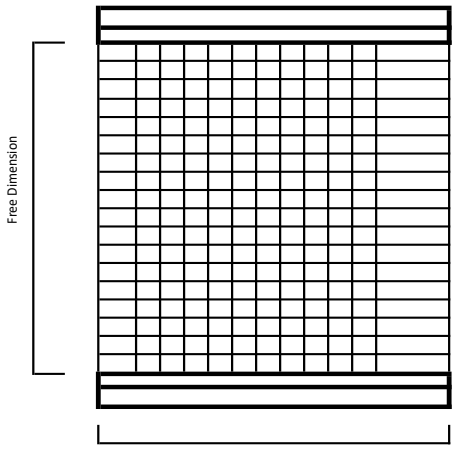
Contact Number:

Signature:

SWF - SLOT WITH FLOW



SAF - SLOT AGAINST FLOW



Sizes of Screen:

Qty: _____ Free Dimension : _____ Overhook Dimension :_____

Apperture : _____ Wire Diameter:_____

Slotted: _____ x _____ Slot Parallel to:_____

Wire Type :

High Carbon		SS 304		Galv	
Mild Steel		SS 316			

Overhook Type :				Type of Weave:	
45 Hook		C- Shape		1 Sinus Weave (Plain weave)	
				2 Double Crimp	
Metal Edge		IH		3 Lock Crimp	
				4 Flat Top Constuction	
IHME		C-Shape W/O			

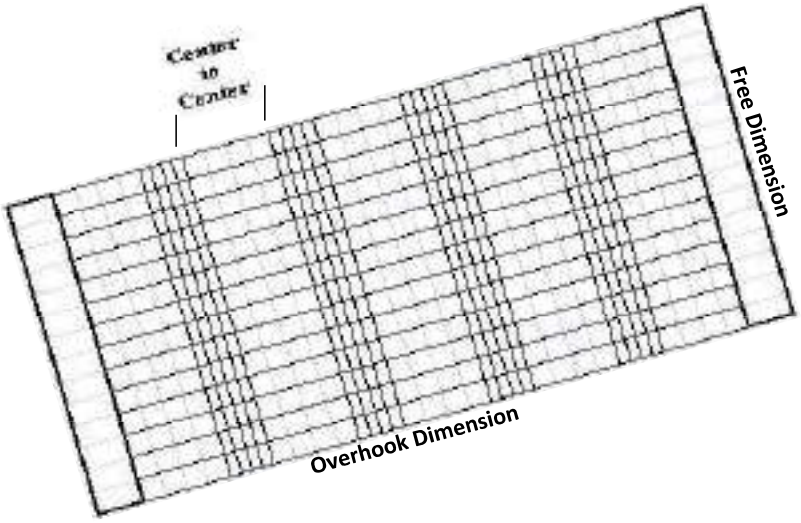
Screen Hooks :

Normal Overhook		One hook up		Flat Screen	
		One hook down			

2 Jurie St Alrode
Tel: 011 864 2174
P.O. Box 146009
Brackengardens
Alberton
1452
E-mail:
reception@wirescreening.co.za
Co Reg No. 2009/000773/07

Harp and Tria Harp Woven Wire Screens
Specification and Confirmation Sheet

Company Name :
Date :
Contact Person :
Contact Number:
Signature :



Sizes of Screen:

Qty: _____Free Dimension : _____Overhook Dimension : _____

OH Length: _____Apperture : _____ Wire Diameter: _____

Distance from center of locking wire to center of next locking wire : _____

Number of Locking Wires : _____

Type of Harp: **Harp** ☐ **Tria** ☐

Wire Type :

High Carbon		SS 304		Galv	
Mild Steel		SS 316			

Overhook Type :				Type of Weave:	
45 Hook		C- Shape		1 Sinus Weave (Plain weave)	
				2 Double Crimp	
Metal Edge		IH		3 Lock Crimp	
				4 Flat Top Constuction	
IHME		C-Shape W/O			

Screen Hooks :					
Normal Overhook		One hook up		Flat Screen	
		One hook down			

Our Quality Policy

Wire Supplies Screening and its employees are committed to be a world-class manufacturer of woven wire screens and to deliver excellent quality wire screens that will meet or exceed the requirements and expectations of our clients.

We as a group of employees are responsible for achieving the company's objectives and goals, to ensure the effectiveness and efficiency of the quality system and to meet the demands and needs of our customers. We as a company strive to do it right the first time.

The company will strive to continuously improve our quality system, our service and products to the ultimate satisfaction of our clients.

Wire Supplies Screening Services (Pty) Ltd

“Quality in Everything We do”

2 Jurie Street
Alrode
Alberton

P.O.Box 146009
Brackengardens
1452

Tel: 011 864 2174
email: reception@wirescreening.co.za

Back to Top