

# Expanded Metal



An extraordinarily versatile material - one with thousands of uses. It comes in four basic types, and it has four primary areas of application.

Basic types are raised (or standard), flattened, and architectural (or decorative) meshes. The major areas of use are for enclosure, protection, support and decoration.

Expanded metal products are produced from solid sheets or plates of carbon, galvanized and stainless steel, as well as aluminium and a variety of alloys of copper, nickel, silver, titanium and other metals.

## Standard Expanded Metals:

Expanded metal as it comes off the machine. The strands and bonds are set at a uniform angle to the plane of the sheet. This adds strength and rigidity, allows air circulation, and distributes the load on the metal to the supporting frames as well as making a skid resistant surface.

## Flattened Expanded Metal:

Manufactured by passing the standard expanded sheet through a cold roll reducing mill parallel to the LWD. By flattening the sheet, the bonds and strands are turned down to produce a smooth and flat surface, reducing the overall thickness and elongating the diamond pattern (LWD). Cross roll flattening is done by passing the expanded metal sheet through a cold roll reducing mill parallel to the SWD. The result is the same except the diamond pattern SWD is elongated.

## Decorative Patterns:

Specially designed expanded metal for use in architectural and decorative applications. These designs can be used to provide privacy and to control light and air while allowing visibility. Sun screens, room dividers, and building facades are only a few of the possible design possibilities. Available in carbon steel, aluminum and other alloys in a wide range of patterns and gauges. Most of these patterns are produced on a special order basis only.

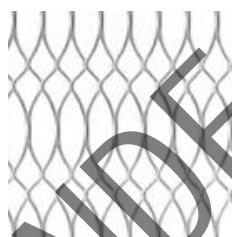
YunDe Metal Product Co.,LTD • Wang Ge Zhuang Development Area,Anping,China  
 Tel:86-318-5189000 86-13831879797 • Fax:86-318-5189002  
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## Expanded Metal: Features

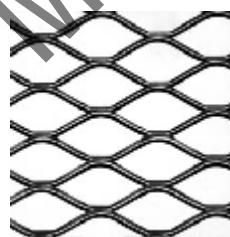
- ∅ · Lightweight
- ∅ · Economical
- ∅ · Versatile
- ∅ · Low Maintenance
- ∅ · Can be bent or formed in any direction
- ∅ · U-edging for finished edges

## Expanded Metal: Applications

- |                          |                         |                         |
|--------------------------|-------------------------|-------------------------|
| ∅ · Architectural Panels | ∅ · Billboard Walkway   | ∅ · Catwalks            |
| ∅ · Stairs               | ∅ · Drying Racks        | ∅ · Fencing             |
| ∅ · Gratings             | ∅ · Flooring            | ∅ · Grilles             |
| ∅ · Vents                | ∅ · Enclosures          | ∅ · Security Partitions |
| ∅ · Panels               | ∅ · Screens             | ∅ · Reinforcement       |
| ∅ · Railings             | ∅ · Ramps               | ∅ · Walkways            |
| ∅ · Window Guards        | ∅ · Anti-dazzle Screens |                         |



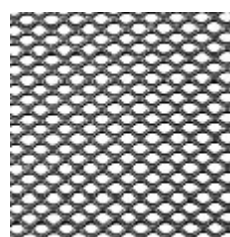
Decorative



Diamond



Hexagonal



Round



Square

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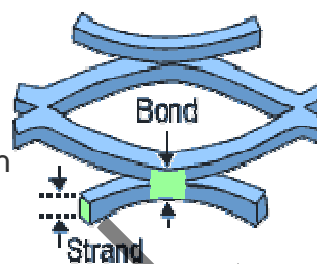
## Terminology

### Material:

stainless steel, carbon steel, brass , aluminum , titanium , nickel , Al-Mg alloy

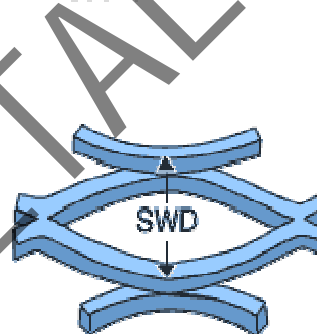
### Strand and Bond

Expanded metal is composed of strands and bonds. Strands form the sides of the expanded metal openings. Bonds are where the strands intersect. In other words, the bond is where each diamond shaped opening is connected with the next opening.



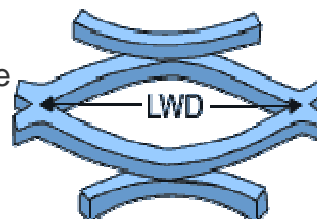
### SWD

SWD (Short Way of the Diamond) is the distance from the middle of the bond on one side to the middle of the bond on the opposite side.



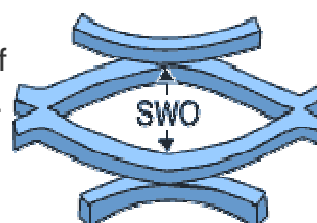
### LWD

LWD (Long Way of the Diamond) is the distance across the largest dimension of the diamond measured halfway between the diamonds.



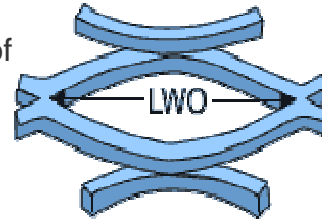
### SWO

SWO (Short Way of the Opening) is the width of the opening of the shortest side of the diamond. SWO does not include the strand width, where SWD (Short Way of the Diamond) does.



### LWO

LWO (Long Way of the Opening) is the length of the opening of the longest side of the diamond. LWO does not include the strand width, where LWD (Long Way of the Diamond) does.

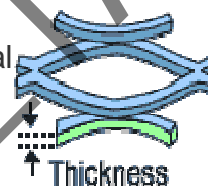


### Open Area

Expanded metal contains open spaces (the diamond-shaped openings) and material. Open area is the total area of the diamond openings divided by the total area of the sheet or roll of expanded metal and is expressed as a percent. In other words, open area describes how much of the expanded metal is open space. If expanded metal has a 60 percent open area, then 60 percent of the expanded metal is open space and 40 percent is material.

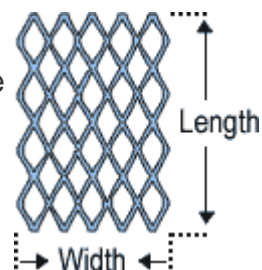
### Gauge or Thickness

Thickness is the measurement from the top surface to bottom surface of the expanded metal piece. Gauge is the most common measurement, but thickness can also be measured in fractional inches or millimeters.



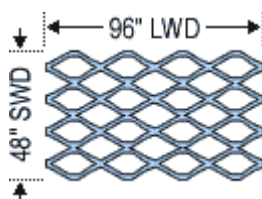
### Width and Length

Length is the measure of the longest side of the expanded metal sheet or cut-to-size piece. Width is the measure of the shortest side of the sheet or cut-to-size piece.

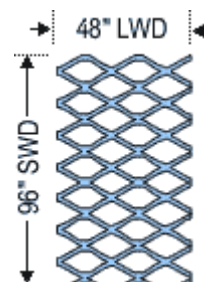


### Determining SWD, LWD Direction

The illustration to the right shows the correct way to designate SWD and LWD dimensions in relation to the length or width.



Stock sheets are like the one shown above



LWD Direction  
Parallel to Length

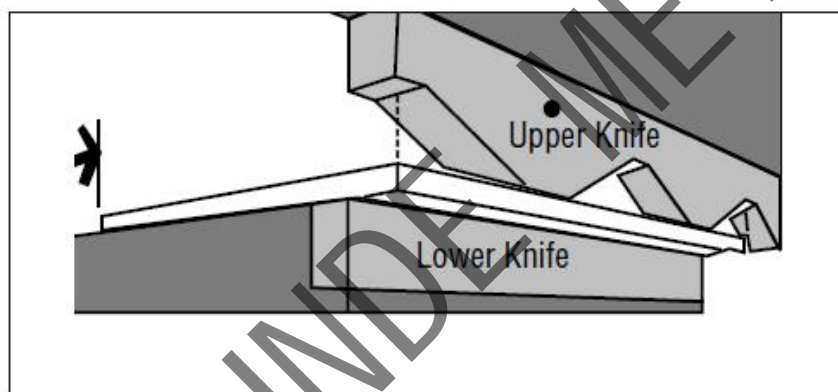
LWD Direction  
Parallel to Width

### Quantity

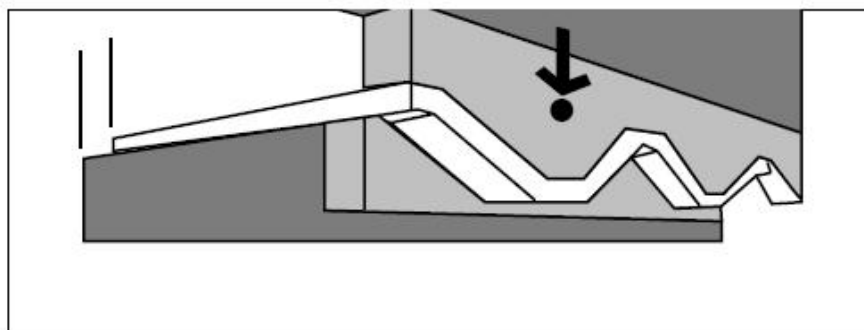
Quantity is the number of expanded metal sheets or cut-to-size pieces you need. Unless otherwise specified, the standard tolerance on quantity is Exact Quantity. In other words, YUNDE will deliver the exact quantity you specify.

**Special designs or sizes is also available at customers request.**

## MANUFACTURING PROCESS

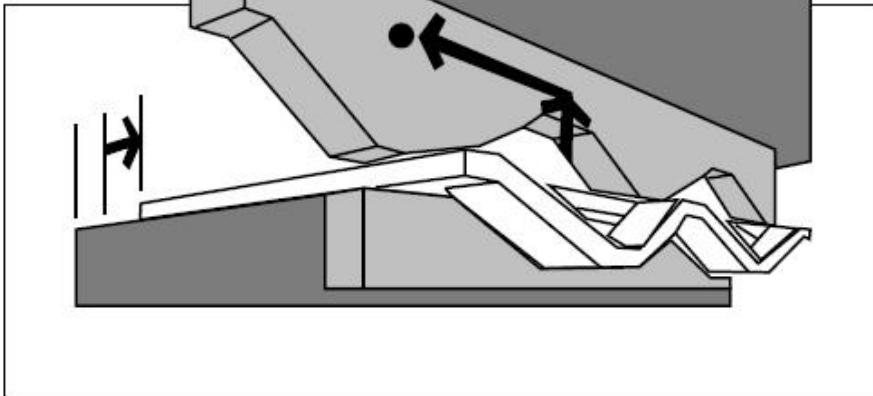


*The sheet or plate advances between the knife one strand width beyond the lower.*

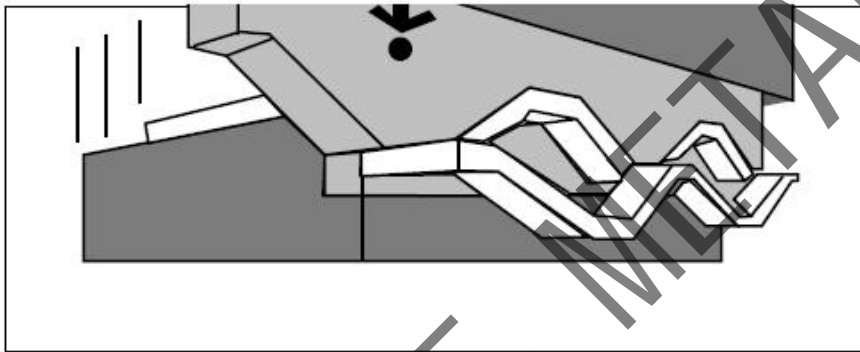


*The upper knife descends to form one half of the diamond design. (SWD)*

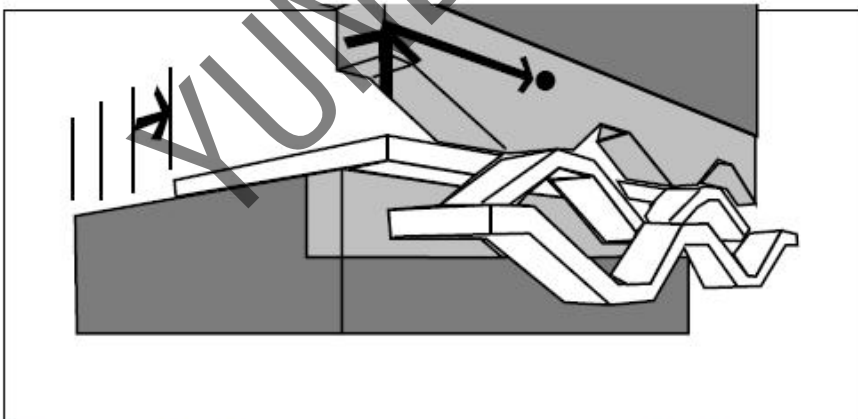
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*The upper knife then ascends fully and indexes one half diamond to the side (LWD) as the material advances another strand width.*



*The upper knife descends again to form another row of half diamonds to complete the design.*



*The upper knife ascends again, indexing (LWD) to its original starting position. The cycle continues until the sheet of expanded metal is complete.*