



Early Supplier Involvement in Speaker Grilles

What is Early Supplier Involvement?

Early Supplier involvement (ESI) is a business and manufacturing technique that was first developed in the Japanese automotive industry. It involves collaborating with suppliers in a cross-functional team during the early stages of the product development process. The complexity of many new products creates the need for external cooperation at the early stages of innovation.

ESI allows companies to benefit from the expertise and ideas from the supplier. This can result in better production quality, lower costs, and faster development of the product from an initial concept to a product on the market. By involving the supplier early on, companies are able to more quickly establish product, process, and supply chain strategies.

ESI has become a popular business technique for the development and production of a wide variety of products, including the production of speaker grilles.



Why is ESI Important in the Speaker Grille Industry?

ESI of speaker grilles is critical in the loudspeaker and audio development process. Some consumers might use the speaker grille merely as a cover, but there is actually quite a bit of design and engineering involved in creating a speaker grille that can protect and support the excellent sound quality of the speaker. There is a delicate balance between speaker protection and sound distortion that has to be reached. Several design factors that can benefit from ESI include the following:

RIGIDITY OF THE GRILLE:

The rigidity of the grille is an important design factor. A hard metal grille, for example, provides more robust protection for the speaker. However, a metal grille is more rigid and is not able to move freely with the speaker's vibrations. If the vibrations are too strong, or if the grille is too rigid, it could damage the speaker. This is why the speaker's output level has to be considered when designing a speaker grille, and vice versa. This also makes the early involvement of a supplier very important in the development of a speaker. If the supplier of the speaker grille is involved early on, the product's development can proceed more quickly.

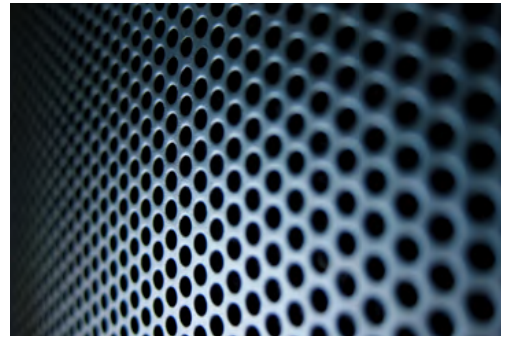
NUMBER OF HOLES:

Another important part of the speaker protection/sound quality balance is the number and pattern of the holes in the speaker grille. The more holes in a grille, the more sound that is able to pass through without being distorted. Too few holes can distort the speaker's sound output, especially at higher sound pressure levels. However, if there are too many holes, the speaker grille would allow too many small foreign objects to enter the speaker, and would consequently lose its protective quality.

While designing a speaker, the product development team should be aware of the manufacturing capabilities and limitations on the number of holes that can be placed in a speaker grille. ESI helps reduce the time and money required for redesign of the speaker based on manufacturing limitations.

GRILLE MATERIAL:

Another engineering factor that makes ESI important is the choice of speaker grille material. Each kind of metal allows a different amount of sound to pass through it (sound level transmission), based on the density of the material. By getting involved early on in the development process, the grille supplier can offer their knowledge and expertise to the product development team by helping them choose the most appropriate grille material based on speaker specifications.

**MANUFACTURING PROCESS:**

Different manufacturing processes work better than others, depending on the desired material and hole pattern. For some materials and patterns, metal punching could be the best choice. For other materials and thicknesses, laser cutting the pattern into the material could be more beneficial for time and cost savings.

AESTHETICS:

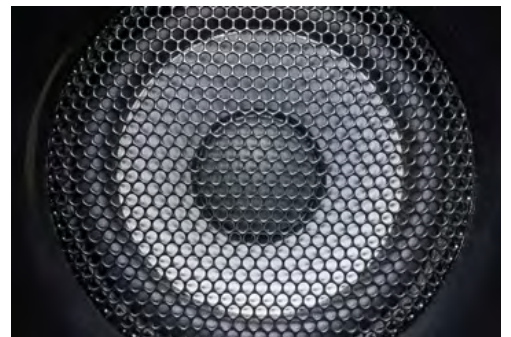
In addition to the mechanical and acoustical aspects, there is also an aesthetic aspect that must be considered. When buying a speaker or audio system, customers usually don't want just the same old thing—they want something new and fresh. This makes the aesthetics of the speaker grille an important design consideration as it is one of the first things that will stand out to customers. Some factors to consider include the size, shape, and hole pattern. If the supplier is involved early on in the development they can offer design input as to the available manufacturing capabilities. This can lead to even greater innovation by the product development team.

In speaker grille manufacturing, there is a significant margin for error due to the thousands of tiny holes and shapes that are cut into the grille. Even the slightest imperfection can throw off the aesthetics and leave the grille looking visually unpleasant. ESI can help refine the design to avoid errors, and the supplier has time to work out the manufacturing processes to fix additional problems.

Metalex and ESI

Part of what makes Metalex an ideal ESI for speaker grilles is that we are experts in the field of perforated metal products. With decades of experience creating the highest quality perforated products from a variety of metals and thicknesses. We can help our customers through every step of the development process to create the best final product.

It is always easiest to work with a supplier located in your same country. This makes Metalex an optimal collaborator as an early supplier of speaker grilles. Being based in Illinois, we are easy to contact and convenient to work with. By choosing an American supplier for your speaker grille, your company will have better and faster communication, which will result in a much higher-quality product than you would receive from a supplier offshore.



To learn more about how we can serve you, [contact us](#) today!

About Metalex

Metalex, powered by UPG, was founded in 1962 in Libertyville, IL by two local entrepreneurs. With diverse and complementary expertise in salesmanship and engineering, they grew their company with one machine in a small factory on the east edge of town. In 1979, Metalex moved into a facility on the site of a former horse farm in south Libertyville.

Metalex continued to grow and added to the original building in 1983, increasing total square footage to 150,000 and equipment totaling 23 expanding lines, a full machine shop and a secondary processing department that includes shearing, stamping and plasma cutting. In 2005, Metalex acquired Arcor, a manufacturer of perforated metal and a variety of metal tubes primarily for the fluid filtration industry.

In 2011, Metalex acquired Morton Manufacturing, the leading manufacturer of anti-slip walking surfaces for railcars, specifically for original equipment manufacturers (OEMs). The company also supplies distributors, OEMs and aftermarket customers in the agricultural, heavy equipment and general industrial space.

Morton has been providing customers with consistently superior products and excellent customer service since 1903 from the 200,000-square-foot facility, also located in Libertyville. Morton's Open Grip®, Deck Span® and Tread Grip® proprietary product designs provide non-slip surfaces that meet or exceed federal specifications for slip resistance.

In 2014, Metalex and Morton merged under the Metalex name. Two years later, in 2016, Metalex opened a facility in San Luis Potosi, Mexico. In 2019, Metalex was acquired by UPG Enterprises LLC, a strategic operator of metals and logistics companies across North America.



Learn more about all of Metalex's products and the processes we use to manufacture them.

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