

MICROFORM[®] EXPANDED METALS

PRECISION ENGINEERED BY WALLNER EXPAC



The purposes of expanded metal are to conceal, filter, enclose, protect, and decorate. Strong, lightweight, and visually appealing, Wallner Expac- a 100% employee-owned company and North America's largest manufacturer of light gauge expanded metals for filter media backing- manufactures expanded metals for use in many applications. For specialized applications such as microfiltration, battery technologies, and lightning strike protection, Wallner Expac precision engineers its MicroForm[®] line of micromeshes.

THE WALLNER EXPAC ADVANTAGES

Not all meshes are created equal. Our Shear-Form[®] service of manufacturing expanded metal yields no waste while providing a high surface area-to-volume ratio, pattern uniformity, and has no points or welds that can separate- all crucial for strong and lightweight material.



Engineered to precise specifications in our US-based ISO-9001 certified plants, a coil of metal is unwound and fed into our own designed and built expanders between a set up upper and lower knives. Instead of punching the metal, the knives simultaneously slit and stretch it, yielding no waste discs and producing a greater amount expanded metal from the raw.

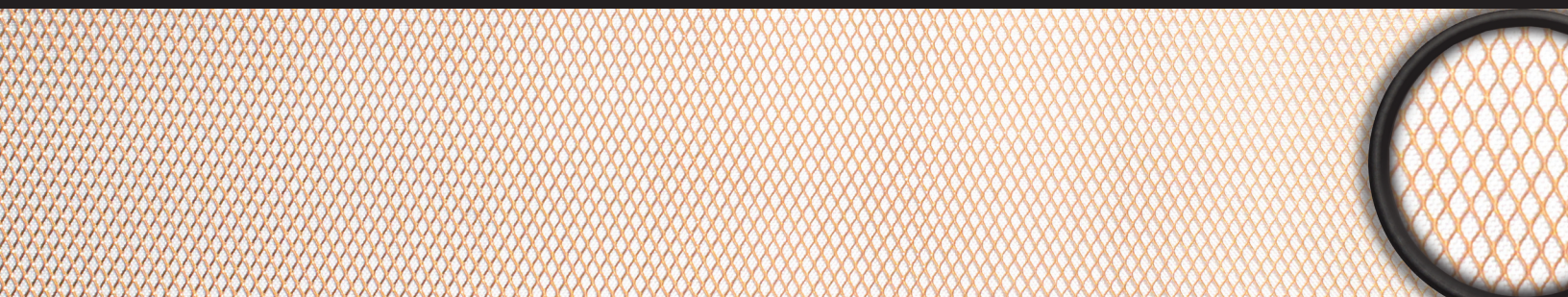
The openings can be adjusted by fine-tuning the strand pitch and width- essential for controlling the amount of light, air, sound, or fluids that can pass. MicroForm's[®] small holes provide privacy, can replace solid anode and cathode foils within a battery's architecture, protect mission-critical aeronautical instrumentation from electromagnetic interference, can be embedded within the fuselage and wings of aircraft or blades of a wind turbine to protect against lightning strikes, and can act as a prefilter screen for larger particulates. Flattening the strands can further reduce the overall thickness and elongate the pattern.



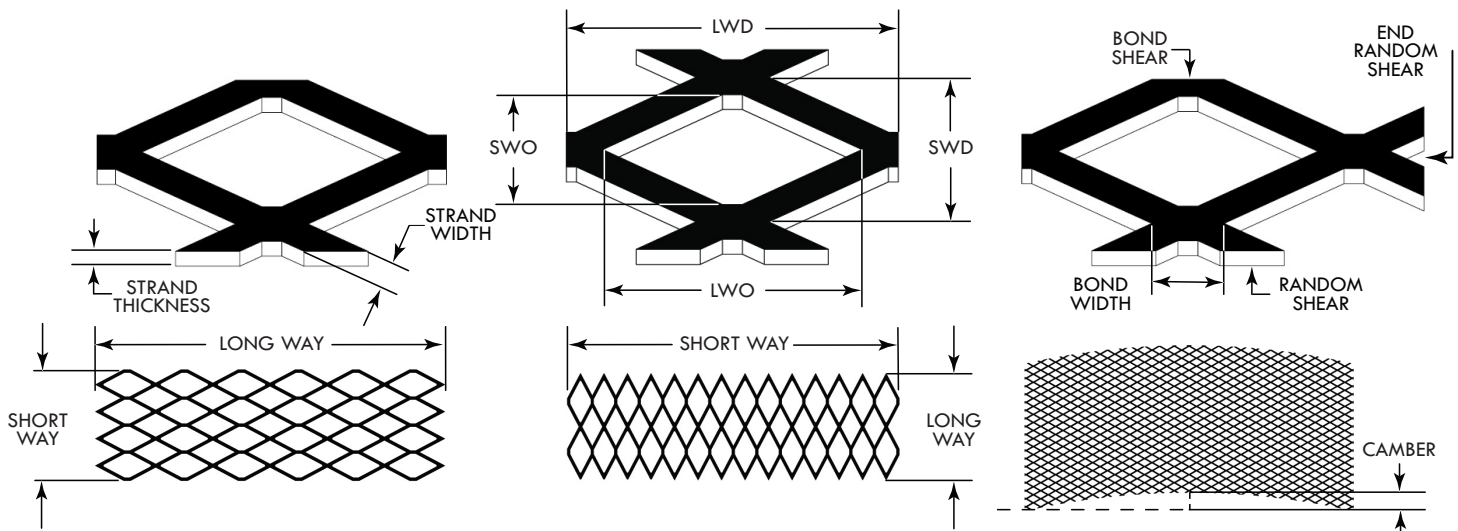
By its very nature, expanded metal has an open area percentage and high strength-to-weight ratio, both of which can be optimized to meet the application's needs. Engineered to precise specifications in our U.S.-based, ISO-9001 certified plants, our scalable manufacturing lines and responsiveness allow us to rapidly produce expanded metals with tunable parameters to meet customer specifications. Because we design and build our own expanders, we can tightly control the manufacturing process and fine tune all specifications including specific weight.



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CAPABILITIES AND PARAMETERS



MICROFORM® EXPANDED METAL PARAMETERS

- ◇ Widths up to 25"
- ◇ LWD from 0.050"–0.125" (1,270 μm–3,175 μm)
- ◇ Base metal thickness: 0.002"–0.032" (50.8 μm–812.8 μm)
- ◇ Metals: Aluminum, Copper, and more
- ◇ Options include slitting, flattening, and more

SERVICES AND CAPABILITIES

Our state-of-the art, on-site tooling facilities support our manufacturing with post-production services including:

- ◇ Wire EDM
- ◇ Surface and OD grinding
- ◇ Precision inspection equipment
- ◇ CNC machining, lathes, radial drills
- ◇ Stamping, Forming, Flattening, Slitting, Welding
- ◇ Engineering & Design, creation of customized patterns

APPLICATIONS FOR MICROFORM®

- | | |
|-------------------------------------|---------------------------|
| ◇ Battery Technologies | ◇ Medical |
| ◇ Airbag Filters | ◇ Plumbing |
| ◇ EMI/RFI Shielding | ◇ Shading |
| ◇ Mist Elimination, Dust Collection | ◇ Modeling & Craft Wire |
| ◇ Lightning Strike Protection | ◇ Screens- Doors, Windows |
| ◇ Speaker Grilles, Acoustics | ◇ Food Processing |
| ◇ Baskets, Containers, Sifters | ◇ Military & Aerospace |

EXPANDED METAL TERMINOLOGY

- ◇ LWD: Long Way of Diamond/Design dimension.
- ◇ LWO: Long Way of Opening dimension.
Used to indicate clear opening in the long direction.
- ◇ SWD: Short Way of Diamond/Design dimension.
- ◇ SWO: Short Way of Opening dimension.
Used to indicate clear opening in the short direction.
- ◇ STRAND THICKNESS: Equal to the thickness of the sheet metal being used.
- ◇ STRAND WIDTH: The amount of metal fed under the dies to produce one strand.
- ◇ BOND SHEARED: Where two strands intersect, eliminating prongs or jagged edges.
- ◇ RANDOM SHEAR: This type of shearing leaves prongs or jagged edges.
- ◇ END RANDOM SHEAR: This type of shearing leaves prongs or jagged edges on the ends.
- ◇ CAMBER: The maximum distance between the edge of the expanded metal and the straight edge

