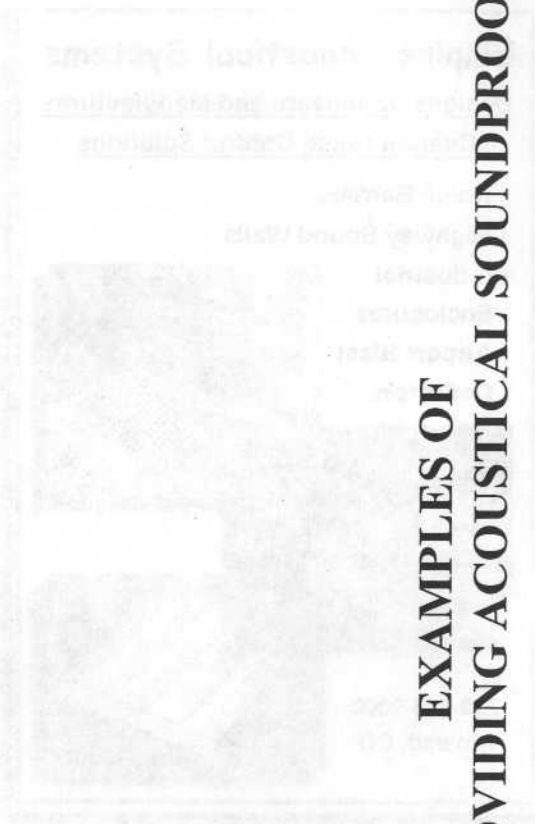


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Back to soundproofing - Page 1

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Salmon Arm, British Columbia
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Allied Witan Company
Cleveland, OH
440-237-9630

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Vibrasciences Incorporation
Branford, CT
203-483-6113

Vibrasciences manufactures a complete line of industrial noise control products, such as soundproofing materials, sound barriers and acoustic curtains. We also offer specialized products, including Air Turbine Tools®, VIB-X Pads as well as Technifoam and Sonex

Tectum Inc.
Newark, OH
888-977-9691

Tectum provides noise control solutions, specializing in abuse- and impact-resistant panels. Some products offered include wall panels and systems, ceiling tiles, acoustical enclosures, curtains, ceilings and wall treatments.

The Proudfoot Company, Inc.
Monroe, CT
203-459-0031

The Proudfoot Company provides soundproofing material such as acoustical correction, noise control and specialty concrete masonry units. Our sound-absorbing materials include baffles, resonators, quilted sound screens, wall panels, sound-masking systems and flexible noise barriers.

Tecnifoam
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763-537-7000

Tecnifoam provides unparalleled choices for preventing, controlling or suppressing noise. Offering decades of experience in engineering, fabricating and manufacturing noise control products, Tecnifoam has everything you need to make your world a quieter place.

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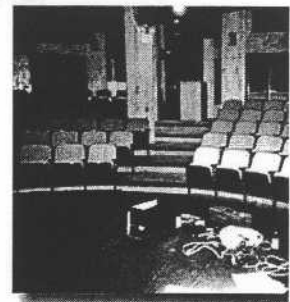
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Architectural Acoustics

The Wyle Acoustics Group is dedicated to providing full-scale professional services to clients associated with the building industries. Wyle engineers and technicians work closely with each client to ensure that the acoustic design is integrated with the other professional disciplines. Wyle strives to understand each client's individualized needs and requirements and works to develop innovative, yet practical, and cost-effective, solutions.

A selection of Wyle's comprehensive services includes:

- Acoustic design of all building types
- Control of external noise and vibration
- Privacy issues and noise control within buildings
- Control of noise and vibration from mechanical and electrical systems
- Measurement of sound and vibration



Representative project types include:

- Corporate campuses and office buildings
- Government facilities
- Auditoria and theatres
 - High-tech and research facilities
 - Courtrooms
 - Radio and TV studios
 - Educational facilities
 - Residential housing developments
 - Hotels
 - Restaurants and night clubs
 - Specialized noise and vibration studies
 - Industrial laboratories

Building and Structural Acoustics

Wyle has a long history of research in architectural acoustics that complements and supports the consulting work. Special studies include:

- Statistical Energy Analysis model for predicting noise and vibration inside the proposed US Space Station (NASA award for Best Product).
- Model to predict the sound levels inside aircraft cabins.
- Development of a comprehensive database of the noise reduction for over 100 different housing elements.

- Development of noise reduction metrics, such as the External Wall Rating (EWR) and the Low-Frequency Weighted NR (ALNR) as alternatives to the Sound Transmission Class (STC) for improved prediction and design application.
- Fundamental research into the transmission of sound through materials and complex structures.
- Development of innovative designs for low-weight, high transmission loss structures.
- Measurement of absorption material properties.
- Studies on the application of new composite materials.

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Explosive growth of air travel has created dozens of busy airports, many serving as regional hubs. This welcome development for air travelers has been an unwelcome problem for people living in the pear-shaped takeoff and landing zone. Community noise problems have seriously curtailed expansive airport and airline industry ambitions. The solution: funded programs to abate noise.

The FAA funds Community Noise Programs to achieve noise contours of 65 dBA. Currently, these programs offer free soundproof windows and doors to homeowners, schools and houses of worship. This program is operating in all major and regional airports in the country. Between 1996 and 2003, the FAA program funded \$1.6 billion of soundproofing construction. Between 2004-2009, and additional \$1.3 billion will be funded.

Achieving high STC ratings for walls and ceilings has traditionally been too costly and risky – until now. Quiet Solution offers airport community program professionals a complete line of high-performance products to soundproof walls and ceilings.

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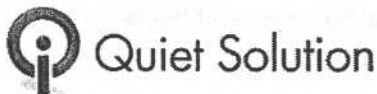
Airport noise consultants occasionally specify resilient channels, hats and clips to try to achieve STC 40. A word of caution: these techniques are famous for failing. Acoustical engineers estimate failure rates of 50% during installation, and a financially dangerous 90% within three years due to "improvements". A simple installation of a shelf or mirror can destroy a resilient channel installation (see White Paper).

The most effective way to mitigate residential noise is to (i) identify and measure the noise source, both internal and external; (ii) if allowable by the airport authority, set a dB goal for the desired level of quiet, and translate that goal into the appropriate Sound Transmission Class using the formula "dB in noisy area minus dB desired in quiet area = required STC"; (iii) select and specify the appropriate Quiet Solution Soundproofing System materials for your project.

Questions about using our products? We are here to help. Professionals: Consult with our specialists now at 1-800-761-7617.

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QUIET SOLUTION INTRODUCES QUIETROCK 525 SOUNDPROOF DRYWALL WITH SCORE AND SNAP

QuietRock 525 provides the best value and performance for soundproofing

SUNNYVALE, Calif., January 10, 2006 - Quiet Solution, LLC, provider of award-winning soundproofing products and solutions, today announced the availability of the lowest-cost, high-performance soundproof drywall panel, QuietRock 525. With simple score, snap and hang, QuietRock 525 installs and finishes like standard drywall and requires no special tools or equipment.

QuietRock 525 weighs about the same as standard drywall and provides superior sound isolation at a lower total installed cost than other methods. With STC values of up to 72, QuietRock 525 provides acoustic mitigation equivalent to eight layers of standard drywall, making it ideal for multifamily, home and commercial construction. The patent-pending CPG composite technology in QuietRock QR-525 uses advanced viscoelastic polymers, ceramics and gypsum (CPG) in a constrained three-layer fabrication.

"QuietRock 525 represents the next generation in gypsum wallboard soundproofing and an exciting edition to our lineup," said Andy Ackerman of P&A Drywall Supply in St. Louis, Missouri. "Over the years, QuietRock has proven to be a highly reliable solution to sound and noise mitigation in residential and commercial buildings. The new 'score and snap' QuietRock 525 gives us an easier to use, more affordable soundproof drywall for our demanding customer base."

"Our customers have had great success with QuietRock since we started carrying the product," said Craig St. John of Westwood Building Materials in Lawndale, California. "We looked at the alternatives and nothing else is as advanced, or has been tested as much, as this line of proven products. The new QuietRock 525 brings true ease of use to soundproofing and is already so popular we are selling it by the trainload."

"QuietRock products have been used over the past three years in over 10,000 successful projects. We developed QuietRock 525 to make high-performance soundproofing more affordable and easier to use. Now builders and architects can achieve the lowest installed cost, factoring in material and labor, and deliver superior soundproofing with proven QuietRock technology," said Kevin Surace, CEO of Quiet Solution.

QuietRock 525 delivers lab-tested soundproofing performance

The 5/8" panels were tested by globally recognized labs at the National Research Council of Canada (NRC), which showed the panel delivered an STC value of 51 when used on just one side of a single wood stud assembly (compared to only 34 with standard 5/8" gypsum), outperforming standard gypsum walls by 17dB. QuietRock 525 is also one hour fire-rated, equivalent to Type X drywall in industry-standard full scale testing. Copies of test results are available for download from the company's website.

QuietRock 525 delivers on features important to professional builders, architects

- Score, snap and hang—no special tools required
- Installs and finishes like ordinary drywall
- Highest performing soundproofing panels (up to STC 72)
- One hour full-scale fire-rated

QuietRock 525 panels are manufactured in 4'x8', 4'x9', 4'x10' and 4'x12' sizes and are available exclusively through distributors and dealers of quality building materials throughout North America.

ABOUT QUIET SOLUTION, LLC

Quiet Solution, America's most trusted manufacturer of soundproofing products, provides world-class building materials for residential and commercial construction. Its high-tech materials provide the highest and most reliable Sound Transmission Class and Impact Insulation Class solutions on the market, as well as the first THX Certified soundproofing solution in the world. As an innovative material science and manufacturing company, Quiet Solution deploys technologies to solve large-scale problems in the construction sector. Its patent-pending, lab-tested products are based on advanced viscoelastic polymers, proprietary CPG composites, and constrained layer damping. All the company's products are environmentally friendly and manufactured in the USA. The company is headquartered in Silicon Valley. For more information, visit www.QuietSolution.com.

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###

4 Reducing Noise

When considering reducing noise in any system (from a lawnmower to a car to a machine to a home to an apartment), four major tradeoffs need to be considered. These are primarily weight, space, cost, and aesthetics. Given enough money, and unlimited weight and space, one could construct a 10-foot thick lead barrier, welded on all sides. Given the mass of this barrier, it would take considerable sound energy to make it vibrate, so the loss through it would be significant, likely exceeding 120dBA (meaning that a 120dBA sound on one side would be reduced to 0dBA on the other). In construction, this is called Sound Transmission Class (or STC rating). For machines and other industries, it is measured in other ways, primarily as a loss factor, and is not as easily converted to an actually dBA sound loss without further measurement on the machine itself. However the concept itself is called "mass loading". The idea (in essence) is to place extra mass between the noise source and you. One could also weld lead onto many metal surfaces of a car to mass load the vehicle and make it quieter. Remember, more mass is harder to push and pull (with air pressure), so the energy is converted to heat.

However, few applications have an extra 10 feet to spare, let alone the cost (exceeding a few hundred thousand dollars) and the weight (exceeding 20 tons). It also turns out that to achieve reductions above 5-8dBA in any system requires significant additional mass. In fact, mass loading, while 200+ years old (technology wise), is not a very efficient method of dissipating noise and vibration. And most applications cannot afford the significant cost or weight it requires.

There are many examples of mass loaded materials for soundproofing however including mass loaded vinyl (typically at 1 pound per square foot) as well as asphalt based mats. It is possible with good mass-loaded vinyl to achieve stand-alone isolation reductions of 27dBA, resulting in 5-8 dBA of loss in a wall system.

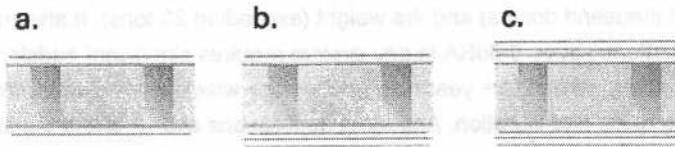
Another method is by creating many surfaces for the sound to vibrate, each one having little loss, but in aggregate, absorbing a fair amount of sound. Closed-cell foams are popular for this, however they are good for reducing sound WITHIN a room, they rarely have much transmission loss through them. So they do not make good barriers. One can imagine the sound waves passing (and vibrating) each little cell of foam. There may be hundreds of cells that need to be vibrated before the sound has passed all the way through the material, thus causing a small amount of reduction, but a large amount of reduced reflections.

The newest technology in the noise-barrier field exploits the viscoelastic properties of some materials. By formulating special chemicals that are very viscoelastic, they can be deformed by sound waves, take time returning to normal, and within a range of temperatures and frequencies, reduce noise and vibration by 10-20dBA per layer or more. There are two types of viscoelastic materials. Free (unconstrained) layer damping is the simplest way of introducing damping into a structure. The treatment consists of a layer of damping material bonded to the surface of the sound generating source or a sound barrier (such as metal or plastic). The coating goes through tension/compression deformation, along with the bending of the metal, resulting in dissipation of energy. The

material is low cost, typically 1mm thick, and low weight. Constrained layer viscoelastic damping is among the most efficient ways of introducing damping into a structure. This requires the viscoelastic material to be placed between 2 other rigid materials (such as metal, plastic, wood, drywall etc.). It must also have adhesive qualities to bond directly to both outer layers to work effectively.

There are also materials (typically foams and fabrics) for sound absorption within a room. These work primarily by reducing reflections of sounds from surfaces (such as walls and ceilings). They do not stop sound from passing through them. Materials that work well for reducing reflections often are not very good at reducing sound transmission (through them). For instance, while some foams make excellent sound absorbers within a room, they don't make a very good sound barrier. Vinyl (mass loaded), makes a fine barrier, but a poor absorber. So the right material needs to be chosen for the right result.

As we saw in the last section, various materials (such as concrete or gypsum) have a certain amount of sound transmission loss. This loss is mostly due to its mass. But what about adding some viscoelastic material, rather than mass? The results can be excellent. For example:


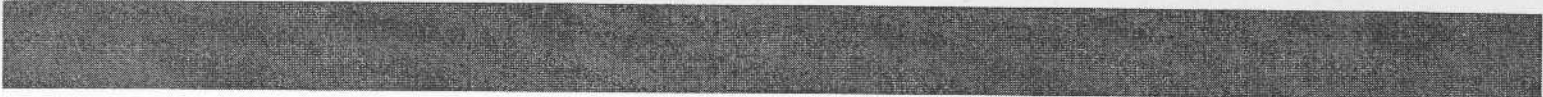


The above diagram represents typical inside wall construction (2x4 studs with 5/8" gypsum wall).

- a. Represents existing/typical construction. This wall has an average STC rating of 34 with R11 Insulation
- b. Represents that same wall with viscoelastic glue between drywall on one side. The STC rating (the amount of sound isolation from one side to the other) is improved by 10-15 dB over (a), to 44-49 dB (with R11 insulation)
- c. Represents that same wall with viscoelastic glue between drywall on both sides and R11 insulation. The STC rating can be improved by 15 to 20dB over (a) to 49-54 dB.

Because the yellow layer is a viscoelastic glue, it works by converting acoustic and vibrational energy into minute amounts of heat. This is very different than mass-loading or wall-fill techniques, and is easily achieved in existing construction at a low cost.

It is critical in every noise reducing application that all air gaps are filled. Otherwise, noise will always take the path of least resistance, which inevitably will be the air. In sheet metal applications (such as machines and auto) this may be done in a number of ways, including adding metal, sealing with rubber or self adhesive patch, or using gaskets to seal doors etc. In construction, a good acoustical sealant (one that never skins over... i.e. never dries) is the best bet. Every wall seam must be completely airtight, between panels, and between floor and ceiling, as well as around wall outlets.



In conclusion, there are a variety of techniques to reduce noise and vibration in a variety of structures today. Every method relies on 1 of 2 principals, mass or viscoelasticity. Both methods can be effective, depending on how much material one would want to use. However, noise propagation is very complex, and even though materials are tested to absorb structural vibration does not mean it will eliminate any particular noise problem. As noise becomes airborne near the source, the sound will travel through the air with little to stop it. The more the source can be treated, or isolated with air-tight barriers treated with viscoelastic or mass-loaded techniques, the opportunity to meet your needs for quiet are enhanced.