亿利达
YILIDA METAL MESH

MICRO EXPANDED METAL

CATALOG

2022

MICRO EXPANDED METAL MANUFACTURER & SOLUTION PROVIDER

YILIDA

– NEVER STOP INNOVATING

CONTENTS

YILIDA

"Micro Expanded Metal
Manufacturer & Solution Provider"

Founded in 1984, YiLiDa Metal Wire Mesh Co., Ltd. has more than 37 years' experience in developing, innovating, manufacturing and export of micro expanded metal. Yilida is your ideal micro expanded metal material manufacturer and micro expanded metal solution designer and provider.

Nowadays, main business of micro expanded metal covers aerospace, wind energy, electromagnetic shielding, automotive, filtration, acoustics and so on. And Yilida is continuously innovating to supply better products to solve more difficulties and match with more applications and industries.

We are willing to cooperate and grow together with all our honored customers to develop and innovate more practical micro expanded metal products and solve more challenges.

Mr. Song Tieling
National Standard Drafters

To assist the development of the industry, Mr. Song Tieling, chairman of Yilida, and his team actively offered suggestions and became one of the important drafting enterprise in the new national standard (GB/T 33275-2016) by summarizing the experience and data accumulated in the past, making contribution to promoting the standardized production of the industry.

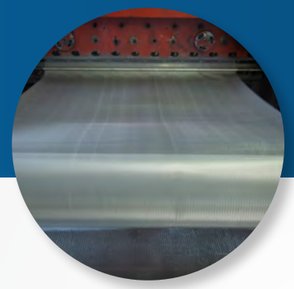
www.wiremesh-yld.com

STRONG CAPACITY

Yilida has a complete line of precision micro expanded metal, which can produce products of different sizes and thicknesses, with an annual output of 5 million square meters.
We can provide stainless steel, titanium, nickel, zirconium, aluminum, copper, carbon steel and other materials of precise expanded metal, and provide chrome plating, platinum plating, titanium plating, electrostatic spraying and other surface treatment process to meet the various needs of customers.

25
Production Lines
Focus on micro expanded metal, expanded metal & perforated metal production.

13
R&D staff
Committed to developing and innovating more products and applications for customers.



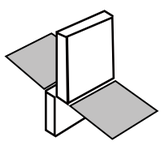
50+
Equipment
Imported and independent improved equipment guarantee the stable supply and accurate quality.

100+
Skilled Workers
Help to reduce production loss, improve production efficiency and decrease products tolerance.

34000
Factory Area
Satisfy continuously increasing orders, production needs and innovating input.

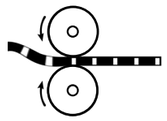
5000000
Annual Output
Satisfy large and urgent orders and serve better for our customers all over the world.

5
Steel Plate Shearing Machines
Cut raw material coils into sheets/plates and custom length for the next process of micro expanded metal.

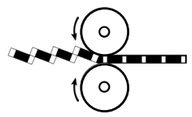


25
Punching Machines
Standard and independently improved machines satisfy different thicknesses, opening sizes, widths and lengths.

4
Leveling Machines
Leveling machine can make the micro expanded metal into a flat sheet with minimal wave and buckle.

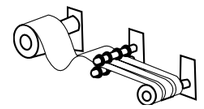


5
Flattening Machines
Flatten 3D micro expanded metal into flattened products for reducing overall thickness and specific applications.



5
Recoilers
Wrap the micro expanded metal roll into tightened rolls and prepare for the following package progress.

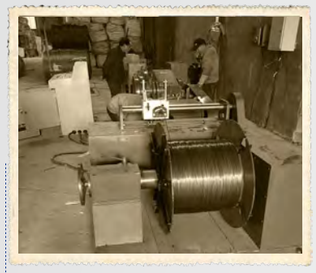
3
Slitters
Slit the micro expanded metal into stripes for specific applications. The maximum slit width is 1300 mm



2
Cutting-Into-Piece Machines
Cutting sheet or rolls of micro expanded metal into pieces as request. Max. Diameter of piece is 1300 mm.

2
Bending Machines
specific shapes. The maximum width of micro expanded metal to bending is 3200 mm

HISTORY



1984

Mr. Song Tieling started his business career, he built a factory of about 200 m^2 and bought several wire drawings machines. The main business was to produce steel wires for weaving factory.

1991

Run a shop at Anping and purchased the first expanded metal production machine to start transform the business from steel wires to expanded metal mesh for native market and established the foundation for the future development.

2003

The government promoted the development of Wire Mesh industry and established the industrial zone. Yilida purchased 8000 m^2 land for enterprise production and development.
At the same year, Yilida improved the QC system and established the R&D department.

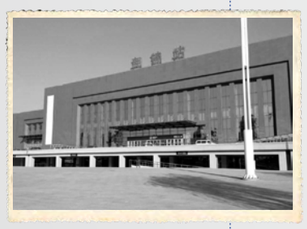
2008

To meet customers' needs, Yilida imported the first 3 sets of micro expanded metal machine to expand the business into new fields. At the same year, the lightning striking protection mesh arrived at German, and obtain customers' satisfaction and we established long term cooperation.

2017

Yilida and our honored customer Mr. Johnson jointly developed the micro expanded metal muffler plate for Vulcanized bed dryer. And the products had been tested that could perfectly matched with equipment and perform well.
At the same year, we broadened our business on micro expanded metal and purchased 15 sets of micro expanded metal production equipment, the annual output achieved 2,000,000 square meter.

1984 | 1989 | 1991 | 1998 | 2003 | 2005 | 2008 | 2011 | 2017 | 2021



1989

The Anping Wire mesh was gradually accepted by international market and the application was continuously developed. Mr. Song run a store at Panjin City. The main business was to sell steel wires and imported wire meshes at local market.

1998

With the continuous development of the business and continuous increase of orders, Mr. Song established "Tieling Expanded Metal Factory" and purchased 5 expanded metal production machines to satisfy different sizes and requirements of expanded metal. The products obtained a good reputation for quality.

亿利达
YILIDA METAL MESH

2005

Registered Yilida Metal Wire Mesh Co., Ltd. with import and export rights, and get continuous export orders.
The company continued to improve the equipment and technology to meet the quality requirements of domestic and foreign customers.

2011

R&D team of Yilida was continuously developing new products and fields of micro expanded metal products fields. Until 2011, the main business had covered battery, acoustic and EMI shielding Fields.

2021

Until 2021, Yilida micro expanded metal business covered aerospace, wind power, battery, electrolyzer, filtration, shielding, automotive, flue gas denitrification and acoustic nine fields. And Yilida had more than 1000 of products ranges. The punching machine achieved 25 sets and the annual output achieved 5,000,000 square meters. But we were not satisfied with that, we were developing and innovating.

MAKE PERFECTION MORE PERFECT

Professional, focus and enthusiastic bring us continuous improvement and development. Every progress has been recorded by our customers' satisfaction and long-term cooperation.
We insist on consistent improvement to make perfection more perfect

Perfection Measures

Top Grade Material

All materials are purchased from large steel factory to guarantee the good chemical and physical properties.

Accurate Stretching Mold

The mouldi is made from imported moulding steel and EDM technology, Every mould will be checked before producing and guarantee the accurate punching result and smallest tolerance.

Flat mesh surface

After treated with sophisticated flatten machine, the mesh surface will be flattened and no any burrs.

Small Tolerance

Sophisticated hydraulic cutting machine can cut accurate sizes according to customers' request strictly.

Beautiful & Strong Package

All products will be packed well including waterproof package, shake proof, impact resistance package and other package measure to guarantee the best performance of micro expanded metal.

100% Pass Rate

Our professional quality control staff will 100% inspect products according to enterprise standard which is far higher than industrial and international standard and process.

More Perfect

100% Record

Materials of every order will be recorded along with the mill certification and test report to guarantee each batch goods have same quality.

100% New Mould

During the production process, the mold is easy abrasion and broken. We will regular replace the mould to avoid deformation, nicks and burrs.

Ultra-Large Flatten Machine

We have the biggest width (4000 mm) flatten machine to meet the leveling demand of large width meshes.

The Smallest Tolerance

Independent improved cutting machine and 500+ production moulds can minimize the tolerance during production and cutting.

100% Custom Package

Each order we will customize the package according to the product material, chemical and physical property, transport distance and method as well as customers' specific requirements.

100% Traceability

All inspection results will be recorded and stored for the next preventive measures and traceability.

INNOVATION

Yilida believes only continuously innovating and developing, can bring enterprise achieve more success.

Comply to Standard, Exceed Standard

Yilida is not only the micro expanded metal manufacturer, but also the solution designer to specific applications. As one of the national standard drafters, we have rich experience and knowledge to break machine limit and seeking for more technology to produce more products exceed standard requirements and satisfy customers' needs.

Mould Development

We are committed to developing moulds to decrease products tolerance and fit for customers' application better. Now, we have independent develop more than 500 kinds of moulds to satisfy different material, sizes and applications of micro expanded metal production.

Equipment Improvement

We have independently improved the punching machines according to more than 37 years' experience to supply more products to meet customers' requirements. And all products gain favorable response.

Seeking, Innovating & Solving

We clearly know that the needs of customers are our direction of progress, we are willing to meet new challenges, driven by innovation and cooperate with customers to develop more products and applications, solve more problems, provide more personalized product solutions.

QUALITY CONTROL

Product quality is the base of Yilida. Rely on the superb quality, Yilida is consistent developing and gain customers' trust and establish long term win-win cooperation.

Yilida has rich industrial professional knowledge and more than 37 years manufacturing experience to produce the micro expanded metal with outstanding mechanical and electrical performance.

We are dedicated in reduce production loss, decrease tolerance and enhance products performance to guarantee our micro expanded metal accord with industrial and customers' requirements.

Certificates

Yilida has gain ISO 9001 and SGS certification, which proves that all our production and products can achieve international standard. And we will continuous developing and innovating to achieve greater breakthrough on product quality and applications.

ISO 9001 Certificate


恒标

QUALITY MANAGEMENT SYSTEM
CERTIFICATE OF CONFORMITY

This is to certify that the Quality Management System of:

Anping Yilida Metal Wire Mesh Co., Ltd.

has been found to conform to Quality Management System Standard:
GB/T 19001-2016/ISO 9001:2015
This certificate is valid only to quality Management system certification
related to the following product(s)/service(s):
Metal Wire Mesh (Expanded Metal Mesh, Perforated Metal Mesh, Steel Grating etc.) Production and Export Trade

BEIJING HENGBIAO QUALITY CERTIFICATION CO.,LTD.

General Manager:

IAF CNAS

SGS Certificate


Verified

Gold Plus Supplier Assessment Certificate

Anping Yilida Metal Wire Mesh Co., Ltd.

安平县亿利达金属网业有限公司

http://wiremesh-yld.en.alibaba.com

Onsite assessment was conducted by SGS

Issued by Alibaba.com Assessed by SGS

Worker Training

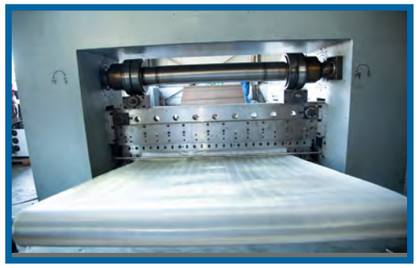
Worker is the important link during quality control. Skilled workers can find problems timely and help to decrease tolerance and reduce misoperation. Therefore, we regularly organize worker training on theoretical knowledge, operational skills, identify quality defects and timely treatment during production.

Selected Raw Materials

Raw material property decides the products quality directly. All Yilida raw materials are purchased from well-known steel factory and each batch of material will be checked the mill certification and tested of its chemical compositions, physical properties and tolerance.

Advanced Production Equipment

Independent developed and improved punching machines and other related machines can help to decrease tolerance and reduce production loss. Our technicians and skilled workers will make the best use of equipment and achieve quality continuously improvement and enhancement.



100% Inspection

Each order will be tested according to specific applications and requirements. They are including the mesh size, tensile properties, electrical conductivity, magnetic conductivity and sound-absorbing properties, and other properties. All test result will be record to supply good source trace system.

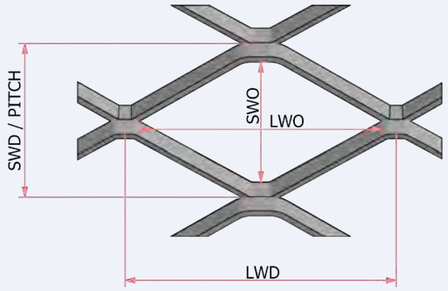
Elaborate Packaging

Waterproof papers, plastic films, wrapped bags, pallets and other customized logo and warming tips are our packages and all packages varies according to different materials, applications and customer requirements.
We will try our best to ensure the products in the best condition when arrived to customers.

TERMINOLOGY

SWD

(Short Way Dimension) The dimensional (US/Metric) size of the mesh pattern. It Is the length of the short axis way of the diamond, measured from the center of the joint to the center of the joint.



LWD

(Long Way Dimension) The dimensional (US/Metric) size of the mesh pattern. Measured from the center of the joint to the center of the adjacent joint. This dimension is fixed, and is always parallel to the width of the coil and corresponds with the diamond dimension.

SWO

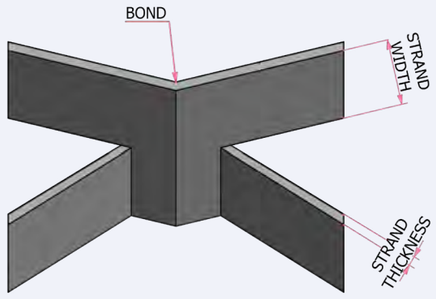
(Short Way Opening) The dimensional (US/Metric) size of the mesh pattern.

LWO

(Long Way Opening) The dimensional size (US/Metric) of the mesh pattern.

Pitch

Another term for (US/Metric) SWD



Bond

The intersection where meshes are joined. Sometimes referred to as Knuckle.

Strand Width

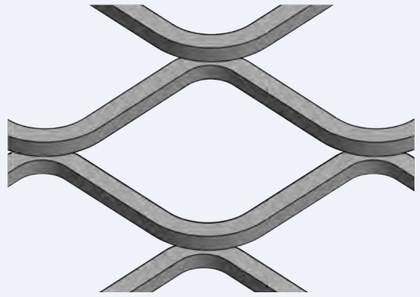
Amount and dimensional (US/Metric) length fed between the upper and lower tooling to produce the mesh. The strand width is the amount of metal slit from the parent metal in forming the mesh. This is closely controlled and is directly related to the weight, overall thickness and open area as shown in the above illustration.

Strand Thickness

Material thickness (US/Metric) used to produce standard material which is the raw thickness. It is also the thickness of the material after flattening.

Overall Thickness

Thickness (Height) of the mesh when laid on a flat surface. When the micro expanded metal is flattened (2D) type, strand and overall thickness is the same.

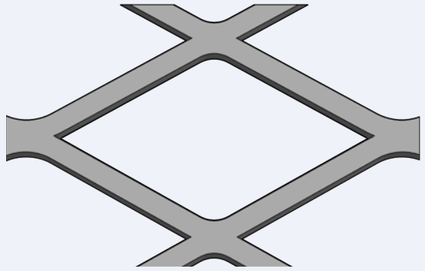


Raised

Same structure with 3D, it is produced through slit and stretch to form a three-dimensional structure with raised bonds.

3D

Another Term of raised micro expanded metal. It has tree-dimensional structure with raised strand. It is the original structure of micro expanded metal.

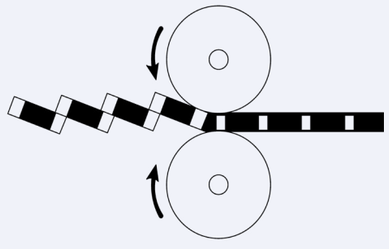


Flattened

It stands for the micro expanded metal which is flattened from raised expanded metals. It features smooth and flat surface to be used in specific applications.

2D

Flattened micro expanded metal. It is the meshes which is flattened from raised micro expanded metals. It has flat and smooth surface.

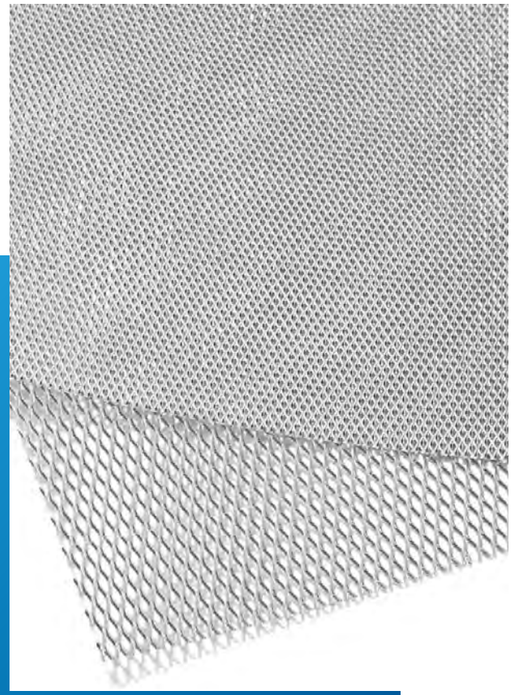


Flat Rolling

Also known as to calendar. Flattening is a secondary process that reduces the overall thickness of the mesh and make the raised micro expanded metal into flattened micro expanded metal.

MICRO EXPANDED METAL

Micro expanded metal is produced from light gauge metals and foils with excellent ductile. The metals and foils are produced through slit and expand into a high precision mesh material for specific weight and dimensional requirements. We manufactured from .001" or 25 μm thick, up to 48" (1250 mm) in width. Micro expanded metal has wide ranges of applications in shielding, lightning strike protection, batteries and other applications.

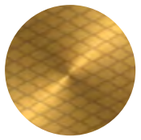


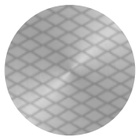
Features

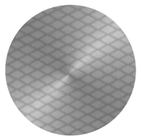
- Slit and expand technology make the material without wasting and it can add strength and rigidity to the micro expanded metal.
- One piece structure will not ravel under normal circumstances.
- Excellent physical and chemical properties for specific applications, including lightning strike protection, EMI/RFI shielding, acoustic applications.
- Micro expanded metal can be manufactured from various alloy materials, including stainless steel, titanium, aluminum, silver, copper, brass, nickel and other alloy materials for different applications.
- Micro expanded metal is available in a variety of 2D and 3D designs including hexagonal, round, diamond and square patterns.
- Open areas of fine expanded metal are flexible to increase and decrease through specialized manufacturing method.
- Good electric conductivity

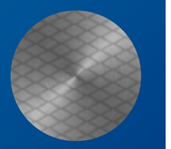
Available Materials

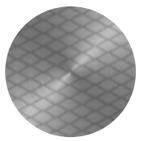

Copper

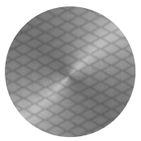

Brass

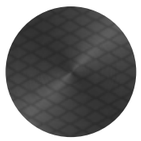

Silver

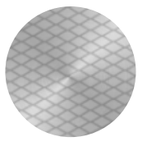

Aluminum


Galvanized


Nickel

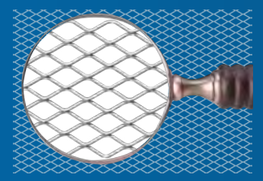

Stainless Steel


Titanium


Other Alloy

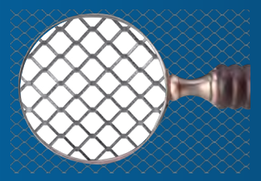
Hole Patterns

All micro expanded metals are available in 2D (flattened type) and 3D (raised type) designs including diamond, square, round and hexagonal patterns.



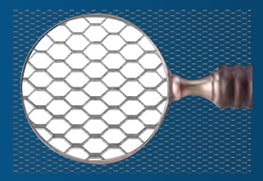
Rhombus/Diamond

Classical and the most popular micro expanded metal mesh openings.



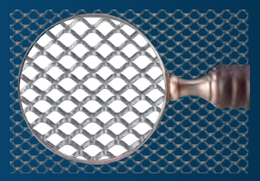
Square

Specially design for applications that need a large free cross-section.



Hexagon

Supplies perfect balance between material and carrying capacity.



Circle

It can perfectly replace the perforated metal sheets.

Production Range

Standard Series

Material: Copper, Aluminium, Nickel, Titanium, Silver, Stainless Steel
Thinnest 0.35 mm on Low Carbon Steel

Thickness (mm)	SWD × LWD	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1250
0.1	0.3 × 0.5	■	■															
0.15	0.5 × 0.8	■	■	■														
0.2	0.7 × 1	■	■	■	■	■												
0.2	0.9 × 1.2	■	■	■	■	■	■											
0.2	0.9 × 1.5	■	■	■	■	■	■	■										
0.3		■	■	■	■	■	■											
0.2	1.3 × 2	■	■	■	■	■	■	■	■	■	■	■	■					
0.2	1.3 × 2.2	■	■	■	■	■	■	■	■	■	■	■	■	■				
0.3		■	■	■	■	■	■	■	■	■	■	■						
0.4		■	■	■	■	■	■	■	■	■	■							
0.4	1.5 × 2.5	■	■	■	■	■	■	■	■	■	■	■	■					
0.5		■	■	■	■	■	■	■	■	■	■							
0.4	2 × 3	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
0.5		■	■	■	■	■	■	■	■	■	■	■	■	■				
0.5	3 × 6	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
0.8		■	■	■	■	■	■	■	■	■	■	■	■	■	■			
1		■	■	■	■	■	■	■	■	■	■	■	■					
0.8	4 × 8	■	■	■	■	■	■	■	■	■	■							
1	5 × 10	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3	10 × 20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Ultra-Thin Series

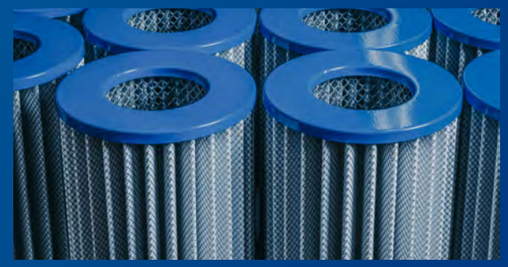
Material: Copper, Aluminum and Other Foils

0.05–0.15	0.8 × 1.5	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
0.05–0.2	1.2 × 2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
0.05–0.3	3 × 6	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

- Ultra Width Products can be accepted.
- Other sizes can be customized.

APPLICATIONS & INDUSTRIES

We focus on developing more micro expanded metal products and solutions to industrial fields.

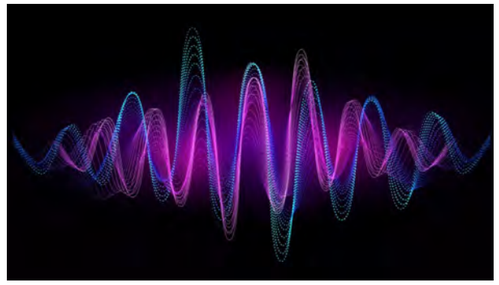


Filtration

Micro expanded metal can be used as both the support meshes and the filtering materials in air and liquid filtration process.

Aerospace

We offer a wide range of copper or aluminum expanded metal foils for composite aircraft manufacturing and lightning striking protection.



EMI Shielding

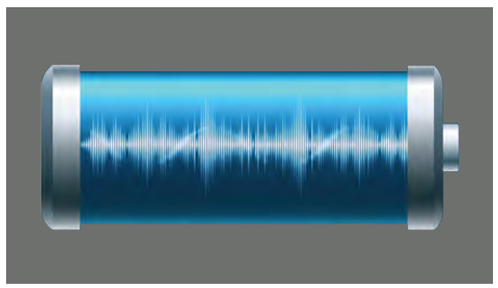
Copper micro expanded metal can provide excellent EMI/RFI shielding performance for military, electronic and economical fields.

Wind Power

Copper and aluminum expanded metal are used as the lightning striking protection material for wind turbine blades manufacturing.

Automotive

Micro expanded metal is used as protective materials as the speaker grilles, brake pad meshes as well as door hinge bushing.



Battery

Micro expanded metal is used in the primary, advanced and fuel cell batteries manufacturing as the support material and as the current collector mesh.

Flue Gas Denitrification

Micro expanded metal is used as the substrate material of plate SCR catalyst production for even distributed and rigid support structure.

Electrolyzer

Platinum titanium expanded metal mesh is used as MMO anode mesh to be used in electrolyzer for chlor-alkali and Hydrogen and oxygen production industries.

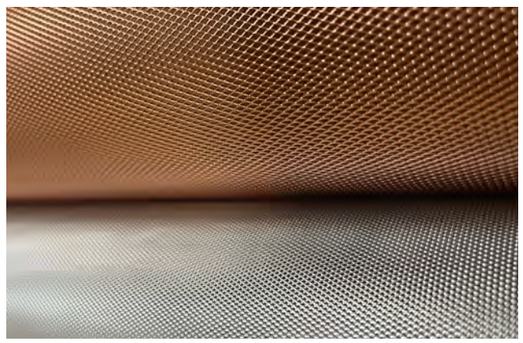
Acoustics

Micro expanded metal with tiny openings and special structure is the ideal material of noise barrier, speaker grill and acoustic panel.

AEROSPACE

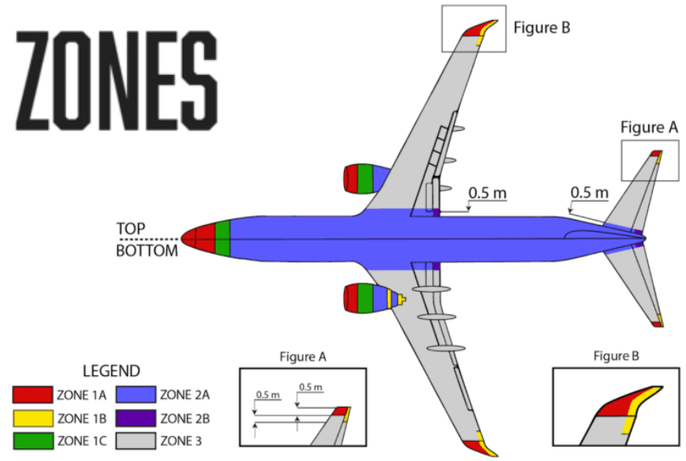
Carbon fiber composite material has become the main material of aircraft. But the composite material is a poor conductor of the current and easy to be damaged in the lightning strikes. Micro expanded metal covers on the surface of composite material to dissipates the lightning strikes, prevent lightning striking damage, supply protection to composite material, and extend aircraft critical components' safe.

It is widely used in the aerospace for aircraft manufacturing at fuselage, wing, engine compartment, flaps, wing tip, even the rotating blades and body parts of the helicopter.



Micro expanded metal is a thin and light metal sheet, which single and integrated structure, which will not disperse or wrap. Flexible and easy fabricated structure can perfectly match with different parts of aircraft, guarantee the smooth surface and will not affect the electrical conductivity.

LIGHTNING ZONES



According to the SAE ARP 5414 standard, the aircraft surface is divided into three zones: zone 1A, Zone 1B-1C-2A-2B and zone 3. and we will recommend the different types of micro expanded metal mesh for different zones for the best performance.

Zone 1B and 2B

double layer of 195 g/m^2 or 420 g/m^2 copper mesh. Because the continuous current will enlarge the damage area and deepen the damage depth.

Zone 1A

195 g/m^2 copper mesh for protection.

Zone 1C

195 g/m^2 or 140 g/m^2 copper mesh

Zone 2A

107 g/m^2 copper mesh

Zone 3

78 g/m^2 copper/aluminum mesh

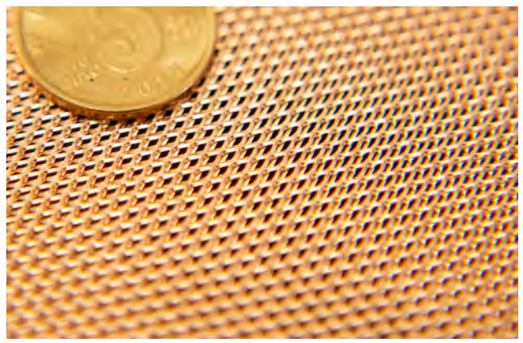
Apart from the above specifications, we will manufacture and custom the micro expanded metal in aluminum or copper material for your specific requirements and model.

Popular Specifications of Lightning Striking Protection Mesh in Aircraft

Product Code	Weight (g/m^2)	Material	LWD (mm)	Overall Thickness (mm)	Open Area	Length (m)
YASAL-49	49	Aluminum 1060	2	0.1	64%	80–300
YASAL-78	78	Aluminum 1060	2	0.15	68%	80–300
YASAL-136	136	Aluminum 1060	2	0.15	63%	80–300
YASAL-36	36	Aluminum 1060	2	0.04	64%	80–300
YASCU-78	78	Pure Copper	2.5	0.1	85%	80–300
YASCU-107	107	Pure Copper	2.5	0.13	78%	80–300
YASCU-140	140	Pure Copper	3.2	0.13	77%	80–300
YASCU-195	195	Pure Copper	2.5	0.13	70%	80–300
YASCU-390	390	Pure Copper	3.2	0.33	55%	80–300
YASCU-420	420	Pure Copper	3.2	0.33	53%	80–300
YASCU-815	815	Pure Copper	3.2	0.25	64%	80–300
YASCU-78F	78	Pure Copper	2.5	0.05	85%	80–300
YASCU-107F	107	Pure Copper	2.5	0.05	78%	80–300
YASCU-140F	140	Pure Copper	3.2	0.08	77%	80–300
YASCU-195F	195	Pure Copper	2.5	0.08	70%	80–300

WIND ENERGY

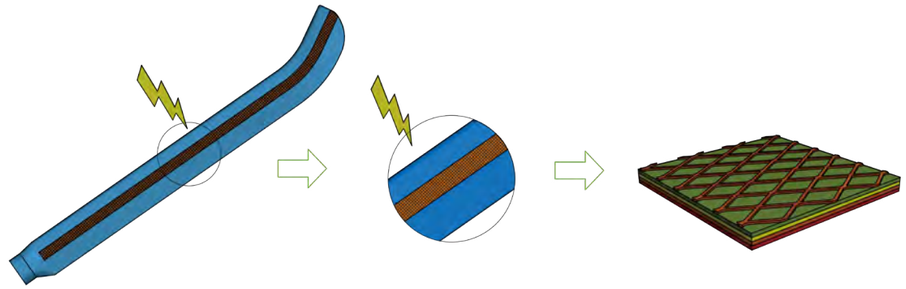
Carbon fiber wind blades are gradually replacing full glass fiber blades to adapt to the development of greater output power of wind energy.
Carbon fiber wind blades increase strength while reducing weight, allowing these larger turbines to spin at lower wind speeds.
But carbon fiber is conductive, making it easier to be struck by lightning, but it has not enough conductivity to draw energy out of the blades. This requires additional protection to avoid catastrophic failures caused by lightning strikes.



The copper and aluminum expanded metal foils is widely used on the composite blade material manufacturing for lightning striking protection, preventing the damage from lightning striking and extending the blade service life.

Micro expanded metal (copper or aluminum expanded metal foil) has excellent electrical conductivity. Insert the aluminum/copper expanded metal into composite material and form the material into blades to supply a lightweight shielding solution to wind energy. Besides, it is one of the ideal materials for electromagnetic compatibility of composite material.

When struck by lightning, it can play a critical electrical conductivity to effectively dissipate the destruction of lightning strike, protect the carbon fiber layer and prolong the service life.



Material:	Copper
Thickness:	0.1 mm
Strand Width:	0.4 mm
SWD:	1.47–1.752 mm
LWD:	3.157 mm ± 5%
Width:	930 mm
Length:	≥ 80 m
Overall Thickness:	0.33 mm ± 10%
Weight:	390 g/m^2
Open Area:	55%

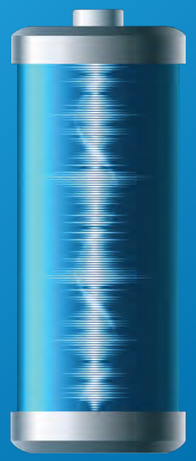
Material:	Copper
Thickness:	0.26–0.3 mm
Strand Width:	0.33 mm
SWD:	1.27–1.55 mm
LWD:	3.157 mm
Width:	630 mm
Length:	≥ 100 m
Overall Thickness:	0.254 mm ± 10%
Weight:	815 g/m^2 ± 10%
Open Area:	64%

Material:	Aluminum
Thickness:	0.1 mm
Strand Width:	0.3 mm
SWD:	1.2 mm
LWD:	2.0 mm
Width:	914 mm
Length:	≥ 100 m
Overall Thickness:	0.15 mm ± 10%
Weight:	136 g/m^2 ± 10%

Other Available Specifications of Lightning Striking Protection Mesh in in Wind Energy						
Product Code	Weight (g/m^2)	Material	LWD (mm)	Overall Thickness (mm)	Open Area	Length (m)
YWSAL-49	49	Aluminum 1060	2	0.1	64%	80–300
YWSAL-78	78	Aluminum 1060	2	0.15	68%	80–300
YWSAL-136	136	Aluminum 1060	2	0.15	63%	80–300
YWSAL-36	36	Aluminum 1060	2	0.04	64%	80–300
YWSCU-78	78	Pure Copper	2.5	0.1	85%	80–300
YWSCU-107	107	Pure Copper	2.5	0.13	78%	80–300
YWSCU-140	140	Pure Copper	3.2	0.13	77%	80–300
YWSCU-195	195	Pure Copper	2.5	0.13	70%	80–300
YWSCU-390	390	Pure Copper	3.2	0.33	55%	80–300
YWSCU-420	420	Pure Copper	3.2	0.33	53%	80–300
YWSCU-815	815	Pure Copper	3.2	0.25	64%	80–300
YWSCU-78F	78	Pure Copper	2.5	0.05	85%	80–300
YWSCU-107F	107	Pure Copper	2.5	0.05	78%	80–300
YWSCU-140F	140	Pure Copper	3.2	0.08	77%	80–300
YWSCU-195F	195	Pure Copper	2.5	0.08	70%	80–300

Applications

The micro expansion mesh is widely used in the wind turbine blade manufacturing, it can also be installed on the aircraft, turbine cabin cover of wind power plants, as well as on high-altitude electrical appliances and machines to prevent lightning attacks, but also can provide a certain shielding effect.



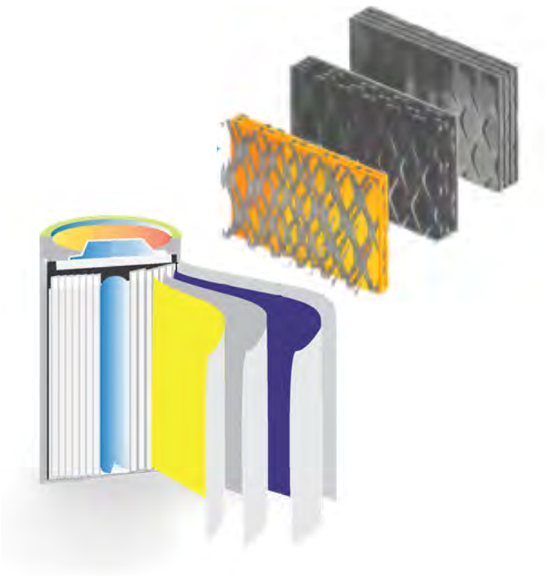
BATTERY

Battery is the device that converts the chemical energy of electrode material into electrical energy through electrochemical reaction. Batteries can be divided into primary and secondary batteries according to whether the electrochemical reaction is reversible or not.

In modern battery design, the electrically active material used in the electrodes are powders, which require a mechanical support structure to hold them in place during manufacturing process. Expanded metal foil (micro expanded metal) is used as battery mesh to be widely used in the battery production as support structure, current collector and provide electrical connection point for the external circuit.

Functions

- Provide support structure.
- Use as anode & cathode current collector
- Provide electrical connection point for the external circuit
- Extend secondary battery's life.

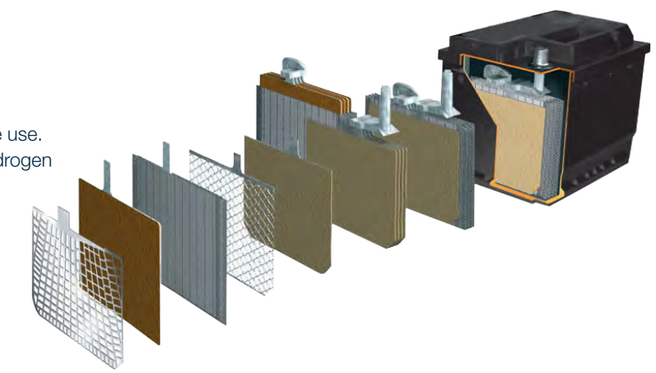


Primary Battery

Primary battery will be discarded after single use. It contains zinc manganese battery, alkaline battery, silver zinc batteries and so on.

Secondary Battery

Secondary battery can be recycled for multiple use. It contains nickel--cadmium battery, nickel-hydrogen battery, lithium-ion battery, lead-acid battery.



Features

- Various of material options. Silver, Copper, Titanium, Nickel and other ductile metal are available to meet conductivity requirements for battery.
- Flexible specifications allow more possibilities to improve battery performance and satisfy specific requirements.
- 3D structure increases surface area and help to storage more active material and increase capacity at higher C-rates.
- One piece structure for superior electrical conductivity.
- Advanced equipment guarantees precise weight, thickness, open area and conductivity.
- Provides better adhesion properties and higher ion transport rates, resulting in greater energy density.

Pure Silver Micro Expanded Metal (for Zinc-Silver Battery)

Material:	Pure Silver Sheets
Strand Width:	0.06–0.09 mm
Mesh opening:	0.5 × 1.0 mm, 1.0 × 2.0 mm, 1.25 × 2.5 mm, 1.5 × 2.5 mm, 1.5 × 3.0 mm
Width:	21–240 mm ±0.4 mm
Overall thickness:	0.05–0.30 mm ± 0.01 mm
Density:	100–400 g/m^2 ± 20 g/m^2
Folding edge width:	2.0–3.0 mm
Flexibility:	no cracking when folding for 10 times at 180 degree.
Overall length:	≥ 300 m and with only 2 joints.
Tensile strength:	≥ 2.5 kg (sample with 40 mm width and 300 mm length)
Elongation:	≤ 3% (sample with 40 mm width and 300 mm length)

Nickel Coated Copper Micro Expanded Metal (for Ni-Zn battery)

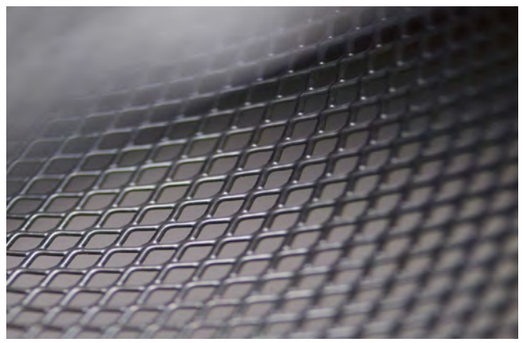
Material:	Pure copper (copper content ≥ 99.9%) or Brass (copper content ≥ 65%)
Nickel coating thickness:	1.5–1.8 μm
Mesh opening:	0.5 mm × 1.0 mm, 0.8 mm × 1.2 mm, 1.0 mm × 2.0 mm, 1.25 mm × 2.5 mm, 1.5 mm × 2.5 mm, etc.
Overall thickness:	0.1–0.4 mm ± 0.01 mm
Overall width:	21–300 mm ± 0.2 mm
Folding width	2.0–2.5 mm ±0.5 mm
Density	150–500 g/m^2 ± 10 g/m^2
Flexibility:	no cracking when folding for 10 times at 180 degree.
Overall length	≥ 300 m and with only 2 joints.

Titanium Expanded Metal Foil (for IEM Fuel Cell)

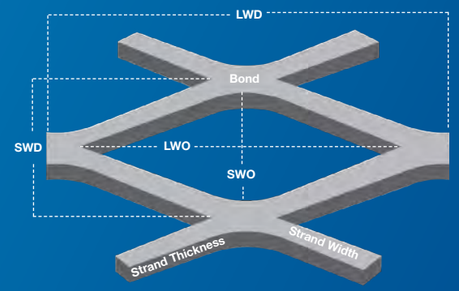
Material:	TA1 pure titanium foil (titanium content ≥99.6%)
Width:	100 mm (available for slitting and edge folding)
Thickness:	0.05–0.30 mm ± 0.01 mm
Density:	150 g/m^2 ± 10 g/m^2
Mesh opening:	0.75 × 1.25 mm
Strand width:	0.25 mm

ELECTROLYZER

Electrolyzer is consist of cell, anode and cathode, most of which are separated by a diaphragm. The anodes of electrolyzer are Mixed Metal Oxide (MMO) electrodes. They are made by a substrate with several kinds of metal oxides. The working principle of electrolyzer is use electricity to electrolyze water into hydrogen and oxygen material. Nowadays, the electrolyzer is developing towards large capacity and low energy consumption and it is widely used in chlor-alkali and hydrogen and oxygen production industry.



Titanium expanded metal is widely used as the substrates of Mixed Metal Oxide (MMO) electrodes to increase the amount of surface area allowing for more catalyst material to be used. Besides, it can enhance the flow through the substrate for better ion separation. With evenly distributed edges across the anode surface, the mesh produces outstanding results in current density and plating. The metal mesh provides good solution movement, electrolyte transfer and plating.

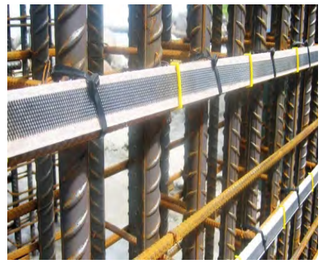


Popular Specifications of Platinum Titanium Mesh of Electrolyzer				
Item	SWD (mm)	LWD (mm)	Strand Width (mm)	Thickness (mm)
YETM-01	3.0	6.0	1.2	1.5
YETM-02	5.0	12.0	1.4	1.5
YETM-03	6.0	12.0	2.0	2.8
YETM-04	5.5	10.0	1.0	1.0
YETM-05	5.0	10.0	1.0	1.0
YETM-06	7.0	14.0	1.5	1.5
YETM-07	8.0	16.0	2.0	2.0
YETM-08	10.0	20.0	2.5	2.5

Applications

Platinum titanium mesh is used as the MMO anodes of electrolyzer in industrial applications and it can be used as the cathodic protection mesh for concrete, pipe and other building material.

Chlorine-Alkali Industry



Cathodic Protection

Electro chlorination System

Electroplating

Oxygen & Hydrogen production

Water Treatment

FILTRATION

Filtration is critical to industrial production and our daily life. It helps to maintain the clean life and contribute to the sustainable development. Choose the right filter material is important to the filtration efficiency and accuracy.
Micro expanded metal is versatile and adaptable, which is available for coils, sheets and can be pressed, formed shaped and welded into components for straining, retention and filtration. Besides, it is wide ranges of configurations of thickness, opening sizes, 2D/3D structures to satisfy different filtration requirements and grades and ensure strength, particle removal and media compatibility.
Our micro/precise expanded metal is widely used liquid filters and air filters.

Expanded metal foil filter materials

Expanded metal support material

Micro expanded metal can be used as the supporting structures of filter elements (especially for non-woven fabrics and activated carbons) and it can also be used as the filter materials.

- Expanded metal foils. Our aluminum/copper/stainless steel expanded metal foil can be layered into filter panels to capture dust and grease for both internal and external air filtration.
- Micro expanded meal mesh. Micro expanded metal mesh can be used as the support material of filter elements because of rigid, integrated and even distributed structures.

Features

- **Economical material.**
It has no waste during production and it can be made into micro openings, which is an alternative to perforated metal materials.

- **Integrated structure.**
Slit and stretch technology supplies integrated and uniform surface and will not loose during filtration to supply rigid support structure for filter element.

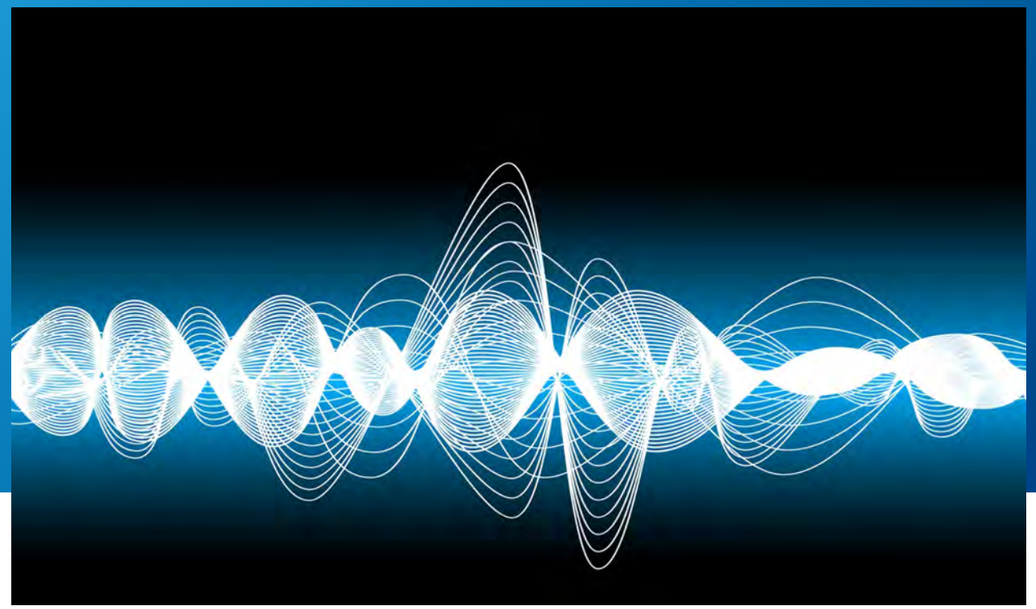
- **Wide ranges of size options.**
The flexible and versatile thickness, openings configurations make it possible to satisfy more filtration fineness and fit for more applications.

- **Different materials options.**
Aluminum, stainless steel, galvanized, copper and other alloy materials can satisfy different filtration environments and media.

Moreover, the micro expanded metal can be made into other forms and shapes for different filtration needs.

Range Hood filter

Customized Filter Elements

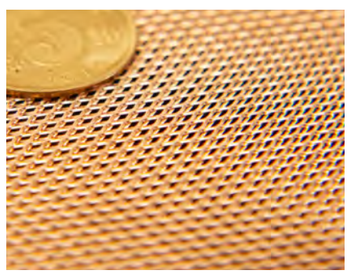


EMI SHIELDING

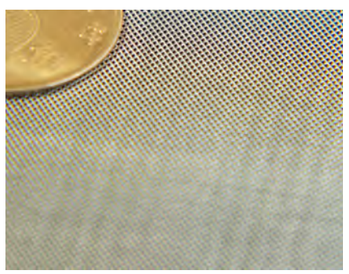
Shelter is critical important in military to be used as weapons and equipment system, command and communication center and high shielding shelter, stealth shelter, bulletproof shelter, explosion-proof shelter and so on. But the traditional metal shelter has been replaced with composite materials. Composite shelter can reduce 50% to 70% weight for Maneuverability. But it needs to be added shielding material (micro expanded metal).

High precision expanded metal mesh (micro expanded metal mesh) has light and integrated structure, uniform surface, stable continuous opening and customizable flexibility. The most important is, the precise expanded metal has excellent EMI shielding performance to supply excellent shielding performance and make up for the deficiency

Besides, the micro expanded metal has been used as shielding material in aerospace, electronics and other fields.



Copper Precise Expanded Metal



Aluminum Precise Expanded Metal

EMI shielding mesh is available in various materials, including copper, aluminum, nickel, Monel, etc. Copper is the most widely used type. And all our copper content of micro expanded metal shielding mesh is ≥99.7% (economical) and ≥99.9% (best shielding performance) and all of them comply with RoHS standard.

Specifications

- **Material:** copper, aluminum, nickel, Monel or others.
- **Standard thickness:** 0.002" (50 μm) or 0.003" (70 μm)
- **Mesh type:** diamond-shaped hole patterns.

Popular Specification of Expanded Metal Foil for EMI Shielding							
Item	Material	Thickness	Weight (g/m^2)	Open Area	Shielding Effectiveness (dB)		
					100 MHz	1 GHz	10 GHz
YSM-01	Copper	0.05	215	53%	72	53	33
YSM-02	Copper	0.08	245	64%	60	42	25
YSM-03	Aluminum	0.05	65	53%	70	51	32
YSM-04	Aluminum	0.08	75	64%	58	41	23
YSM-05	Nickel	0.05	214	53%	60	46	28
YSM-06	Nickel	0.08	243	64%	64	40	24
YSM-07	Monel	0.05	271	53%	67	53	36
YSM-08	Monel	0.08	395	64%	63	46	30

Features

- Integrated structure will not be loose
- Good electrical conductivity
- Heat resistance
- Non-magnetic
- Corrosion resistance
- Uniform surface supplies even shielding performance

Application

- Military and government agencies
- Scientific research
- High-frequency medical equipment
- High-tech anti-electromagnetic interference engineering
- Aerospace
- Telecommunication
- Other aspects of electromagnetic shielding

Scientific research

Military

Medical & Hospital

AUTOMOTIVE

During automotive manufacturing and maintenance, the auto spare parts is critical to whole automotive performance. Even the small bearing can affect the customer experience feeling and car service life.

Micro expanded metals are widely used in Automotive manufacturing and aftermarket. The micro expanded metal has versatile choice and configuration variability to be used as supporting material, protective material and lubricating material and filter screens to enhance automotive performance and extend spare part service life.

Compare to the typical extruded material, sintered material or woven material, the expanded metal adopts unique slit and stretch technology, which is no waste material and will not unravel during processing to make it be economical and cost-effective alternative choice. Additional, wide ranges of opening, structures (2D or 3D structure), thickness, open areas configurations make it possible to be used more applications.

Bushing

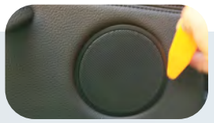
The phosphor bronze micro expanded metal is used as the support structure of PTFE and then added with the aluminum or steel backing material to form the current bushing. This type of bushing is low friction, oil-less and can withstand extreme load and continual abuse and can be used in every moving part within the automobile. Additionally, it is widely used in the trunk, hood hinges, seat backs, door hinges and light suspension components for higher dusty and heavier suspension components on light trucks and off-road equipment.

Micro Expanded Metal for Automotive Bushing		
	Raised/3D	Flattened/2D
Material	CUSN6	CUSN6
Weight	270 g/m^2	255 g/m^2
LWD	2 mm	2 mm
SWD	1.5 mm	1.6 mm
Overall Thickness	0.4±0.05 mm	0.17±0.01 mm
Width	320 mm	320 mm
Length	700 m	700 m

Airbag Filter Screen

The airbag is an important component of a motor vehicle's occupant resistant system. The micro expanded metal as the support and filter material can guarantee operational reliability in fluctuating conditions and compensate for thermal expansion in the airbag. it also performs the functions of heat dissipation, filtration and flow distribution.
The micro expanded metal airbag filter screen is widely used in driver, front-passenger, back seat, head, side, knee and seatbelt airbags.

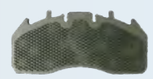
Material	low carbon steel
Pattern	Raised/2D
LWD	3 mm
SWD	2.1 mm
Thickness	0.5 mm
Strand Width	0.45 mm
Width	170 mm
length	30–500 m



Speaker Grilles

Micro expanded metal can be made into different shapes and sizes to match with the speakers on the automotive (door and front speakers). it can not only help to prevent debris and dust from entering the speakers, protect critical element from external impact, extend speaker service life and will perform positive effect to the sound quality.

Micro Expanded Metal for Speaker Grilles					
Item	Thickness (mm)	Strand Width (mm)	SWD (mm)	LWD (mm)	Width (mm)
YASG-01	0.5	0.5	1.5	2.5	150–500
YASG-02	0.5	0.5	1.7	2.8	150–500
YASG-03	0.5	0.5	2.1	3	150–600
YASG-04	0.5	0.5	3	4.5	150–600
Material: Low Carbon steel Surface treatment: powder coating.					



Brake Pad Mesh

Micro expanded metal is spot welded or full welded to the backing plate of brake pad. This type of brake mesh is called steel mesh back plates or weld mesh steel plates. They are widely used as backing plate for medium, heavy duty brake pads of commercial vehicles. It can help provide mechanical retention for friction material. And the unique opening patten can increase shear strength and pad life.

Air Inlet Screen

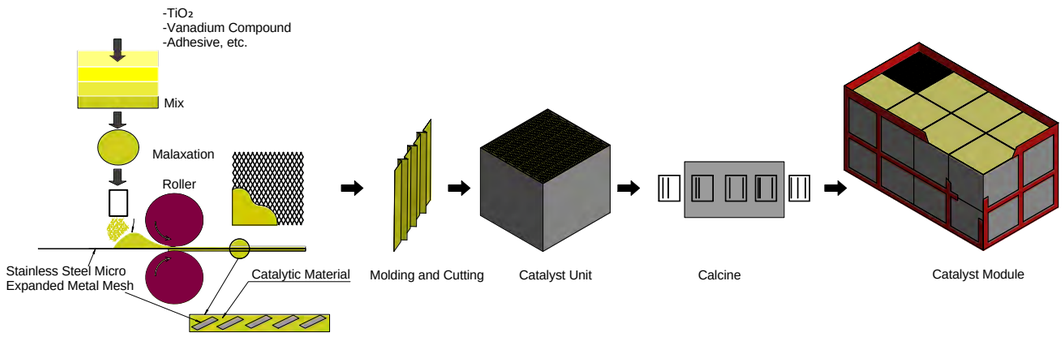
Micro expanded metal is an important protective material in automotive inlet system. precise openings can filter out debris, small particles and guarantee the normal airflow. Micro expanded metal is widely used in radiator, brake cooling inlets, engine air intakes. Besides, it can be used in the bumper, body kit, fender hood vent, vehicle openings as the protective material.

FLUE GAS DENITRIFICATION

In the production process of electric power, petrochemical, chemical, coal, metallurgy, glass, alumina, ceramics, refractory, cement and other industries will produce many types of Nitrogen Oxides (NOX), including Nitrous Oxide (N2O), Nitric Oxide (NO), Nitrogen Dioxide (NO2), etc. Among them, the NO and NO2 are common air pollutants. So, the flue gas denitrification is critical important and requisite measure for the enterprise.

The main denitrification treatment methods include Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR) and so on. Plate type, honeycomb type and corrugated type catalysts are main types of SCR. Plate type catalysts have various advantages than the other two types.

Plate type SCR catalyst adopts stainless steel micro expanded metal as the carrier for catalytic material and Titanium dioxide, vanadium oxide and molybdenum oxide served as active catalytic materials to corrugate, mold and cut into single pieces assembled into a catalyst unit box. And then assembled into a catalyst module after calcining.

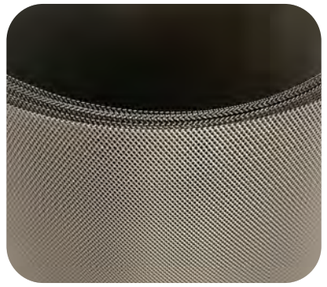


- Superior dust resistance performance to the honeycomb type, which is more suitable for places where dust content is over 50 g/Nm^3.

- Support with stainless steel micro expanded metal mesh and 80% porosity, the plate type catalyst is not easy to touch ash, highly wear resistant and featuring low resistance and pressure reduction. It is recommended for places where under the high ash content conditions.

- Excellent stainless steel expanded metal support, the structure will not loose or breakage even when the active material losing. Additionally, it will not cause collapse even under continuously attack by flue and gases.

Stainless Steel Micro Expanded Metal



- Accurate production can guarantee the right direction of openings and products length.
- Integrated structure will not loose during production.
- Smooth surface and without any edge damage to guarantee the material even distribution.
- The height of upwarping is less than 2 cm when spread the 1 m lengthmicro expanded metal on the flat ground.
- The recoil deviation of micro expanded metal not exceed 2cm.
- Standard material is 10Cr17 (SUS 430) and all materials are qualified and can supply the mill certification.
- The micro expanded metal is through degreasing treatment under 550 °C temperature and the good toughness will not be affected.
- The maximum production length can achieve 2000 m and has less than 2 welding spots. The overlap distance of two rolls is less than 5 cm.
- Tensile strength ≥450 N/mm², Yield Strength ≥205 N/mm², elongation ≥22%, hardness ≤200;

Popular Specifications Stainless Steel Micro Expanded Metal of in Flue Gas Denitrification

Item	Material	Mesh Opening (mm)	Thickness (mm)	Strand Width (mm)	Width (mm)	Length (m)
YCM-01*	Stainless Steel 430	2.5 × 4.5	0.20	0.6–0.65	485–513	1500
YCM-02	Stainless Steel	0.4 × 0.5	0.10–0.15	0.1–0.15	150–200	30
YCM-03	Stainless Steel	0.5 × 0.8	0.10–0.15	0.15–0.20	250–300	50
YCM-04	Stainless Steel	0.7 × 1.0	0.10–0.20	0.20–0.30	300	100
YCM-05	Stainless Steel	1.0 × 2.0	0.20	0.30	400	100
YCM-06	Stainless Steel	2.0 × 3.0	0.30	0.40	600	200
YCM-07	Stainless Steel	2.0 × 3.0	0.40	0.50	600	200
YCM-08	Stainless Steel	2.5 × 5.0	0.20	0.40	600	1500–2000
YCM-09	Stainless Steel	3.0 × 6.0	0.50	0.60	600	1500–2000

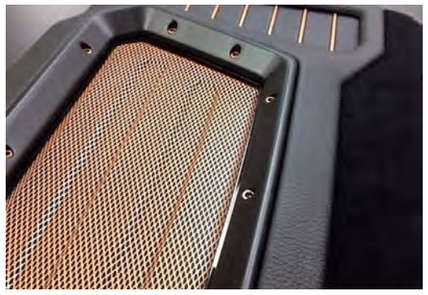
- *YCM-01* is the standard specification.*
- *Other specifications can be customized as request.*

ACOUSTICS

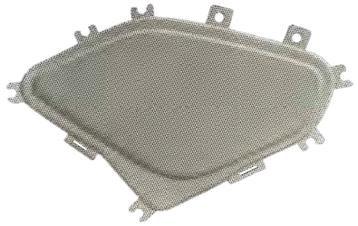
Acoustics is the science concerned with the production, control, transmission, reception, and effects of sound. It has widely spread in various industries, including automotive, speakers, microphones, concert hall and other places.

We have the ability and experience to supply the acoustic products for your projects and production:

- **Loudspeaker/bluetooth/speaker grilles**
- **Sound attenuation material**
- **Sound absorber / acoustic board**
- **Noise barrier..**



Speaker Grilles (Precise Speaker Grill Mesh)



Nowadays, there are two major speaker grilles at the market: micro expanded metal (stretched metal meshes) and perforated metal meshes. The micro expanded metal is slit and expanded rather than punched, there is no waste material during production. This can save up to 50% material and costs for users and make the micro expanded metal a cost effective alternative to perforated metal in acoustic attenuation and speaker grilles.

- **Safe Guard.**
  Protect speakers and driver elements from external impacts.
- **Durable and long life.**
  Galvanized and PVC coated surface treatment can ensure the excellent corrosion and rust resistance performance and let your speaker grilles good as new.
- **Noise reduction.**
  The speaker grill mesh will not affect the sound quality, but also reduce the surrounding noise and let the sound clearly passing and playing.
- **Acoustic attenuation.**
  Unique design micro holes can help to attenuate.
- **Perfectly compatible.**
  We have the ability to custom shapes of speaker grilles and sound attenuation panels to match your acoustic equipment.
- **Tailored made.**
  Except for the shapes, we can custom your logos and other important information on the mesh and panels to spread your brands better.

Product parameters

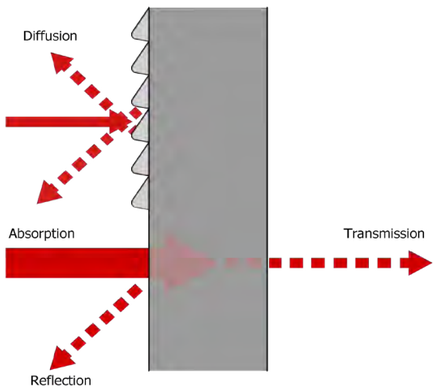
- **Material:** DC01, SPCC, SPHC, etc.
- **Hole:** 0.1–1.5 mm, special specifications are customized
- **Hole type:** diamond, round and other customized

Popular Specifications of Micro Expanded Metal for Speaker Grilles					
Item	Thickness (mm)	Strand Width (mm)	SWD (mm)	LWD (mm)	Width (mm)
YSGM-01	0.5	0.5	1.5	2.5	150–500
YSGM-02	0.5	0.5	1.7	2.8	150–500
YSGM-03	0.5	0.5	2.1	3.0	150–600
YSGM-04	0.5	0.5	3.0	4.5	150–600

NOISE BARRIER / SOUND ATTENUATION / ACOUSTIC BOARD

In downtown area and heavy traffic area, the noise troubles civilians long term. There are several noise barrier products at the markets, such as perforated metal or louver type noise barriers. But they all need the extra sound absorbing materials to achieve the needed effects and some of the sound absorbing material is not environmentally friendly.

As we all know the sound resistance of surface material is inversely proportional to the open area. Thinner opening, better sound resistance. So, we recommend the micro expanded metal as the noise barrier.



Working Principle

The noise barrier is evenly distributed with raised pyramid and oval tiny holes. When the noise contact with the surface of noise barrier, most of the noise are reflected and attenuated by the raised pyramid. And the rest noise/ sound are penetrated through numerous tiny holes and long passing distance. At last, most of the noise/sound are reduced. Thus, it can achieve better noise reduction and sound absorption performance and it is more environmentally friendly.

Technical Data

- Material: Aluminum alloy steel plate.
- Surface treatment: PVDF coating.
- Thickness: 0.8–1.2 mm
- Opening size: ≤ 1.0 mm.
- Opening area: ≤ 5%.
- Width: 600–900 mm
- Sound reduction: ≥ 30 dB
- NCR:
  - ≥ 0.7, Width: 60 – 75 mm
  - ≥ 0.75, Width: 90 mm
- Sound absorption coefficient
  - ≥ 0.95 at 1000 Hz frequency
  - ≥ 0.65 under water spraying condition
  - ≥ 0.65 under dust spraying condition
- Tensile load ≥ 1305 N
- Fire resistance grade: A.

Applications

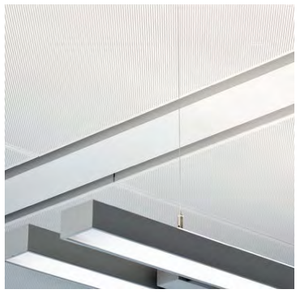
- Noise Barrier.
  Highway, railway, light rail, indoor and outdoor large units.

- Acoustic board.
  Wall panel or ceiling panel of conference center, stadium, song and dance theater, terminal building, waiting building, etc.

- Sound attenuation material.
  large pipe muffler and military silo and industrial manufacturing equipment.

Highway noise barrier

Sound attenuation



Acoustic board ceiling

Acoustic board wall

亿利达
YILIDA METAL MESH

MICRO EXPANDED METAL

MICRO EXPANDED METAL
MANUFACTURER
& SOLUTION PROVIDER

Yilida Metal Wire Mesh Co., Ltd.

Address: Wire Mesh Development Zone, Anping County, Hengshui City, Hebei Province, China. 053600

Tel: +86-311-89948200

Mobile & Whatsapp: +86-13932824722

Email: inquiry@wiremesh-yld.cn

https://www.wiremesh-yld.com