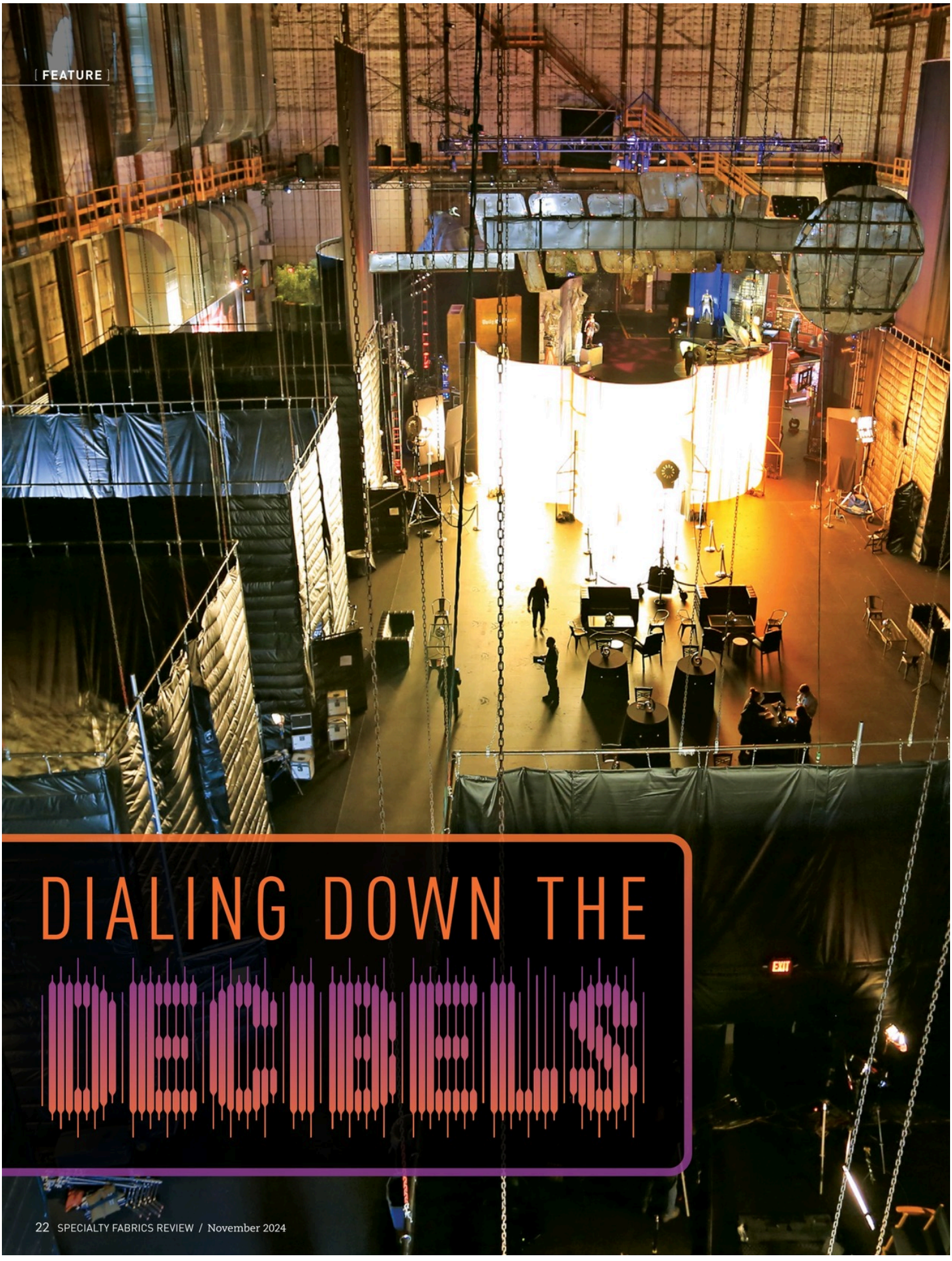

DIALING DOWN THE

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Environmental Noise Control was asked to provide noise mitigation for a press junket and movie premiere held on a loading dock. The company deployed its proprietary STC-25 acoustical barrier blankets, fabricating six 20-foot-wide, 30-foot-long and 20-foot-high suites where media could privately interview and record cast members. Image: Behrens and Associates Environmental Noise Control

As awareness increases of the toll noise can take on physical and mental health, interest is turning to acoustic and sound-controlling textiles as a solution to dial down the decibels.

by Pamela Mills-Senn

In August, Hollywood Park, adjacent to the SoFi Stadium in Inglewood, Calif., hosted the HARD Summer music festival, a two-day celebration of genres including electronic, techno, house, and drum and bass. The venue included four outdoor stages in the parking lots around the stadium, drawing more than 80,000 attendees each day.

Unfortunately, the festival also drew hundreds of noise complaints from residents in the surrounding communities—some as far away as 10 miles.

The primary culprit was the elevated American Airlines Plaza, which allowed the bass frequencies to escape, further assisted by the stage's positioning, reflections off the buildings and the weather. As a result, shortly thereafter, Inglewood's mayor decreed music performances would no longer be allowed at the plaza. Additionally, the city determined more stringent sound and engineering requirements are needed, especially to manage bass frequencies.

Among the fabric types CLIPSO® offers are several varieties of acoustic textiles. The above shows some of the latest colors included in the company's SO ACOUSTIC line. Image: CLIPSO Americas

Days of booming, reverberating music can be stressful, potentially raising the blood pressure of those who are unwillingly subjected to it. However, exposure to lower decibel levels also can have myriad short and long-term health consequences, especially if the exposure is protracted. Consequently, as realization of the physical and psychological impacts has grown, so has the demand for acoustical and sound-control products, says Max Behrens, asset manager for Behrens and Associates Environmental Noise Control (ENC), headquartered in El Segundo, Calif.

"The growing body of research and scientific consensus has created a greater desire to limit the exposure people have to consistently loud environments while minimizing the impact on the surrounding communities," he says. "The increased awareness of noise pollution has also fostered changes in local noise ordinances implementing stricter limitations on permissible noise levels that require companies to seek more mitigation solutions."

OSHA regulations and company efforts to create better working conditions for employees also contribute to the interest in acoustic/sound-control textiles, Behrens adds. However, in the U.S.—at least where it concerns newly built environments—builder awareness over room acoustics is lagging "far behind other countries," says Pamela Marchesano, senior territory manager for CLIPSO® Americas.

"In Europe, for example, specific room acoustic requirements are designed into schools, restaurants, office buildings and many other market segments," she explains. "The U.S. is beginning to see more requirements for room acoustics, but many are still voluntary. CLIPSO Americas is on a quest to educate architects and designers about room acoustics."

This acoustic wall from Environmental Noise Control was created by stacking together 8-by-20-foot panels to make a 16-foot-high wall with a graphic overlay. It was installed against the property line of a Hampton Inn in Sacramento, Calif., to protect hotel guests while a construction project was underway. Image: Behrens and Associates Environmental Noise Control

ACOUSTIC VS. SOUND CONTROL

Headquartered in Closter, N.J., CLIPSO provides a site-fabricated stretch system deployed for acoustical, aesthetics, custom printing or antibacterial purposes. It can be designed in a variety of shapes (circular, square/rectangular or three-dimensional), says Marchesano, explaining the system "can be any combination of these attributes." Multiple lines are available, such as the original SO CLASSIC, which can be installed for acoustic as well as for aesthetics, and SO ACOUSTIC, deployed for acoustic installations. Both products can be custom printed and come in several different widths.

"The fabrics are polyester knitted in a circular fashion and coated with a proprietary polyurethane," Marchesano says. "The circular nature of the weave is important, as our fabric doesn't fray like typical fabrics.

"The fabrics themselves are not acoustical," she continues. "In a stretch fabric system, the mechanism that allows for acoustical absorption is the absorptive material behind the fabric. The fabric, when stretched, has small holes that allow for the sound to get through the fabric and absorb into the acoustical material. With thicker absorptive material, the more the lower frequency range will be absorbed and controlled." CLIPSO offers these cores in two thicknesses constructed from 100% synthetic polyester fiber. Each provides a different noise reduction coefficient.

There's a difference between acoustic and sound control, says Marchesano. Acoustic-control products are designed to address/control sound (echo, reverb, etc.) within a space, and sound-control products seek to prevent sound from coming through walls, ceilings and other areas, controlling noise and vibration.

Or, as Behrens explains, acoustic products alter how people perceive or experience sound/noise within a specific environment whereas sound control attempts to block, absorb or modify noise emanating from "static noise sources."

ENC specializes in acoustic and noise mitigation. Originally targeting primarily the oil and gas industry, the company later expanded into education, entertainment, hospitality, manufacturing and data and distribution centers, among other industries. The products are customizable and available in a range of sizes, including large-format versions stretching "40 feet high and over 1,000 feet long," Behrens says. Depending on the application, the solutions are made from polyvinyl-chloride-coated nylon, solution-dyed acrylic and a combination of natural and poly-fiber material.

Environmental Noise Control installed its STC-25 acoustic blankets around this Southern California pickleball court to help ward off complaints about the noise that escapes from the courts. Image: Behrens and Associates Environmental Noise Control

Among these are the Quiet World industrial acoustical blankets. Available in five standard sizes and designed for large, heavier construction or industrial applications, the blankets utilize solution-dyed acrylic or polyvinyl-chloride-coated fabrics. Considered sound-control products, the blankets can be installed indoors or outdoors by mounting them to scaffolding, fences or other types of support structures. Due to their large sizes, installation time is reduced since it's possible to cover a larger area with fewer blankets.

As realization of the physical and psychological impacts has grown, so has the demand for acoustical and sound-control products.

The classroom at upper top was originally designed to allow airflow for heat and air conditioning between classrooms, but this amplified the sound from room to room, creating distractions. The photo above shows the SoundSafe™ acoustical barriers from E Squared Technical Textiles being installed to mitigate this issue. Images: E Squared Technical Textiles

A smaller version of this style is the Quiet World Lite acoustical blankets made from solution-dyed acrylic. Available in two standard sizes, they're designed for multiple interior applications—for example, commercial, hospitality and entertainment venues and educational facilities—that don't require a "heavy-duty noise mitigation solution," Behrens explains. Because of their smaller size, no equipment is needed for installation. Both the Quiet World and the Quiet World Lite blankets contain multiple layers of sound-absorbing/noise-blocking material, tested for effectiveness by an independent lab.

NOISE REDUCTION, NOT ELIMINATION

Behrens says the biggest misperception people have around these kinds of products is that noise will be 100% blocked. Noise can be controlled or reduced, he explains, but it will never be completely eliminated.

Edward J. Silva, vice president of Global Business Development and Digital Marketing for E Squared Technical Textiles (E2), says he often encounters the mistaken idea that the company's SoundSafe™ products are sound absorbing when instead, they reduce sound transmission from room to room.

Headquartered in Hillside, N.J., the company manufactures polymer-coated fabrics and film sheeting for applications including geosynthetics, construction and marine safety. E2's acoustic-barrier/noise-control reinforced substrates are offered under the SoundSafe product brand.

SoundSafe acoustic barriers are constructed as a reinforced mass loaded vinyl (MLV) using polyvinyl chloride as the base and mineral additives providing increased mass. The reinforced MLV consists of high-strength polyester fabric, providing durability and break and tear

strength. Available in two fire-rated versions—Standard (NFPA 701 and UL 94) and Ultra FR (ULC-S102 and ASTM E84)—and in several widths and weights, they can be used for interior and exterior applications. The U.S.-made SoundSafe series is Build America, Buy America Act compliant.

"The reinforced MLV is designed to block sound," Silva explains. "The result is a product that prevents sound from transmitting through the acoustic barrier. It is designed as a standalone substrate as well, in conjunction with standard plasterboard in architectural applications."

The barriers have been installed in movie/television soundstages, classrooms (as dividing curtains and repositionable walls), outdoor recreational courts, entertainment venues and construction sites (noise abatement curtains on scaffolding) to name a few. They also have been used in the energy industry as noise-suppression walls for drilling and fracking. Due to SoundSafe's reinforced construction, which provides dead load strength for grommeting and fastening in many of these applications, the need to add additional reinforcement is eliminated.

Another issue Silva mentions is underestimating the products' weight, which is .5, 1 or 1.5 pounds per square foot, making them "very heavy," he says. "Weight is the greatest consideration. These products need to be designed and engineered into the project. If the fabricator is not set up to deal with the weight of the sheets during fabrication and installation, it can be a challenge."

ROBUST AND GROWING

Silva says he's seeing demand grow, driven in part by the enhancements the company has innovated into its products, such as fire resistance, wider widths, UV resistance, colors, decorative options, the launch of a printable product in 2022 and the ability to offer a product with up to 75% recycled content. Last year, the company released a fabric-coated MLV "with great success," says Silva, adding that he expects demand growth to continue.

One factor contributing to demand, which Behrens describes as "robust and growing," is that more people are working from home, making them increasingly aware of noise, causing them to look to the market for "readily available solutions," he says.

"The increased sensitivity to noise and its impact has also led to consumers, restaurants and companies becoming more aware of the need to provide a safe and comfortable space," Behrens says, adding that they are "currently piloting a new anti-graffiti finish that will help protect materials utilized in more urban settings."

Due to its outreach to designers and architects, CLIPSO is seeing an uptick in specifications, says Marchesano, adding that these efforts are paying off. The company's stretch fabric systems are also popping up in dining and recreational areas of senior living facilities and in private residences with high or vaulted ceilings.

"Due to the proprietary coating on our fabrics, we can also do natatoriums and indoor pools, which are always an acoustical nightmare," she says. "Several hot-yoga studios and day spas have also asked for help in their spaces.

"Noise interferes with humans in many ways," Marchesano continues. "Reverberation and room noise can be detrimental for productivity in office workers, children in school, health care institutions and many other venues."

Pamela Mills-Senn is a Seal Beach, Calif.-based freelance writer.

THWARTING "AUDITORY INTERRUPTION"

A loading dock might seem an odd place to hold such a high-wattage event, but in 2021, that is where the press junket and movie premiere for *The Suicide Squad* took place. The space in New York City's Moynihan Station is beautiful, says Max Behrens, asset manager for Behrens and Associates Environmental Noise Control (ENC) in El Segundo, Calif. "[But it] is full of reflective, flat surfaces, which would make successful, simultaneous audiovisual interviews near to impossible," he adds. "It was of the utmost importance that worldwide media outlets could obtain high-quality interviews with the stars."

ENC was asked to devise sound mitigation for the event. The solution was to create six 20-foot-wide, 30-foot-long and 20-foot-high "suites" utilizing the company's proprietary STC-25 acoustical barrier blankets.

Placed around the loading dock, the private interview suites enabled the media to converse with cast members without "auditory interruption," says Behrens, adding this was "critical so the segments could be played on the radio, television and online."

The press junket and premiere party were a big success, he recalls, with the resultant recorded audio and video interviews played worldwide.