

Form and Function

Expanded metal offers extensive options for architects and designers

By **Michael J. Gilboy** Posted May 03, 2021



St. Barnabas Medical Center, Livingston, N.J. Photo courtesy of Spantek Expanded Metal.

Selecting building materials can be a daunting task with so many options available to designers today. When considering versatility, cost and design impact, expanded metal offers some of the most extensive options in both form and function.

Expanded metal is an open area mesh product that can provide a wide array of pattern sizes, designs and open area options to satisfy the most discriminating design challenge. Expanded metal panels can be used for such applications as ceiling tiles, railing infills, sunshades, privacy and security screens, facades and building envelopes, to cite a few examples.

As in the case of most metal building products the devil is in the details, which is why it's important to consult early in the design stages with a qualified manufacturer with

experience in architectural applications using expanded metal products. Fortunately, the member companies of [EMMA](#) (Expanded Metal Manufacturers Association) division of [NAAMM](#) (National Association of Architectural Metal Manufacturers) can provide architects, engineers and designers with expert guidance in the selection and design of expanded metal products for most any project.

When considering expanded metal as an architectural element or design medium there are several key factors to consider:

Form versus function: Is the design challenge intended to make a statement, such as a bold building façade with backlighting, or it is more of a functional element such as a railing infill? Deciding this first key question will help determine what options are best suited to meet your project's objectives.

Material selection: Expanded metal can be produced from any malleable metal product such as ferrous and non-ferrous steel, aluminum, copper, brass, or even precious metals. In addition, many EMMA member companies with experience in providing architectural applications can assist in selecting and providing metal finishes such as anodizing, powder coating, fluoropolymer finishes or PVC coatings. In today's volatile material cost environment EMMA members can assist with material selection and cost impact to assure availability within budget parameters.

Open area or look of the product: The diversity of expanded metal allows for almost endless open area options ranging from as low as 10% to as high as 80% open. In addition, the size of the openings can vary from as small as 1/8-inch up to as large as 8 inches spacing. Other open area products do not provide as wide a range of options with respect open area designs.

Flat or raised: Unlike perforated metal or wire mesh, expanded metal can be provided in either a flattened state, whereby the material is flattened to a two-dimensional plane, or it can be provided in the original expanded state which provides a three-dimensional raised product. The use of raised architectural patterns can provide excellent screening and light control while offering a varied look when viewed from different perspectives. No other open area metal product offers this level of variety or design options.

Framing or mounting options: Expanded metal can be installed in a framed opening, such as a ceiling grid or railing infill, or it can be mounted in a free-floating state with anchoring to a concealed framing system. Again, the versatility of expanded metal provides a myriad of options for installation. The member companies of EMMA can assist with selecting a panel mounting system that is best suited for your application.

Pattern direction: Expanded metal patterns are typically formed in a diamond-shaped opening with a long way dimension (LWD) and short way dimension (SWD) of each opening. The direction of the openings with respect to panel size can have both a design impact as well as influence production and material cost considerations. Our

EMMA member consultant can assist early in the design stages to help guide decisions so that you are assured of a successful installation with maximum design impact.

To ensure a successful installation, the most important element in any design process is planning. When faced with design challenges that call for an open mesh metal product, be sure to include an experienced EMMA manufacturer in the planning and design process. You can find more detail by visiting naamm.org.

Michael J. Gilboy is the president and COO of Spantek Expanded Metal Inc., Lincolnton, N.C. He is also Chairman of the [EMMA](#) (Expanded Metal Manufacturers Association) division of NAAMM (National Association of Architectural Metal Manufacturers) and the current board president of NAAMM. To learn more, visit naamm.org.