Woven Wire Cloth
**Wire cloth is versatile**

Hi tech filtration or insect screening – it’s all wire cloth!

The list of applications is endless...

- sifting
- filtering
- carrying
- protecting
- strengthening
- designing
- classifying

... and we find new ones every day.

The variations of metal wire mesh and its design options are abundant!
**Dorstener wire weaving**

We have been manufacturing wire cloth on automated looms for more than 60 years. Today we mainly weave corrosion and heat resistant alloys with openings from a few microns up to 3/4”.

Our weaving facilities in Germany, Czech Republic and China produce wire mesh at an economical price and with the highest quality standards.

Mesh design and quality is planned and controlled carefully according to the requirements of our customers.

Many years of experience, together with state of the art equipment, help to make our mesh a first choice for not only filtration and sifting solutions, but also for architectural and microelectronic applications.
**Wire cloth for general use**

An important factor to consider is the type of weave and the corresponding opening. Square weaves are most common. Sifting and sizing is a classic application of square weaves.

### Formulas (only for wire cloth with a square or rectangular opening)

- **Opening Size “O”**
  \[ O = \frac{1 - DM}{M} \]

- **Wire Diameter “D”**
  \[ D = \frac{1 - MO}{M} \]

- **Mesh Count “M”**
  \[ M = \frac{1}{O + D} \]

- **Open Area Percentage “A”**
  \[ A = (OM)^2 \times 100 \]
  \[ A = \left(\frac{O}{O + D}\right)^2 \times 100 \]

### Inch/Micron Conversion

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### Reference list square meshes

**Examples of Standard Square Mesh (many more available)**

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For more information visit www.dwt-inc.com
Plain weave
The most common weave for woven wire cloth with a square opening is the plain weave. It offers a precise and consistent opening and therefore it is often used for sifting and sizing.

Twill weave
A twill weave is often used when a mesh requires a specific opening and a larger wire diameter. This style of weave is also used for deep drawing applications. If greater stability is needed, it is woven with a herringbone pattern.

Rectangular mesh opening
Wire cloth with a rectangular opening is mainly woven in plain weave with an aspect ratio 3:1. Other ratios are also available. A special broad opening for large open area is produced in triple warp weave.

Alternative wire options
The typical weaving wire is round. By using flat wires, cables or plastic yarns, new or additional features of mesh can be achieved. Often mechanical stability or flexibility is a goal.
Filter cloth
Filter cloth is typically woven with wires very close to the adjacent wire in warp or shute direction.

The micron rating of a filter cloth can be calculated knowing the mesh geometry or often better, being tested under real process conditions. Filter cloth has micron ratings of 5 - 500 micron.

Plain Dutch weave
In this weave the shute wires are woven in a plain weave (1/1) close to the foregoing wires. Plain Dutch weave filter cloth is primarily used in filtration applications. If required, the wire diameter and mesh count can be modified to achieve new filtration characteristics and specific micron ratings.

Twill Dutch weave
Twill Dutch weave (2/2) is woven much denser than plain Dutch weave and therefore smaller micron ratings can be achieved. The mesh surface is also smoother than a plain dutch weave.

Atlas weave/ 5-heddle weave
The atlas weave is a form of twill weave, woven with 4 wires up and 1 wire down. This results in a smooth surface on one side and a rough surface on the other side. Because of its smooth surface, atlas weave is often used if the filter cake needs to be easily removed.

Reverse Dutch weave
Reverse Dutch weave is also called PZ mesh. This weave has a high number of warp wires and therefore a very high strength in warp direction. It can be woven in plain and twill weave configurations. The pore size is generally not as consistent as in regular Dutch weaves.
Material for Woven Wire Cloth
Material for woven wire cloth

The choice of the material or alloy does not only determine the corrosion and heat resistance but also the mechanical stability and the appearance of the woven mesh.

**Stainless steel**
There are many austenitic and ferritic stainless alloys to choose from. We also weave duplex alloys.

**Low and high carbon steel**
Low carbon steel and variations of coated steel wires are mainly selected for cost reasons. They can be coated (e.g. galvanized) before or after weaving. High carbon steel is generally used for better abrasion resistance and higher strength.

**Non-ferrous metal**
Non-ferrous metals like aluminium, copper, brass, nickel and even titanium have special features that can be woven into wire cloth.

If applications require precious metals such as gold and silver, the wire can be drawn and woven.

To choose your material you can find detailed data at: www.dwt-inc.com
Options

Length and width: Industrial wire cloth is mainly woven in rolls up to 120” wide. Wider widths are available upon request. Narrow width mesh (down to \( \frac{1}{2} \)) is normally cut on slitting lines. Depending on the style and weight of the mesh and the loom, rolls can be woven in length up to 1,000 feet.

Woven edge: Strips or narrow coils with woven edges are used to be spirally wound around cylindrical filter elements.

Stretching: Wire cloth is woven under tension. It sometimes has memory and a slight curl. Using the right stretching equipment can reduce stresses and produce flat mesh.

Cleaning: We clean and degrease wire cloth in rolls up to 60” wide.

Calendering: Calendered wire cloth has a smooth surface and is more rigid.

Heat treatment: Annealing of wire cloth in a vacuum oven helps to form and deep draw critical products.

Surface treatment: The corrosion resistance and appearance of stainless steel mesh can be improved by passivation through pickling or electro polishing.

Laser cutting: We can laser cut wire cloth in an endless number of geometric shapes.

Development and design of wire cloth structures

Sintered laminate
Often single layers of filter cloth are not strong enough to withstand the stresses of fabrication or product application. Diffusion bonded (sintered) laminates of wire cloth can be designed so they do not only have increased strength but also improved filtration characteristics.

Sandwich screen
Our sandwich screen is used when large size filter mesh requires support or in air intake applications.

Fabrication
Our fabrication possibilities – from laser cutting and plasma welding, stamping and deep drawing to adding steel frame or plastic edging – support new mesh product design.

Service
Having a complete range of woven mesh on stock allows us to ship fast. All processing and fabrication jobs can be performed just in time.