



# Auraldex<sup>TM</sup>

a c o u s t i c s

**Industry-Leading  
Products**

**Expert  
Consultation**

**Savings Up  
To 80% & More!**

**Orders Filled In  
Days Not Weeks**

**Shop Where The  
Pro's Shop!**

**World-Class Acoustical Products At Real-World Prices**

"Kudos from Joey Demaio (Geffen/Man-O-War) and Marty Klaufsman (V.P. Midwest Guitar Center District Manager)- they love the rooms, they love the sound, they love the look (of our Auralex treatments). We've successfully transformed an awful sounding sound lock into a fantastic extra vocal booth utilizing Auralex foam- leading us to believe that you could probably mix music in a shoebox with the proper Auralex treatment."

— John Scrip  
Chief Engineer, JEM Music Complex

"Thanks for your patience and advice."

— Walter Sear  
Sear Sound, NYC.  
(Shawn Colvin, Eric Clapton, Natalie Merchant)

"I wish more businesses had your work ethic."

"You guys are great!!! I'm totally convinced of your products.."

"My drum room is now my favorite room in the house thanks to Auralex Studiofoam and my neighbors love me for it!"

— Todd Sucherman  
Drummer, Styx

**We hate to blow  
our own horn, so we thought  
we'd let our customers  
do it for us!**

"Thanks for the totally hip Studiofoam. Tiki Town Studios now sound completely marvelous."

— Michael Molenda  
Former Editor in Chief  
Electronic Musician Magazine

"Your 2" Studiofoam chilled out my room...without sucking the life out of it!"

"We were in a pinch to get our studio padded by tonight and now that will be possible. Your efforts in customer service are to be commended."

"The Auralex Studiofoam surpassed our expectations. It killed the insanity within the network operation center and we can now hold conversations in a normal tone. I would've paid four times as much to obtain these results!"

— John Hulson  
Director  
Digital Laboratories  
Discovery Channel Online

"I have decided to use Auralex 100% in regards to the new studio project."

"The U-Boats are Killer!"

"Well... my room is real quiet now. I haven't finished the control room yet, but just walking between the control room & studio made me realize how bad the acoustics really were!"

"I'll say it again, you guys are great. I mounted the foam I received as you suggested using an aesthetically pleasing geometric design. The room sounds 1000% better. Your foam products have doubled the quality of my monitors! I can hear things I've never heard before."

— The Piper Projects  
Dallas, TX

\*Mention indicates use only and in no way should be construed as an official endorsement by any individual or firm listed.

## A Few Soothing Words To Put Your Mind At Ease

(Or.... "Let Our Competitors Talk Trash About Us—It's The Most Sincere Form Of Flattery!")

Virtually every day a customer will call us and tell us he's ready to buy enough 12" foam to treat his entire house (ok, I'm exaggerating to make a point). We smile and tell him that we *may* end up selling him that much 12" foam, but first we'd like to ask some questions about his structure, his uses and other factors in order to make sure that what he *thinks* he needs is what he *actually* needs. The outcome? Easily 7 times out of 10 he doesn't end up spending nearly as much money as he thought he was going to. There are a couple reasons for this.



First, our products are **way more effective** than others on the market so you can simply get by with using **less**. Second, we're not sitting here thinking only of our short term profits & trying to stick it to each customer who calls in an attempt to squeeze as much money out of him as humanly possible. We couldn't sleep at night if that's the way we ran our company. Lots of businesses say it, but in our case it's actually true: *we really do operate by the Golden Rule*. Our "continuing mission" (shades of Star Trek): to help customers solve their sound problems by selling them only the exact materials they need, nothing more, while providing friendly service & lots of honest, free advice. Heck, we've even been known to refer potential customers to other vendors if we feel that the other vendors' products can better serve the customers' needs. Isn't that comforting....to know that somebody really *does* have your best interests in mind?

Now, hey, don't misunderstand me—we're just like any other business: obviously we need to sell product to keep our doors open and pay the bills. There's one important difference, though: we absolutely refuse to sell a customer something we know he doesn't need or that won't do the job for him.

Our competitors' overblown telephone claims, advertising hype & letters to the magazine editors to the contrary, the plain and simple fact is this: No other acoustical products company **can** or **will** provide you the same **unique mix** of pricing, quality of goods and added value that Auralex has been for nearly two decades.

If our stellar client list doesn't convince you that we're **hands down** the best place to buy acoustical products, put our specifications head to head against any other brand out there. Compare our cut. Compare our colors. Compare our wide range of products. **We're the innovators**....everyone else is playing **follow the leader!** Then compare our prices; even if our foam was the **most expensive**, ours would **STILL** be the best choice! Compare how **quick** we are at filling your order. Compare our products' **longevity** in the real world. Compare our very **knowledgeable** & **friendly** telephone manner. People tell us **time & time again** how refreshing it is to deal with a company who really knows the acoustics business and strives to ensure the satisfaction of their customers.

We're absolutely confident that the more you know about foam in general and Auralex in particular, the more confident you'll be that we are the **only smart choice**.

Generally we're above slinging mud and trying to beat the other guy less than fair & square, but we don't want you to get stung like some of our recent customers tell us they have. They thought they'd save a buck or two by buying an inferior product from a competitor who shall remain nameless, but ended up in a world o' hurt instead because the product they bought isn't **nearly** all it's cracked up to be. One customer told us our stuff "kicks major a\*\*" over the other brand and that his room, now treated with Studiofoam™, sounds "at least 1000% better" than when he had the other brand on his walls. One customer told us he put a match to their sample and it literally **flamed so quickly he barely could drop it fast enough to avoid catching his sleeve & arm on fire**.

Over the years, dozens of customers have recounted to us unfortunate experiences they've had with other brands and vendors. We have shared these with you to help you to avoid wasting your time and hard-earned money and, hopefully, to save you some aggravation. The few dollars that you "might" save with another brand won't seem like such a good deal if you have to put up with bad service or a product that doesn't last or perform. Remember, no one has ever been sorry that they bought the best or regretted "doing it right the first time". Consider value (what you get for what you pay) when you make your purchase decision and you will see that Auralex is truly the smartest choice.

After reading this brochure and Acoustics 101 & speaking with your dealer, we know that you will be armed with all of the information that you need to make an informed decision.

Many of our famous clients buy repeatedly from us because they know there is no better alternative out there—**period**. Check out our famous client list. These people can afford any acoustical products in the world. Learn from 'em; they're smart, successful people. **They choose ours and trust us & our "sound" advice**. When you do business with Auralex, you can take comfort in knowing that you're not only in good company, you're in good hands & are making the wisest possible product choices—regardless what your budget is.

## How & Why To Buy Acoustical Treatments

By Eric Smith, Founder & President, Auralex Acoustics Inc.

It's been said that the perfect recording environment is the great outdoors. Since it's not feasible for most of us to lug our instruments & recording gear outside, let alone find a setting quiet enough, the next best thing is to acoustically treat our rooms so that they don't mangle the sound we record and/or listen to in them.

But how do we accomplish this? Generally, by means of **absorption** and **diffusion** of the sound waves generated in the room. Two things bear mentioning before we go on. First, if you spread our foam apart a few inches (the appropriate distance varies with your room size), you will gain significant diffusion benefits off the exposed edges of the panels. Second, our Studiofoam Wedge & Pyramid panels generate copious amounts of beneficial diffusion by virtue of their geometric design features. Third, we have some world-class diffusors, our T'Fusor & MiniFusor, available at prices ANYONE—and I mean anyone—can afford. If the whole subject of diffusion is frightening, undesirable or just plain foreign to you, don't worry. Your space can sound great even if you concentrate on our acoustical foam treatments and leave diffusion for the physicists or your next studio. When you're ready, speak with your dealer about your room & what you do in it. If necessary, fill out our **Personalized Room Consultation** form; that'll help us best advise you whether diffusion is worthy of consideration in your particular situation.



**One Cool Way To Install Your Studiofoam™**

While there are some home remedies that may yield beneficial results to varying degrees, most of them can interject artifacts and inequalities into the sound that may be more detrimental than those they were intended to combat (carpeted walls are what I mainly refer to). The absorption material most commonly used in professional broadcasting and recording is **acoustic foam**. Remember what Roger Nichols said about Studiofoam? How to his (phenomenal) ears it doesn't interject sonic artifacts other (much more expensive) foams do? Imagine what Roger would have to say about the comb-filtering caused by sticking carpet on your walls.

Sound waves generated in a room radiate out to the room's boundaries, are reflected & then interact with each other, much as do ripples in a pond. Visually the effect can be mesmerizing; aurally the effect is guaranteed to be undesirable. The worst offenders are hard—and thus reflective—parallel walls; less detrimental, but still in need of attention, are ceilings, especially flat ones. Rule of thumb: if you don't have enough money to buy as much foam as you truly think you need, treat your walls first, leaving the ceiling for later. BTW, the BBC studied the effects of spreading absorbent materials around a room instead of putting all the materials on one wall and found that spreading the material around almost quadruples the resultant absorption gained! This is why we virtually always recommend cutting panels into 2'x2' sections and spreading them apart on the walls (with the exception of the front end of your room where your monitors are; see further discussion of this point on our page labeled "Control Room Dimensions").

Famous audio test guru Julian Hirsch says, "sound...is affected (often severely) by room boundary reflections." High-quality acoustic foam (which I'll just call "foam" in this discussion for the sake of brevity, although there are very **dramatic** differences in cell structure & density between acoustic foam and the thousands of other types we can make) is well suited to alleviate slap and flutter echo, the two most common problems in rooms not specifically designed for music recording & performance. In fact, foam can turn even the most cavernous warehouse or gymnasium into a suitable acoustic environment. Think about that. **Auralex Studiofoam™ lets you record good, clean, world-class sound in virtually any room regardless of shape or size.**

Foam is easy to work with, simple to trim to size and cost effective for virtually any budget. Foam (& diffusors) will improve the sound picked up by your microphones and give you a more accurate monitoring environment, thus ensuring your recordings will sound better wherever they're played. In a listening or viewing space, foam allows you to hear recorded works the way the artist intended without your room messing with the sound.\* While it is not a sound barrier technically, foam will knock down the ambient sound level in your room, making it less likely that you will disturb those nearby; studies have shown that foam (the thicker, the better) can contribute up to 10dB of extra sound isolation. Foam makes your environment more comfortable to be in, so you'll find yourself being more productive, at ease and creative. With all the time and money you've invested in sound—no matter what its type or for what purpose—why wouldn't you want to be more productive, at ease and creative? My many years of experience as a radio air personality, production director, commercial recording engineer, voice talent & performing musician proved to me long ago that there is simply **no easier or better way** to control reflected sound waves than with high-quality acoustic foams (ok, especially ours).

You can judge a foam's absorptive effectiveness by studying its **NRC**, or Noise Reduction Coefficient, an average of a foam's absorption at various center frequencies ranging from 125 Hz to 4K. There is no absolute number that indicates total absorption, so it is possible for a foam's NRC to be well over 1.00 if it is a very good absorber despite what some of our competitors keep telling people. There are various labs around the country that are certified to do acoustic testing, but it should be noted that not all labs yield accurate numbers, as proven by the blind, round-robin testing periodically performed by the governmental certifying agency. Also, some foam companies use a non-standard method of computing their products' NRCs, so it's important to know a) which lab did their testing and b) the formula they use to do their computations. **Rest assured, our ratings are dead on accurate & we perform no funny math.**

Foam is available in a variety of thicknesses; which size is correct for your particular room is determined by a variety of factors including sound pressure levels in the room, size and placement of monitors, types of sound being generated in the room, ceiling height, the materials used to construct the room surfaces, the amount of glass in the room, whether there is carpet on the floor (& over what type of pad) and other factors, not the least of which may be budget. Your dealer will ask you appropriate questions so he or she can recommend the right solutions for your specific situation.

The **thicker the foam**, the greater the amount of overall absorption, but especially toward the **low end** of the frequency spectrum. The most common thicknesses of acoustic foam are 1", 2", 3" & 4". Auralex also has a proprietary 12" thick foam, the Venus Bass Trap, that's much more effective than other bass absorbers that can cost significantly more, & a corner-loaded bass trap, the **LENRD**, that's **phenomenally effective** at a simply **incredible price**. Not only that, both the Venus & the LENRD look unbelievably cool & match the look of the Studiofoam you'll be putting on your walls (subliminal hint). They go to work immediately killing room nodes &

\*If your home theater or listening room isn't acoustically correct, I guarantee you're not hearing an accurate representation of the program material.

smoothing low frequency response abnormalities that make critical monitoring difficult or impossible. Nothing could be simpler, more **universally needed** or more foolproof. Bass trapping of some type is universally advisable in EVERY room, so I strongly advise you to use bass trapping in your room, no matter how you treat it otherwise or from what company you end up purchasing your acoustical products.

An important consideration, but not the ultimate one, when choosing a foam is its degree of flame retardancy. Some foams are tested to pass the UL-94HF1 test, which was previously the standard. We feel a more rigorous and current test is the California firecode specification #117. Both tests will indicate that a foam is designated Class B, yielding smoke density and flame spread ratings within certain guidelines. Class B is good enough to appease most inspectors except when the foam is for use in certain public buildings and locales which may require a Class A foam, most of which lack the benefits of Studiofoam. I'm sure you'll agree that flammability is never a good thing, so make sure the foam you're purchasing is at least Class B (be careful—one popular brand isn't flame retardant at all!) and always consult your local building codes before purchasing **any** foam product.

Another important quality of foam is its consistency piece to piece, box to box. While all manufacturers quote their dimensions as being  $\pm$  some fraction of an inch, some name brand foam sheets are virtually **never** consistent, while others are **guaranteed consistent** by their very design (hint: Studiofoam Wedges & Pyramids). Inconsistent sheet sizes or pattern skews lend a haphazard appearance to the finished installation which you'll have to live with for years, so now is the time to decide that you want your installation to **look** as professional as it **sounds**.

Once you've decided on a foam with the size and flammability specifications you desire and/or require, you must choose a color that complements the decor of your studio. Almost all manufacturers' standard color is a deep charcoal gray, but we have 9 other colors too. In case your foam gets damaged or needs to be trimmed to fit your room, make sure your foam is **colored at the chemical level** and not just surface painted. Be sure to ask the manufacturer how the color will wear, because all foams are subject to change due to exposure to ambient light of various types (halogen & fluorescent especially) as well as environmental factors like humidity, sweat, temperature and cigarette smoke. Our formula **greatly minimizes** these concerns. Unless you're made of money or just plain love installing foam you should make sure in advance that the foam you choose will stand up to poking fingers and the routine wear & tear of daily life. Surprisingly, this isn't a "done deal"... some brands can turn brittle & crumbly as quickly as just a couple months after installation. On the other hand, we've got Studiofoam over ten years old that's just as soft and pliable as the day it was made.

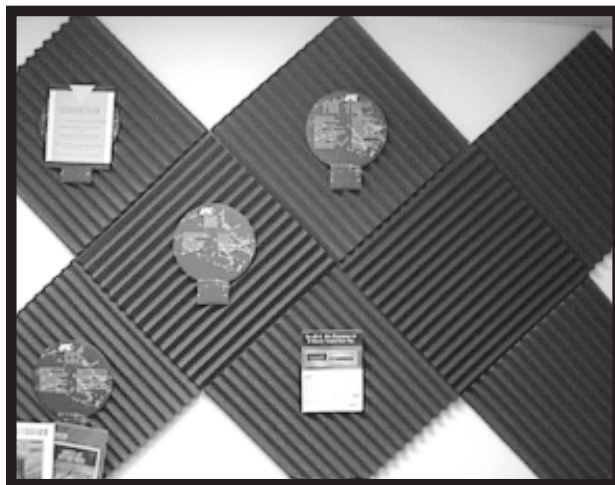
You know how the foam surrounds on a certain loudspeaker maker's woofers are renowned for disintegrating? The same thing happens to some of the foams on the market, especially with exposure to environmental extremes or repeated physical contact. There's a large nightclub in Texas whose patrons frequently find (another brand) foam in their cocktails because it's disintegrating & falling from the ceiling. So, make sure your foam will last as long as your studio—our foams last **GREAT!** By the way, foam that wears well over time is pretty much a stick it up and forget it item, but if you feel the need you can vacuum it every couple years. It'd have to get awfully dirty for the cells to clog up with dust like some people think they do!

Speaking of sticking it up, how are you going to attach your foam? We've got two great adhesives, our own **Foamtak™** & **Tube-tak™**, that we feel are truly the best solutions. No matter which adhesive you end up using, ours or another brand, prying the foam from the mounting surface with a wide-blade putty knife usually lessens damage to the surface and the foam, should you desire to remove your foam. There are other methods of applying foam; ask your dealer to suggest alternatives if necessary.

But what if you know you're going to be moving out of your current place and, say, into a new house 4 months from now? You don't want to leave your foam at the apartment because that's a) expensive and b) probably going to cost you your damage deposit. What then?

Or what if you're recording live sound for a commercial off-site and want to tame the room sound temporarily? We've got the perfect solution for you—Vel-X™ Mounting Panels. They're basically flame-retardant corrugated polypropylene panels to which you mount your foam with Tubetak, then you mount the panels to the wall with our special type of Velcro® brand hook & loop tape. They allow you to alter the acoustics of your room at will, even daily, and provide a good long-term value because you don't waste your investment in acoustical foam just because you might be relocating or remodeling.

Trimming foam to fit is not nearly as difficult as you might think, or as difficult as some other foam manufacturers try to make it. One of our competitors actually recommends using a **table saw** to cut their foam, for crying out loud. Okay, how many of you even have a table saw, let alone one that's in your studio???? One thing's for sure: you don't want to use a utility blade knife because you'll end up with a jagged, unprofessional-looking installation. The preferred method is amazingly simple, actually: use an electric carving (kitchen) knife! You'll get a smooth, clean edge that'll look just as good as we manufacturers produce with our million dollar dustless saws. Trust me—years down the road, you'll still be glad you took the time to do a clean installation- and so will your clients. Installing foam isn't nearly as hard as you might think it is, but it does require some brain work to make things work out right. Having personally installed gobs of acoustic foam, we'd make the following advice: spend a lot of time deciding where you'll put up your first panel and why. Be sure to keep a tape measure nearby so you can stay aware of how much room you have to work with during your installation. It isn't hard; just be alert and you'll be rewarded with a great-sounding **and** great-looking room!












**Another Cool Way To Install Your Studiofoam™**

So, before you go blowing mega-dollars on the latest whizbang digital reverb that you may not even use on all your projects and that may be obsolete in a year (what we call upgrade-itis....searching for that one magical piece of gear that makes your room & recordings sound better, when all you really needed was better acoustics), spend a few bucks on some high quality acoustic foam, bass traps & perhaps diffusers to smooth out the sound of your room. **Nothing** will improve your sound— either live or recorded—more.

**And isn't better sound really what we're all striving for?**

## Comparisons of Noise Reduction Coefficients Of Popular Acoustic Foams

Studiofoam Wedges		.80
Cutting Wedge		.70
Illbruck Sonex		.68
Markerfoam		.576
Azonic Pyramids		.50
<small>Based on comparisons of each company's 2" product</small>		
Studiofoam 1"		.50 (40% Superiority vs. Sonex)
Sonex 1"		.36
Studiofoam 4"		1.10 (16% Better)
Sonex 4"		.95

Auralex products' NRCs are reported to the nearest .05 as per the guidelines of the ASTM-C423-77 test performed.

## IMPORTANT NOTE:

Some foam companies utilize nonstandard methods of determining their Noise Reduction Coefficients. In many cases, these methods yield abnormally high coefficients which may make their products appear to perform better than they actually do. Please use caution when comparing foams and remember: you can take Auralex's quoted coefficients to the bank because our tests are conducted at the esteemed Riverbank Laboratories, the country's oldest & most reliable.

Further, have you noticed that one of our competitor's NRCs have (remarkably) changed lately? A product of theirs that for many years had an NRC 40% lower than our product has suddenly gotten to be just as good as ours. We called and asked 'em about it and they wouldn't give us an answer. So watch your step & be skeptical when comparing data.

## Noise Reduction Coefficients Of Various Auralex Absorbent Products

	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	NRC
1" Studiofoam	.10	.13	.30	.68	.94	1.00	.50
2" SonoMatt	.13	.27	.62	.92	1.02	1.02	.70
2" Studiofoam	.11	.30	.91	1.05	.99	1.00	.80
3" Studiofoam	.23	.49	1.06	1.04	.96	1.05	.90
4" Studiofoam	.31	.85	1.25	1.14	1.06	1.09	1.10
12" Venus Bass Trap	1.63	1.34	1.29	1.26	1.25	1.20	1.30
LENRD Bass Trap	1.24	1.28	1.45	1.39	1.27	1.31	1.35
Sunburst Males	1.08	1.23	1.14	1.07	1.05	1.08	1.10
Sunburst Females	.65	1.02	1.00	1.08	1.05	1.08	1.05

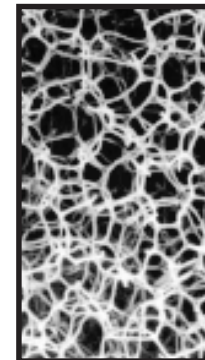
Notes: The higher the number, the more absorption. The federally mandated test is standardized to only cover frequencies from 125 Hz to 4000 Hz. No room in the US is certified to test below 125 Hz, so that's as low as the standard allows frequencies to be quoted.

## A Rainbow of Choices

Our foams are available in many colors which other companies' products are not. (On really, *really* large orders we can even custom match most any color.) Charcoal gray is our most popular because it looks sleek & hi-tech, blends well with a variety of decors and hides environmental effects the best. In addition to Charcoal Gray we also offer Red, Blue, Kelly Green, Vivid Purple, Plum, Orange, Brown, Light Gray & Beige. We had to vary the chemical formulation slightly to get the non-charcoal colors to be so solid, but rest assured the acoustic & flame retardancy properties are darn near the same as charcoal Studiofoam. Not all colors are available all the time, so call to check availability before ordering & please allow "up to" 3 weeks lead time for production in case we run short (most orders are filled within 72 hours from receipt of payment). Before ordering, be aware that lighter-colored foams can be susceptible to color changes depending on factors specific to your environment, which we obviously can't control or guarantee the effects of; all foams are really, but light colors show it more. We cannot warrant light-colored foams' color longevity for this reason. If having a light color is critical to you, you may want to lightly paint your foam with an airless sprayer & latex paint. It works!

## Cell Block Blues... (for our competitors)

Have you seen one of our competitors' ads that shows just how uneven and inconsistent their foam's edges are? This is their OWN picture in an ad they paid good money for. Within less than 2' you can plainly see their pattern gets way out of sync with itself. This just doesn't happen with Auralex Studiofoam! We couldn't have come up with a better picture ourselves and hope they keep running it. ©



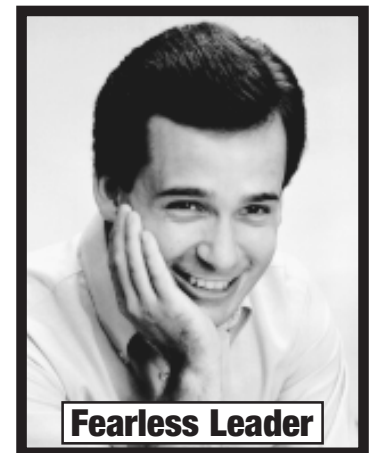
Close up view of foam's intricate cellular structure. Each cell traps a bit of sound & converts it to thermal energy, then dissipates it.

## Flammability Data For Those With A Burning Desire

Class B Retardancy. Flame Spread Index: 50. Smoke Density Index: 260. Certified to the US Military MILP26514 Class II, Grade C Specification. Passes California Firecode Specification #117 and US DOT MVSS-302. Some colors pass federal toy specification and the military spec. Charcoal foam is classified SE (self-extinguishing) and DNC (does not combust). Please note that some other companies' foams are surface sprayed with a chemical flame retardant much like Christmas trees are. While this affords a certain level of protection, it is not as beneficial as our method which makes the foam **flame retardant as a whole**, not just on its surface. We include this important benefit free of charge, so why pay another company the \$5 per sheet they want just to get surface sprayed? For reference, our charcoal gray is nearly twice as flame retardant as Sonex™ Classic\*. Also, a competitor whose products ours are slaying is spreading rumors about flame retardancy in hopes of selling more of their quite-expensive Class A foam (Class A means it passes more stringent flame spec's.) We feel these tactics are just a smoke screen (pun intended) and should not affect many users' purchasing decisions because Class B may suffice for them. The longevity of some Class A products is suspect, as most of them are colorized by surface spraying & are quite brittle. For those of you who do in fact require a Class A solution, we have available absorbent fiberglass panels & a variety of fabric coverings. See your dealer for additional details and always check your local codes before purchasing any vendor's foam products.

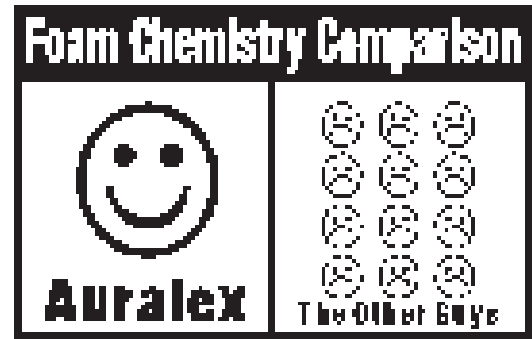
## How Did All This Stuff Come About, Anyway?

As they say, necessity is the mother of invention. Auralex was founded and is still headed by Eric Smith, a diversified entrepreneur with a degree in radio/TV. With many years of experience as a live musician, major-market radio air personality/production director/talk show host/producer, recording engineer, voice & on-camera talent, acoustic consultant, nationally-recognized nightclub jock, disc jockey trainer and more (wordy, but true...take a breath now), Eric came in contact with many bad-sounding rooms, even at big-money broadcast facilities, and virtually every acoustic foam imaginable. The problem was, he saw all the foams had major shortcomings; either they didn't work well, didn't wear well, were cut inconsistently, cost too much, weren't flame retardant enough, weren't available in enough colors or all of the above. Being a Mensa-caliber guy, he sensed a need in the marketplace, so he started learning as much as he could and set off to develop the "Holy Grail of Foam." Many years & 20 hour days later, now you can benefit from all his experience & hard work at a price you can **afford**.



## The Secret Of Life

Quite often customers ask us why our foams have so many **important advantages** over other brands. The answer's pretty simple, really: we use a radically different chemical formula than they do. This is why our foams are more flame retardant, available in more colors, absorb up to 60% better, are more consistently cut, are priced far less, stay soft to the touch & don't crumble with exposure to environmental extremes like other brands have been known to, a phenomenon known as **oxidation**. By the way, other brands get crumbly & break down not because of a fungus like some people think, simply because their chemistry facilitates this susceptibility to oxidation. While we're on the subject of old wives' tales, it's not true that the apparent stiffness of a piece of foam has anything to do with that foam's absorbency. For example, our foams feel much silkier than other brands, yet exhibit the industry's best absorption. Touché.



## What's It All About?

To sum it up, it's all about **value**, the definition of which is "what you get for what you pay". By now it should be apparent to you that price is only **part** of the story. The few cents that you "saved" by buying that inferior brand of acoustic foam won't seem like a bargain when it starts to crumble and fall off your walls. Paying **more** for acoustic foam that doesn't perform **as well as** Auralex is obviously not a good value either. So, we suggest considering the big picture when making your foam-buying decision. Look at absorption, durability, consistency of cut, flame retardancy, color availability and longevity. Auralex delivers in **every** category! As a "revolutionary" acoustician once said, "Don't be penny wise and **sound** foolish". Compare... and then choose Auralex!

\*Natural Sonex has a flame spread index of 95, while our standard charcoal foam yields an index of 50. Natural Sonex has a smoke density index of 340 while our standard charcoal yields an index of 260. Flammability testing performed on our products by Commercial Testing Laboratory, Inc. Sonex ratings taken from their product literature.

# No Matter What Your Sound Problem Or Budget, Auralex Can Provide The Solutions You Need – On Time, With The Best Spec's & At The Industry's Best Prices. Period. End Of Story.

## The Basics

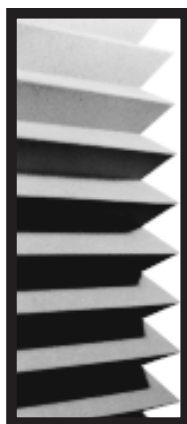
The first thing to do is decide what type of noise problem you have. Are you hearing standing waves & flutter echo (a ringing, repeating sound when you clap your hands)? Are you hearing muddy low frequency sound? Is sound leaking in or out of the room? Is the reverb time of your room simply too long? We have products designed to solve each of these types of problems.

Next, decide which surfaces you think need treatment and measure them in feet, rounding fractions up. Multiply width times height to get the square footage of each surface. Decide how much physical space you can allocate to your treatment. For instance, if you made a vocal booth out of a bedroom closet, 4" foam may be too thick.

Then, come up with an accurate estimate of the amount of money you have to work with to solve your acoustical problems. **Don't Panic!** We & your dealer **promise** not to oversell you, we just want to help you get the best solutions your budget allows. These information pages & your dealer have guidelines that can help you estimate what you need & what it will cost you. Auralex saves you tons of money!

## Eenie, Meenie

We manufacture all our foams from roughly the same stock, but we offer three different cuts: Studiofoam Wedges, Studiofoam Pyramids and SonoMatt. Why? Some people prefer the look of one cut over the other, some want to save the most money, some want to match foam they may already have, some want specific sheet dimensions. The best performance to price ratio will be achieved with Studiofoam Wedges, so they're our most popular seller.

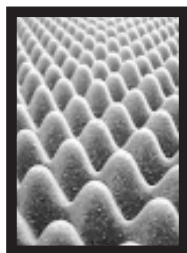
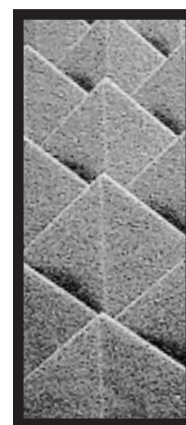


## ★ STUDIOFOAM™ ★ SOUND ABSORBENT WEDGES

Our most popular style of acoustical foam. Each sheet is cut the same for clean-looking installations. Wedges are up to 60% more effective than other name-brand foams that can cost many times their price! The foam stock passes California firecode & is far more flame retardant than other popular brands. Sold in 1", 2", 3" 4" & 12" thicknesses in 2'x4' sheets. Our long-lasting formulation gives years of service; doesn't crumble like other brands can. Truly the best performer on the market regardless of price! Really!

## ▲ STUDIOFOAM™ ▲ PYRAMIDS

Just as long-lasting as Studiofoam Wedges, but useful where a seamless installation, a bit of extra diffusion or just a really cool look are desired. Sold in 2" & 4" thicknesses in 2'x4' panels in all our colors. Each pyramid is 2" or 4" wide, so cuts may be done every 1/2 foot, 1 foot, 2 feet, etc. with great ease & results. Pyramids pass through our million dollar saw twice, so they do cost a bit more than Wedges, but most people who see 'em think they're worth the extra dough. Top notch looks & sound!



## SonoMatt™ Convoluted Acoustic Foam

Sonomatt Convoluted Acoustical Foam - With an impressive overall NRC rating of .70, you'd never know that this was our **least** expensive product. Sonomatt outperforms some companies' "premium" brands! Don't compromise your need for quality acoustical control just because you have a modest budget. Sonomatt is 2" thick and available in 2'x4' or 4'x8' sheets. Charcoal gray only.



Welcome To The World According To.....



In *our* world, rooms mess with our sound. Corners cause bass bumps in our rooms' frequency response. Critical monitoring is difficult in all but the most costly rooms. Extensive and expensive bass trapping abounds.

*Not in LENRD's world.*

There, rooms actually sound GOOD and look COOL. Corners don't cause the headaches they once did. Checkbook balances contain numbers much larger than zero. Clients smile. *Life is good in LENRD's world.*

A fairy tale? No way. **LENRD Rules!**

**LENRD** (as in LEONARD) stands for **Low End Node Reduction Device**.

As you probably know, a resonance bump in a room's frequency response is called a room NODE.\* Get it?

Bass nodes are the most prominent and most difficult to control in any room. Bass traps substantial enough to control them have always been expensive to buy or intricate & time-consuming to build, but not any more! LENRD is extremely effective at smoothing out low frequency room nodes at a price that anybody can afford (and I do mean ANYbody).

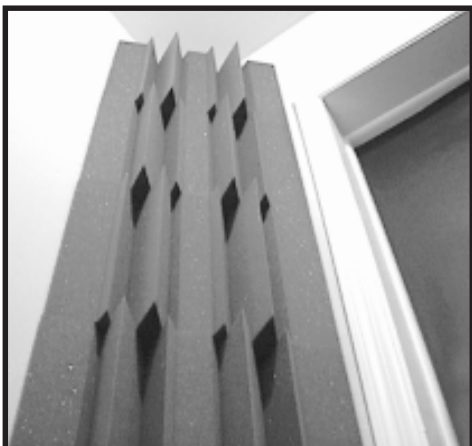
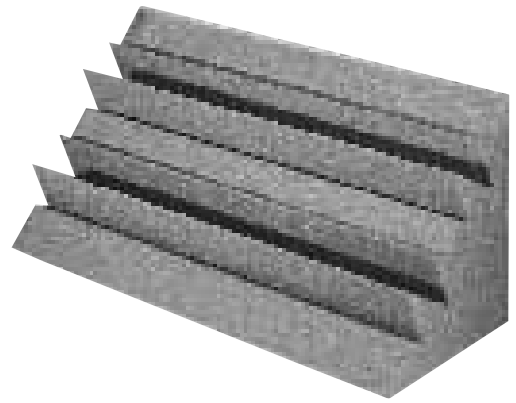
LENRD's triangular shape makes quick work of trapping your bass buildup by putting a big chunk of our specialized acoustic foam right where you need it: in your corners. Each flat side is 12" long and each LENRD is 24" high, making its dimensions work well with the rest of our acoustical foam products.

A carton contains (8) LENRDs, enough to trap 16 lineal feet. You've probably got 8' ceilings, so one box would be enough to trap both your room's rear corners floor to ceiling. Or, maybe you could trap all four corners of your room from the ceiling down 4' (about chair rail height). **Two boxes would give you enough LENRDs to trap all four corners floor to ceiling for very low dough.** Some of you might want to trap both rear corners and the rear wall-to-ceiling juncture all across the upper rear edge of your room. (See, no wonder he's so popular— LENRD's really versatile!) And at our prices, LENRD will definitely not

break your bank, no matter how small it is! He's great looking, cheap, easy & great looking..... think of him as the Pamela Anderson of the acoustics world.

World famous acoustician Chris Pelonis (responsible for many of LA's top rooms & beyond) is using tons of LENRDs, including at Christopher Cross's new studios. Major magazines have raved about LENRDs.

For once, we can all afford the amount of bass trapping we really need !!! So, stop letting the tail (room modes & nodes) wag the dog (you & your investment). Grab some LENRDs and tell your low end problems to take a hike!



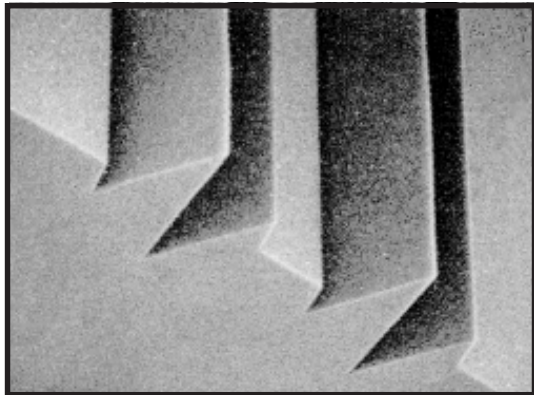
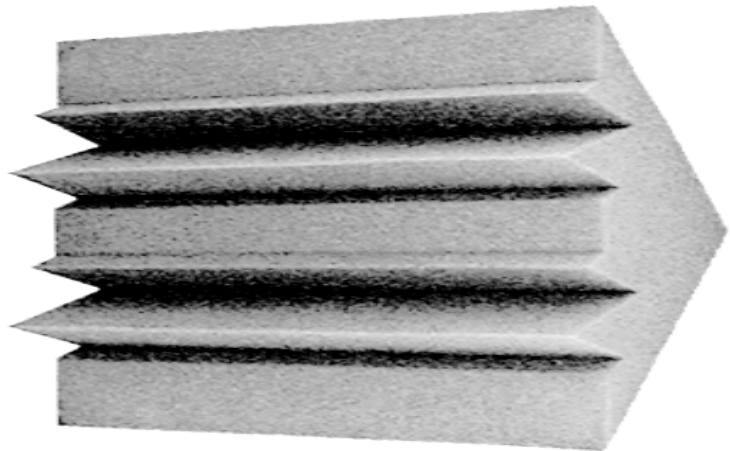
**LENRDs installed at our new studios.**

\*Okay, officially a bump is a MODE, not a NODE, but LEMRD would've been a dumb name.

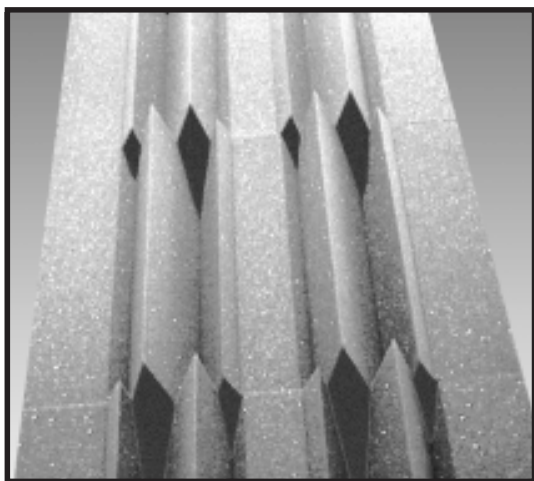
## LENRD Absorption Info

LENRD was tested by the esteemed Riverbank Acoustical Laboratories, the country's oldest and most reliable testing facility. To assist you in determining that LENRD will meet your needs, here are the absorption coefficients at the mandated center frequencies.

125 Hz	1.24 NRC
250 Hz	1.28 NRC
500 Hz	1.45 NRC
1KHz	1.39 NRC
2 KHz	1.27 NRC
4 KHz	1.31 NRC
<b>Total Rating</b>	<b>1.35 NRC</b>



Close up detail of LENRD's specialized anechoic wedge surface contour. The variance in wedge height and depth helps improve LENRD's efficiency & looks cool!



LENRDs can be stacked "all wedges lined up" or, for some asymmetrical visual spice, rotated 180 degrees from each other as shown. Both orientations will yield virtually identical sound absorption, so make your choice based on aesthetics, not acoustics.

At 125 Hz, LENRD is significantly more absorbent than 2" Studiofoam, which has a 125 Hz NRC of .11, and 4" Studiofoam, which has a 125 Hz NRC of .31. (And Studiofoam is way more absorbent than **other** brands!) Due to LENRD's bass absorption efficiency, many users can achieve premium results by utilizing thinner Studiofoam for the bulk of their wall treatment, i.e. they're not depending on the Studiofoam'd walls to add a lot of low frequency absorption to the overall installation. This can save users **tons** of money depending on the size of the area they're treating. It's also true that, for a device intended for bass absorption, LENRD exhibits quite admirable & linear broadband absorption across the *entire* frequency spectrum.

Due to LENRD's shape, he can also be applied to a flat wall in a vertical row to help visually separate an area; for instance in the case of a large room that's used as a control room at one end & a performance area at the other. Two vertical rows of LENRDs back to back (flat side to flat side) look visually striking and yield prodigious absorption even without being corner-loaded.

**Pound for pound, LENRD gives you world-class absorption at unmatched prices.** Since virtually EVERY room benefits from low end node smoothing to one degree or another in a variety of locations (trihedral corners, wall ceiling junctures, under balconies, etc.), you should give really serious consideration to including LENRDs in your installation. In all our years of experience we've honestly never heard a room that was over-absorbed in the bass frequencies, so you run no risk of overtreating with LENRDs. (Recent studios we've been in that were designed by the "million dollar guys" featured significant bass trapping **all over** the place....).

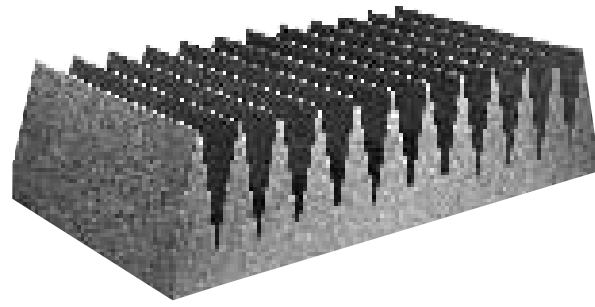
**Put LENRD to work at your facility today!**

**LENRD™**  
B A S S • T R A P S

# VENUS™



## BASS TRAPS



Low frequency sound waves are so long—and thus so strong—they are the toughest to control. This is true no matter whether you're attempting to block their transmission to a neighboring space or trying to absorb them to clean up the low frequency response within a room. Controlling low frequency sound is harder than controlling mid or high frequency sound and generally requires more effort and expense. Luckily, Auralex can help minimize these expenditures.

Which rooms need low frequency control? Virtually all rooms; some just need it to a greater degree than others. Why is this? Because, due to the physics involved in the way sound behaves in all rooms, there is no way to build a room that doesn't exhibit inherent low frequency anomalies. The way sound is reflected within room boundaries can be quantified and then categorized as either axial, tangential or oblique modes, or patterns of reflection. These types of modes occur regardless of room size or shape, but can definitely be exacerbated by certain types of room geometry.

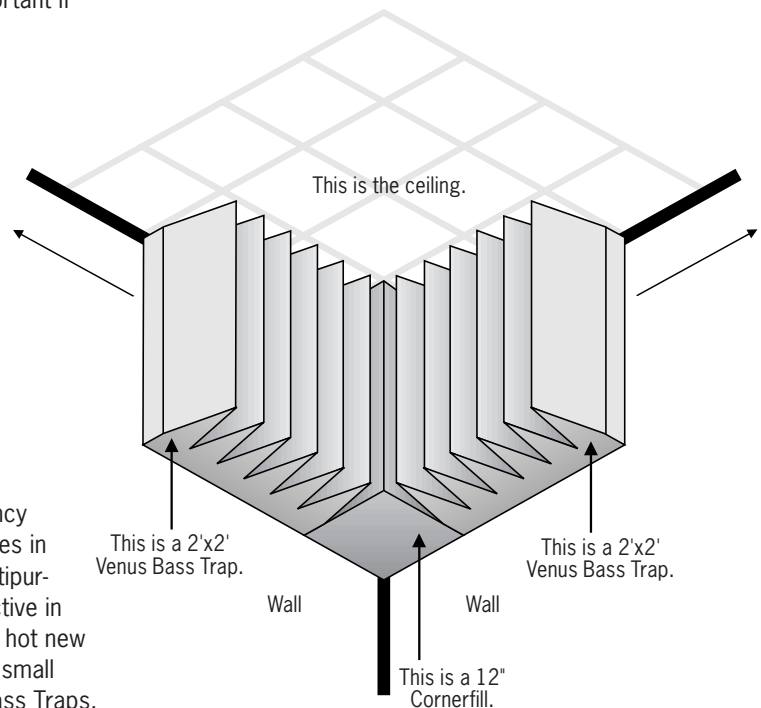
Most rooms are designed with 90° corners where two walls come together and meet a flat ceiling. This is technically called a trihedral corner. Based on the physics involved, trihedral corners cause bass frequencies to be boosted by 9dB—meaning they're **three times** as loud as they should be. Thus, it's easy to understand why low frequency trapping (absorption) is supremely important if your goal is to attain the most accurate sound possible—whether you're performing, recording or monitoring within a given space.

In the past, useful bass trapping required lots of money, lots of cubic space and lots of technical expertise. This is what spurred Auralex engineers to develop the **Venus Bass Trap**.

The Venus Bass Trap achieves a prodigious level of low frequency absorption at your room boundaries—where problems begin—at a price that allows it to fit into virtually all budgets. The Venus ships in a 2'x4'x12" size, but is often cut in half to 2'x2', then paired with a 12" Auralex CornerFill. The diagram to the right shows the proper implementation of this combination.

While the Venus Bass Trap can provide serious low frequency **and** broad bandwidth absorption in all rooms, it really shines in larger rooms like gymnasiums, houses of worship and multipurpose rooms. That's not to say the Venus isn't just as effective in smaller rooms, though. For example, one of the country's hot new up-and-coming ad agencies & post houses has a relatively small studio whose entire 10' tall ceiling is treated with Venus Bass Traps. Using them in this way allowed the room's low frequencies to be smoothed out without taking too big a bite out of the room's 10'x14' size. The room now exhibits a sound that is surprisingly spacious, yet controlled; certainly the room's sound belies its small size.

Listed below are the absorption coefficients of the Venus Bass Trap to help you see just how phenomenally effective—and cost effective—serious low frequency control can be. See your dealer for some Venus Bass Traps today!

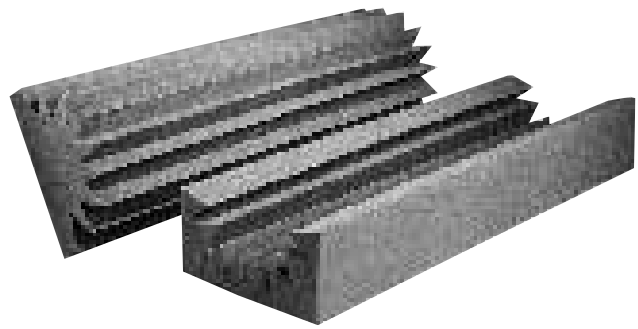


You're standing in the room and looking up at the corner where the two walls meet the ceiling.

We recommend you start with this configuration in each corner of your room. If problems persist, which they probably won't, repeat the process just below the initial pieces. You can also add more Venus Bass Traps horizontally from the corner at the wall/ceiling junctures (indicated by angled arrows above).

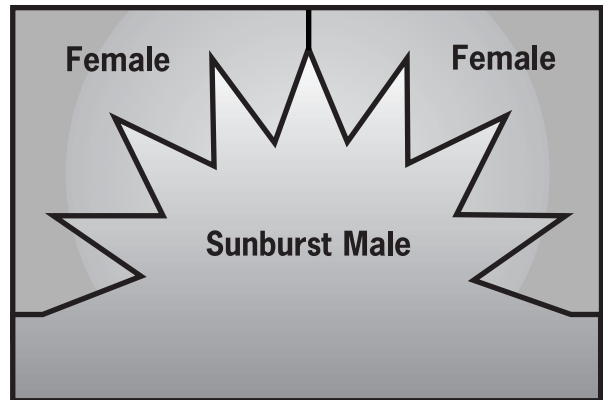
12" Venus Bass Trap	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	NRC
	*1.63	1.34	1.29	1.26	1.25	1.20	1.30

\* Compare the LF absorption of the Venus to another brand whose bass traps achieve an NRC of only .84 at 125Hz! In addition, our traps are a better value, costing 30% Less for 30% More coverage. Even the testing engineers at the lab were blown away by the low end absorption of the Venus.



# “It’s Not Just Aesthetic! It’s Not Just Acoustic! It’s Both!”

The new **Auralex Sunburst™** is one of the most useful multipurpose acoustical control tools we’ve ever come up with. For example, the Sunburst can: **(1)** add more low-end absorption to a room whose walls are treated with thinner foam like 1” or 2”.....**(2)** fill the 1’ gap that might remain after treating with Studiofoam™ if your walls are 9’ high instead of 8’.....**(3)** give a visual “column” effect between adjacent, vertical Studiofoam panels.....**(4)** serve as movable traps (when glued back to back) to build an accurate, temporary monitoring or recording environment in **any** room (we **dare** you to compare this to that “other” company’s movable monitoring & recording environment’s price & performance!).....**(5)** be mounted to your choice of substrate & hung horizontally as broadband absorbent “clouds” in restaurants, gymnasiums, etc.....**(6)** serve as movable “gobos” around a drum kit while recording.....**(7)** be mounted to hinged panels made of plywood, for instance, that could be rotated on your studio’s walls to vary the room’s acoustics from absorptive to reflective.....**(8)** serve like a more absorbent & aesthetic CornerFill™ if you’re not treating with acoustic foam both walls that form a corner.....**(9)** function as “mini-LENRDs” (Sunburst females) if cut in two (see above).....**(10)** be alternated male & female for a very striking “innie/outie” look.....**(11)** be glued back to back with one of the two painted for extra diffusion (talk about variable acoustics!). The possibilities are literally endless and our aggressive pricing on the Sunburst makes it easy for you to add some to your facility! Don’t forget, too, that Sunbursts are available in all the same cool colors as Studiofoam, so you can mix & match for an even more radical look. **These are fantastic!**



The Sunburst Male & Female arrive to you nested as diagrammed above right with the Female in one piece which can easily be cut in two, as denoted by the short dividing line in the middle at the top of the diagram. The reason we mention this is that many customers cut their Females in half & use the halves as “mini LENRDs” or glue them back to back to approximate the look of Sunburst Males.

## Sound Absorption Data For The Auralex Sunburst

“Male” Sunburst NRCs:		“Female” Sunburst NRCs:	
125 Hz	1.08	125 Hz	0.65
250 Hz	1.23	250 Hz	1.02
500 Hz	1.14	500 Hz	1.00
1KHz	1.07	1KHz	1.08
2 KHz	1.05	2 KHz	1.05
4 KHz	1.08	4 KHz	1.08

Look closely at the absorption data for the Sunburst. The Sunburst provides **extended bass** absorption and is **truly** broad bandwidth in its reflection control, unlike other products that fail to deliver on similar claims. The Sunburst is **four times more absorptive** at 100Hz and **five times more effective** at 125Hz than a competing product whose low-frequency performance falls off rapidly below 400Hz! The Sunburst also costs **4 times less** and is **way more versatile**.

# T'Fusor™

I'm gonna talk about diffusion in a minute but first I wanted to make you aware that we recently spent some big-time money and had a very well respected man in the audio industry— a man who was formerly near the top of one of the industry's most revered companies for many years and who sits on the Board of Directors of the AES (Audio Engineering Society), our industry's governing body— devise very intricate, time-consuming and computer-intensive custom testing for us to see just how well our T'Fusors and MiniFusors perform.

After a couple weeks of having custom tooling manufactured and installed, setting up the Crown TEF-20 analyzer and double checking his setup and methodology down to tiny fractions of an inch, our man went to work. He ran a wide battery of hundreds of measurements in the specially-set up anechoic chamber we constructed just for these tests.

When the smoke cleared many long days later, he scratched his head and examined the mountains of data in front of him, trying to make sense of what the computer was saying. He was perplexed.

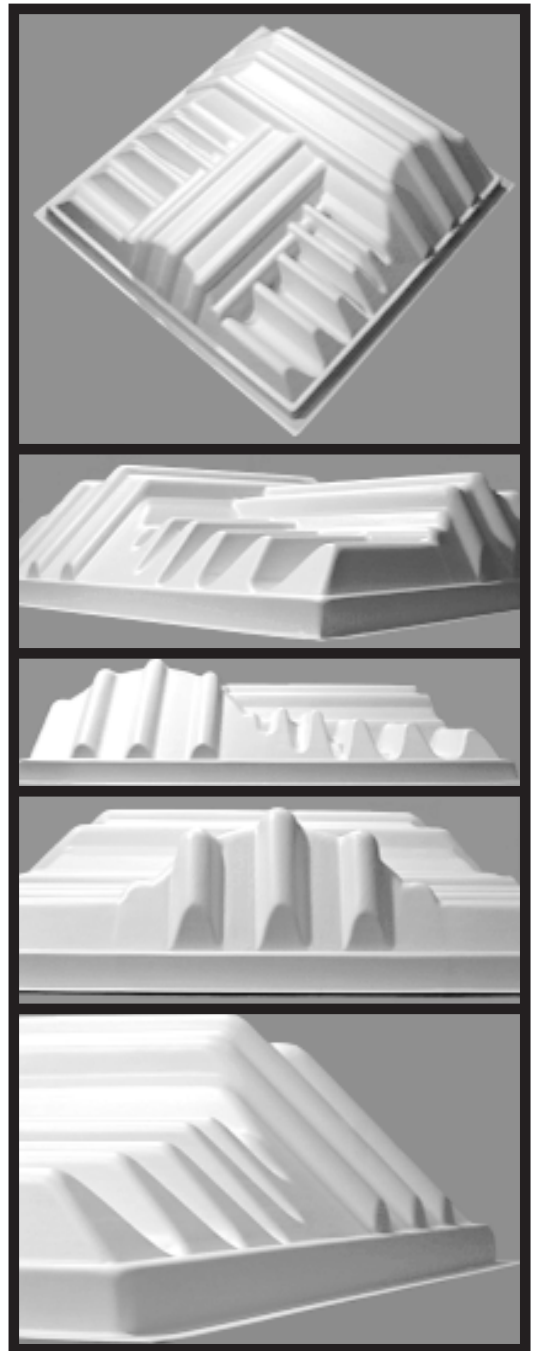
These T'Fusors couldn't possibly be performing this well, could they? he thought to himself. There was only one way to find out. Being a very fastidious engineer, he took a deep breath *and began the whole testing process over again* to double check the data the analyzer was presenting him, which he frankly doubted could be valid. They were simply too good, or so he thought.

After running the whole battery of tests again and reanalyzing the reams of printouts, he smiled, nodded his head and sent a fax to me that said, simply, "I've run the tests twice to verify the computer's measurements and am excited by the data I've gathered. It appears you have a real winner on your hands."

This was the understatement of the year from a very analytical man. *The T'Fusor performed better than any diffusor he'd ever seen.* So well that we're applying for patents on it.

Proper control of room acoustics typically requires three distinct types of sound management: absorption, transmission control and diffusion. Absorption of sound waves bouncing around inside a room is easily accomplished by the installation of acoustical foam. Transmission control (keeping inside sound in and outside sound out) is accomplished by means of dead air and dense mass like multiple layers of drywall or specialized sound barrier materials like our SheetBlok™. Diffusion is accomplished by alleviating large flat, reflective room surfaces and instead introducing surfaces of varying shapes, sizes and angles.

The consensus among professional acousticians and studio designers is that large flat, reflective room surfaces have no place in serious recording, performing or listening environments. The proper balance of diffusive & absorptive surfaces, however, varies with room size & function. Your dealer or Auralex representative will be glad to assist you in choosing the proper quantity of diffusors & can advise you as to the best location for the devices in your particular space.



#### **Absolutely Unsolicited & Unedited Customer Comment:**

**Mike M. called us to say this about T'Fusors: "I spend 1/2 the time I used to fussing with sounds. I never had any idea how much my room was messing things up! Having been familiar with other brands of diffusors (& their prices), I never would have guessed the T'Fusors could provide such a high degree of performance for such a low price. They're great!"**

## What Does Diffusion Do For Me?

Diffusion keeps sound waves from grouping so there are no hot spots or nulls in a room. In fact, diffusion greatly widens the "sweet spot" and lends a strong, 3D sense of openness to a room, making it easier to hear "into" a mix. Diffusion obliterates standing waves and flutter echoes without simply removing acoustic energy from the space or greatly changing the frequency content of the sound. Some famous engineers and recording artists like Gino Vannelli & Michael Jackson like to record in strongly diffusive environments because of the openness they hear. Diffusion can make a small space seem large and a large space seem larger. Diffusion in a control room imparts the all-important "Initial Time Delay (ITD)" that keeps early reflections off room boundaries from getting to your ears too soon & smearing the direct sound you hear from your monitors. In conjunction with absorption, diffusion can very effectively turn virtually any space into one that is appropriate and useful for the purpose of recording or monitoring sound with a high degree of accuracy. **Diffusion is your friend.**

## How Does Diffusion Work?

In a couple of ways. Most obviously, the irregular surface contours and varying angles of the diffuser each reflect sound waves in different directions. Less obvious but just as important, the varying heights and angles diffusers contain work by slowing down incoming sound waves that pass through the diffuser & strike the mounting surface at different times. Thus, sound is spread out not only in a physical (reflected) sense, but also in the time domain. Whereas the waves that get through the diffuser's material are mainly low frequency waves, introducing a piece of relatively dense sound absorbent material behind a diffuser can improve time domain spread, diffusion and, to some degree, even low end absorption.

## Who Needs Diffusion?

Virtually every space benefits from the introduction of diffusion; only the quantity & placement varies. Diffusion has been successfully implemented in studios, control rooms, concert halls, gymnasiums, meeting rooms, sanctuaries, natatoriums and more.

## How Does A Good Diffuser Perform?

A good diffuser spreads sound evenly over the 180 degree hemisphere around the front of it. On the other hand, a good diffuser will splay the sound that hits it from any angle out into a wide arc in front of it (like ours does, if I might be so bold as to point out the visually obvious). The smoother the arc the better, because deviations from a smooth arc indicate volume changes. The object of diffusion is to redistribute sound evenly throughout a space, not to absorb any of it, so you want a diffuser whose arcs at the various frequencies **(a)** are very smooth and **(b)** all show basically the same shape, which indicates the unit is providing uniform diffusion at all frequencies (like ours does from at least 177 Hz to over 11,233 Hz, way above the test's cutoff frequency of 8000 Hz). Other diffusers on the market generate arcs that have too much deviation from smooth and arcs that aren't semicircles, they're more like the teardrop lobes the flat panel generates. This means the other companies' diffusers aren't redistributing sound energy evenly in a 180 degree hemisphere. The T'Fuser polar plots look fantastic, eh?

## In Which Rooms & Which Placement Is Diffusion Appropriate?

First, let's talk about control rooms. Virtually all professional engineers and studio designers will tell you that the front of the room (walls & ceiling) should be absorptive as far back as the engineer. The ceiling from the engineer back can contain a mix of diffusion and absorption, but most top designers feel the rear wall should be diffused, especially in larger rooms. The side walls from the engineer's position on back can be alternately absorptive and diffusive. **Treat your room this way and I defy ANYONE to say your room sounds bad. Period.**

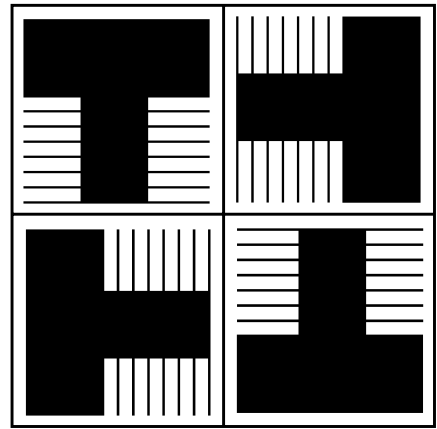
Second, studios. Personal taste, room size and room function determine how dry (absorptive) or wet (diffusive) a studio should be. Many famous rooms are absorptive in some spots and diffusive in other spots. Generalizations? Rock studios should be more absorptive than classical or jazz studios, and rarely should be totally "dead". The larger the room &/or the higher the ceiling (churches & gymnasiums, are you listening?), the more diffusion is appropriate to keep the room from sounding like, well, a church or a gymnasium. Personally, I prefer dry rooms, but if I've gotta be in a wet room, I want the liveliness controlled by diffusion to yield a more pleasing & smoother overall room sound & reverb tail (decay). Some famous engineers these days are getting good vocal sounds by placing the talent (one glove optional) in a close, diffusive environment. Broadcast rooms should be both damped and diffused so too much "room sound" doesn't get into the microphones & go out over the air. Nothing sounds cheesier than too much room getting into an open mic. (Remember, I was a major market radio air personality & production guy for many years, so I have some personal experience with this.)

Third, isolation & voiceover booths. Personal taste & room size come into play here, too. As a voice talent, I prefer totally absorptive walls and diffusive ceilings. As a drummer I prefer a combination of diffusion and absorption on all room surfaces. If I was recording sax players, violinists or solo sopranos, I'd want some combination of the two; probably more diffusive than absorptive. It's truly your call, but bear in mind that once bad (non-diffused) "room sound" is captured on tape, disk, etc., you can never get rid of it. As one famous client of ours recently said to me, "There's no knob for it." Many famous iso booths are quite dry; others are diffusive as well. It's your call, Grasshopper.

## How Do You Recommend I Install T'Fusors & In What Quantities?

For any brand of diffusors to work properly, the pattern must not repeat sideways or vertically in close proximity to itself, hence the recommended orientation shown.

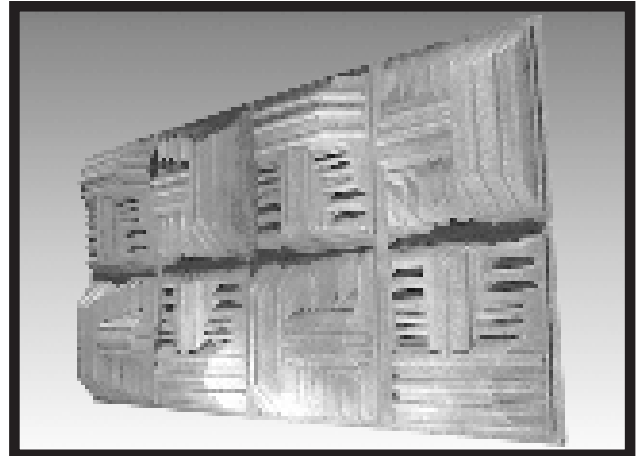
In most small control rooms we recommend a group of 4 T'Fusors installed as pictured on the rear wall. Larger control rooms get 4 additional T'Fusors on the rear wall and, optionally, 4 above the mix position (additional units placed on the ceiling from the mix position back are welcome, if budget and desire allow). Discretionary placement: side walls behind the mix position, alternating with acoustic foam (normally this would be 2"). We feel groups of less than 4 T'Fusors are not audibly worthwhile, hence the minimum order of 4. Over 4, you can buy as many as you want, even odd numbers. Dealer policies may vary.



## Alright, I'm Ready Homer. Tell Me About T'Fusors!

We developed T'Fusors not because the other diffusors on the market don't work well; some certainly do to one degree or another. Rather we felt that other manufacturers were disregarding certain real-world concerns. Other brands are much more expensive, can be heavy & expensive to ship, can be too heavy to mount with adhesive, are sized inappropriately (15.5" for some; 2'x4' heavy wood &/or metal for others), are very difficult for even professional painters to evenly coat, are very fragile or dangerous in real-world use &/or feature poor quality workmanship & low perceived value.

T'Fusors, on the other hand, are 23.75" square which allows them to drop perfectly into a suspended ceiling grid. They're light weight and nest into each other, so per-unit and total shipping costs are drastically lower than other brands. They're made of a really sturdy, high-impact thermoplastic resin that stands up much better to normal wear and tear than competing brands. They are MUCH more easily spray painted than other brands. They are lightweight enough to mount easily to walls & ceilings using construction adhesive or mechanical fasteners of your choice (2-sided tape, screws, staples, nails, push or T-pins, etc.). They are sized to facilitate alternating them with our acoustic foam panels for better overall room sound. They have a 1" ledge in their back that facilitates insertion of SheetBlok, flat-cut acoustic foam or fiberglass board for greater versatility in a variety of situations. They're available in paintable white. Acoustician Bob Suffolk is using them in his rooms and absolutely raves about them. He says they're imparting a very noticeable spaciousness to the sound he's achieving. I've been in some of Bob's rooms and spoken with the engineers, who confirm Bob's feelings. One fellow told me the control room he works in (which Bob designed with nothing but Auralex products and in which the entire ceiling treated with T'Fusors) is the best room he's ever worked in & allows him to hear much greater detail in his mixes. I heard the room & must say I agree.



**T'Fusor Array Painted With Granite-Look Spray**

Last, but not least, T'Fusors are priced **WAY BELOW** competing products. So low that some facilities could literally save **hundreds** or even **thousands** of dollars! For example, I was in a famous room recently and the engineer told me the diffusors on their wall cost them **over \$3000** back in **1985**. He about dropped his teeth when I showed him the T'Fusor polar plots and told him he could do a T'Fusor array just as large for less than **\$500** (in TODAY's dollars, no less). So when I say "way below" competing products, I'm not just blowing smoke, I'm dead serious. How about **90% cheaper** and they **test better!**

Some people have advised us that we're not charging enough for them, but you know how we do business: we want to absolutely OWN the diffusor market and feel that making them affordable will get them into the hands of quite a few more people. Since childhood I've looked up to Henry Ford, who said he'd rather sell a million cars for a dollar apiece than one car for a million dollars. *Ditto*. We get multiple referrals from our satisfied customers, so it makes sense to try and gain more satisfied customers, doesn't it? (Duh.)

**So now you've got every bit of information you need to make the smart choice for better sound: T'Fusors by Auralex. Make it so!**

**Important Note:** The accompanying artwork, text and product design features of the T'Fusor are all © Copyright 1996, 1997 Auralex Acoustics, Inc. Patents are being applied for and the product's design will be rigorously defended as proprietary.

# MiniFusor™

Introducing the T'Fusor's spunky little brother: our hot new **MiniFusor™**! At just 12"x12"x5", it's the perfect size for project studios. And it's available at pricing that's got those "other" diffusor guys slapping their forehead and saying "Doh! Why didn't we think of that?!".

It's been acknowledged for some time that virtually all rooms in which sound control is critical need diffusion. (Diffusion helps offset the detrimental sonic effects of hard, reflective, often parallel, wall & ceiling surfaces & effectively gives a room's sound more "spaciousness" while offering a larger "sweet spot".) **The problem's always been the cost!** Previously we'd have to spend up to **hundreds of dollars per square foot** for good diffusion.....but not any more. **Enter MiniFusors!** They not only **perform great**, they're just what those of us who are "budgetarily-challenged" have been needing!

MiniFusors are available 12 to a box, enough to diffuse a 3'x4' area. They nest well for safe and secure shipping by economical UPS ground and are lightweight enough that you folks in a big rush can even afford to have them shipped next day air without breaking your piggybank.

Our proprietary molding process makes MiniFusors sturdy yet lightweight (no styrofoam here), so they'll stand up in virtually any environment. Another important benefit.... they're light enough that you can mount 'em with a thin bead of Tubetak™ Liquid Adhesive (for permanent installation), screws, nails, two-sided tape, Velcro™ or even push-pins (for removability). Compare that to some other diffusors out there that virtually require you to reinforce your structure to support their herniating weight! The flat flange around the edge of each MiniFusor is 1/2" wide, so if you mount yours next to each other as shown in a couple of the photos, you've got a 1" space that can optionally be covered with a piece of wood trim, a strip of acoustic foam.....whatever!

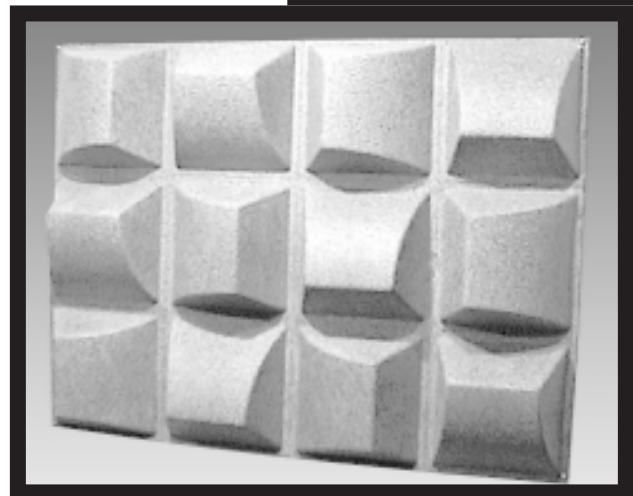
MiniFusors' **air-cavity-backed design** lends itself to an important modification, too (see third photo from the top). Fill the rear cavity with insulation, acoustic foam or expanding spray foam sealant (available at any hardware store) and the unit will yield improved diffusion **and** bass trapping (the MiniFusors must be sealed to the mounting surface with adhesive or silicone caulk for this feature to function properly).

The specialized shape we developed for MiniFusors not only makes them super-effective acoustically, it lends itself to a variety of aesthetically-interesting installation patterns. Units can all face one direction, opposing directions or in a random pattern of your choosing.

MiniFusors' white high-impact thermoplastic resin construction and innovative shape allow them to be very easily painted to match any decor. Experience has shown that other companies' diffusors are difficult for even professional painters to evenly coat, but not MiniFusors! You can spray 'em, brush 'em....even splatter paint 'em in your choice of colors and textures. A couple of our favorites are that hot new "granite" look (available in a spray can at your hardware store; shown lower right at our studios) and gloss black (open your mouth and say "ooooooooh"). Let your imagination run wild!

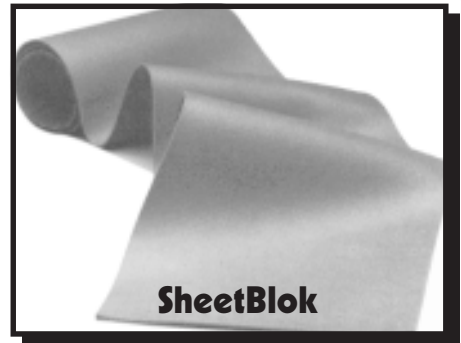
**In short, MiniFusors have every benefit you should look for in a diffusor: performance, appearance, paintability, shipability, portability and affordability!**

**Your room needs 'em. Your sound deserves 'em. Your budget can afford 'em. Snag some MiniFusors today!**





# SheetBlok™ Professional Sound Barrier



As noted elsewhere in this booklet, mass and trapped air are the two components that stop the transmission of sound. In most instances, broadcast and recording facilities control the transmission of sound from one space to another with appropriate acoustical construction techniques. Typically this means constructing multiple walls with air space between them and covering the outside face of each wall with multiple layers of dense building material such as drywall, particle board, etc. In many instances though this is not feasible, say in the case of a recordist who lives in a rented home or apartment. In this case, the dweller might have neither the inclination nor the right to start tearing out and/or adding construction to the environment. Or what about the studio that constructs its walls (or ceiling or floor...) only to find that they are not as effective at sound isolation as they had planned? **It is to serve these needs that Auralex now offers new & improved SheetBlok™ Professional Sound Barrier.**

SheetBlok is a non-lead loaded, non-reinforced, dense, limp-mass vinyl material that contains no asbestos, won't rot, shrink or cause metal corrosion, is easily formed and kicks the poop out of other barriers on the market, despite some competing dealers' statements that theirs are "the best anywhere". Bull. SheetBlok is safe and nontoxic & may be mounted with strong construction adhesives (trowel-applied), plastic-cap nails or screws with metal grommets. In a pinch, it may also be mounted with staples, but too many holes in its surface can lessen its effectiveness & it can pull thru the staples unless other materials are layered over it (like more drywall or flooring). Whatever fastener you might use, it's not a bad idea to rub a dab of silicone caulk over each penetration. If you're applying SheetBlok as your last (finish) layer, a strip of moulding at each vertical seam and across the top & bottom edge of each piece is recommended not only to hide the seams, but also to better support the SheetBlok in case it proves too heavy for your adhesive.

SheetBlok is extremely easy to work with and may be trimmed with scissors, shears or blade knives. It is resistant to water, oils, weak acids & alkalies, gasoline and fungi. It offers excellent weather resistance & works well with moderately severe temperatures and environments.

The most common uses for SheetBlok include initial or retrofit construction of walls, floors, ceilings & doors. It works well for pipe and duct noise control, machinery covers & more. It may be rolled out on a floor before installing carpeting and pad for greatly improved sound isolation of footsteps. It may be cut into small strips & used as gaskets when installing control room window glass. SheetBlok is thin enough to not deduct large amounts from your physical space while still affording sound reduction specs which are superior to lead, the most commonly used product which yields an STC of only about 21, or other barriers on the market. And at a price that fits most any budget. **It is simply unbeatable— period!**

**"SheetBlok has allowed me to build more soundproof studios than ever before, quicker and for a lot less money than when I used additional layers of brick, mortar, concrete, sand & rockwool instead. It's fabulous!" —Bob Suffolk, Acoustician, Trident Studios, London**

## TECHNICAL DATA SHEETBLOK

Sound Transmission Loss (dB) (ASTM E90-87 & ASTM E413-87)	@ 125 Hz ..... 15 @ 250 Hz ..... 19 @ 500 Hz ..... 21 @ 1000 Hz ..... 28 @ 2000 Hz ..... 33 @ 4000 Hz ..... 37 STC ..... 27
Thickness	2 mm/.077" (approximately 1/16")
Weight Nominal (lb./ft. <sup>2</sup> )	1.0
Flammability	UL94 ..... Listed SE "0" Passes MVSS-302
Recommended Service Temp.	-40 -180 F
Tensile Strength (psi)	400
Tear Strength (lb./in.)	70
Availability	4' x 10' or 4' x 30' rolls (both sizes UPS shippable)
Note	May be doubled for improved isolation.

## WHAT'S THAT MEAN TO ME?

Often customers ask us to put SheetBlok's performance into perspective for them; to put its effectiveness into "everyday" terms. So here goes.....

SheetBlok's Sound Transmission Coefficient (STC) of 27 is very good for a sound barrier. Its STC of 27 is an average of the decibels (dBs) of sound reduction SheetBlok yields at the various frequencies listed in the table at the left.

A reduction of 27 dB is roughly the same as the difference between the sound levels of a busy city street and a quiet, subdued conversation. Or the difference between the sound levels found in a subdued conversation and in an extremely quiet recording studio. Or the difference between a power saw and a semitrailer. Or between Roseanne Arnold's voice and anybody else's. OK, except my mother-in-law's. (I'm teasing, sort of.)

## U-Boat™ Floor Beam Float Channels

Raise your hand if you've ever heard the term "floating floor."

Simply put, a floating floor, or wall or anything else (like ductwork for example), is part of a structure that doesn't come in rigid physical contact with other parts of the structure. This is called *decoupling*. The reason for floating part of a structure is that physical contact makes possible flanking sound transmission throughout any parts of the structure that are in contact with each other. It makes sense doesn't it? If you place a vibrating tuning fork in contact with a drum's head, the drum will start to resonate with the tuning fork, thus producing sound, too. Walls, ceilings and floors behave much the same way; they vibrate (or *resonate*) when exposed to sound generated in the rooms they comprise.

In studios and many other environments, the transmission of sound from one space to a neighboring space must be controlled. An example would be the alleviation of sound leakage from a control room into a neighboring isolation booth. The easiest and most effective way to accomplish this goal is by floating parts of the structure, in this example walls and floors.

Over the years, floating as a concept has achieved a reputation as something quite difficult to implement; something 1 part know-how and 1 part black magic. In actuality, floating is quite simple once you have a grasp on the rationale behind it. Once you do, successfully floating part of a structure then becomes a matter of selecting the proper materials and correctly implementing them.

The floating of walls that were designed to block sound transmission allows these walls to do their job to the best of their ability. Conversely, a well-constructed wall that rests on, and is affixed rigidly to, a concrete slab shared by a control room and neighboring isolation booth will not effectively eliminate sound transmission between the two rooms. Thus, the floating of floors not only allows the control of flanking transmission (defined as the transfer of sound waves through a floor, under a wall & into a neighboring space), it offers a natural path for cable troughs.

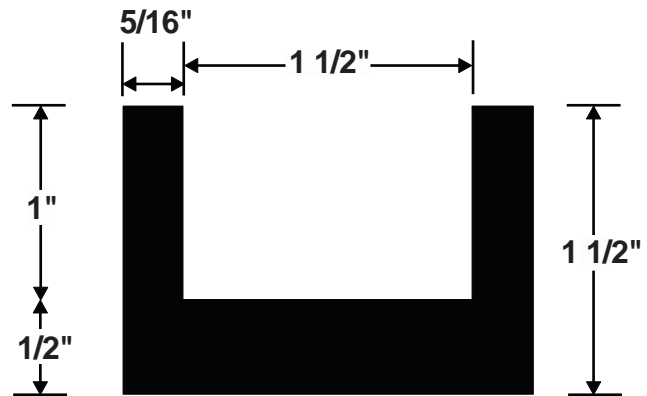
Ceilings shouldn't be forgotten when considering structures to float, even when each room has "its own" framed ceiling that may not be shared with neighboring spaces. Non-shared ceilings are still a vital line of defense against plenum and environmental noises and are thus quite worthy of floating.



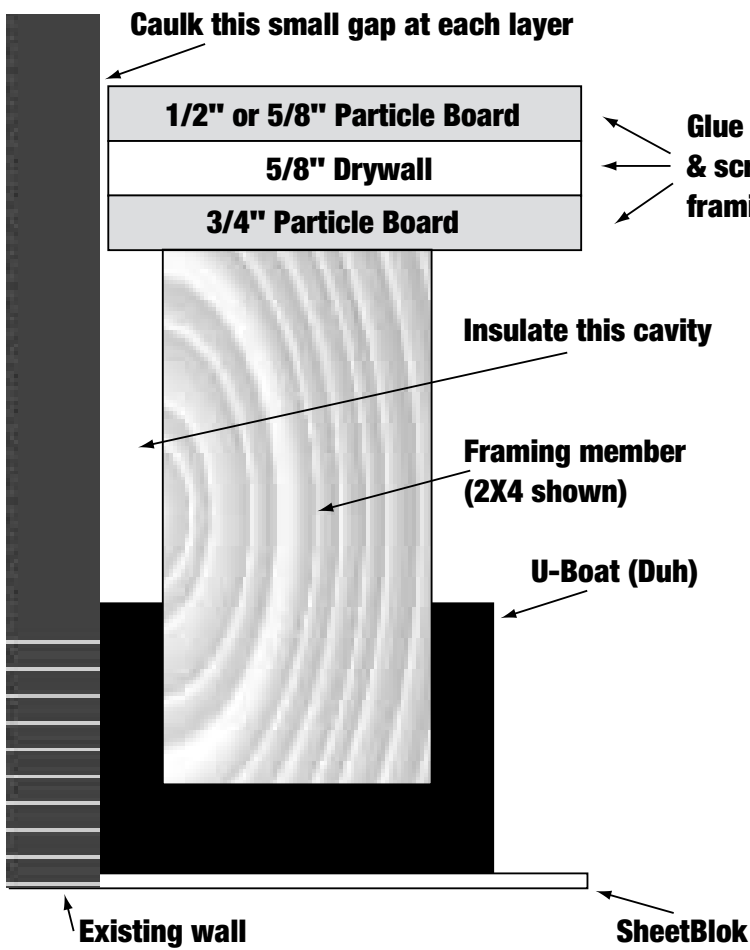
The material of choice when floating a structure is moderately dense rubber. Rubber's very composition moves its resonant frequency out of the "danger zone," and its solidity allows it to support safely great amounts of weight, so it's a natural! Another material that has been used but is not advised due to its lack of long-term ability to support great weight is styrofoam.

Rubber can take a couple of forms in its use in studio construction. It can be used as a sound barrier, for instance our SheetBlok as a layer in a good wall separating a control room and studio. It can also be used in the manner of our U-Boats: as a method of physically separating, or floating, parts of a structure. Many times both applications should be used in conjunction with each other. For instance, it's quite common to roll out a layer of our SheetBlok Sound Barrier over a shared concrete slab, then use U-Boats to float a framed floor over the slab. The SheetBlok dramatically cuts the sound coming from or going to the concrete; the U-Boats float the floor. This is the most effective implementation of U-Boats, unless you want to buy twice as many and install them over the tops of your framing members as well.

For years, famous studio designers have floated floors using specialized rubber pucks. There are a couple disadvantages to pucks, though, and that's why we developed U-Boats (& why famous people are now using them). Pucks typically are mounted to the flooring they float by means of mechanical fasteners like screws or bolts which can increase the likelihood that sound will travel into the floated floor. Pucks have been known to creep after



**U-Boat Floor Decoupler**



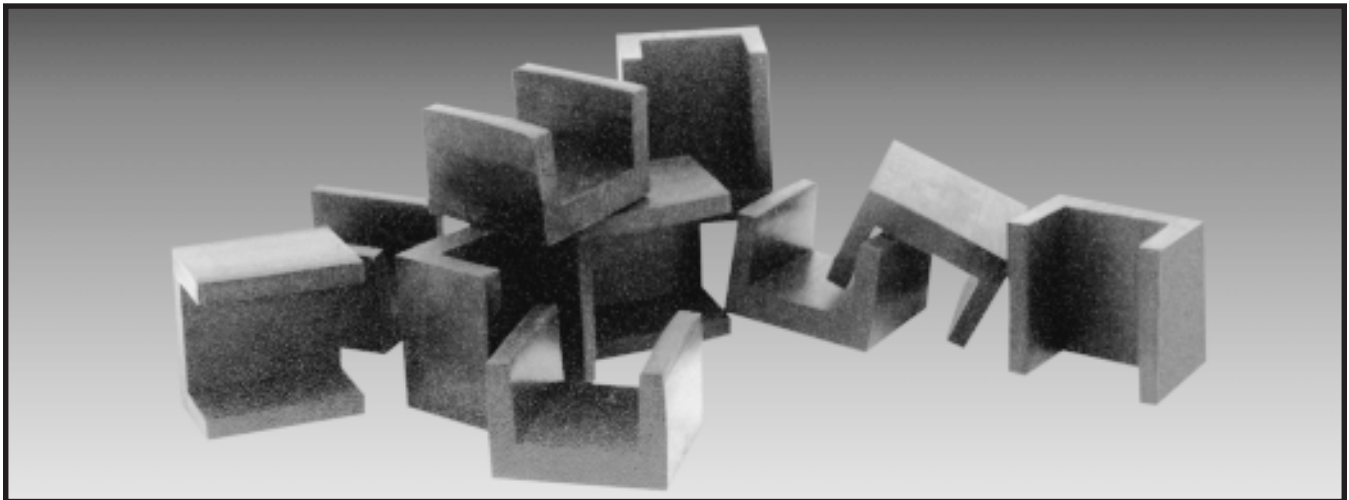
installation because they don't actually surround any part of the flooring they're floating. Pucks are *unbelievably* expensive, prohibitively so for most of us.

U-Boats are not attached rigidly to the flooring they float. They surround the framing members on 3 sides and are constructed of a special rubber so there is virtually no chance of creeping. They are priced such that virtually any- *and I do mean any-* studio owner can afford them. Famous studio designers have already expressed extreme gratitude that we developed U-Boats.

The thicker the framing members (joists) you're using to construct your floor, or the more layers of flooring you're laying down, the closer together you want to apply the U-Boats. Most of the time 12 to 16" spacing of the 2" long U-Boats works well. (Lawyers' Chorus: As we aren't at your location to oversee your installation & examine your building's engineering, we are unable to warrant the product's structural performance. If you're unsure as to how much load you'll be putting on each U-Boat, please consult a local structural engineer. U-Boats' rubber compound is so sturdy, every smart guy we've talked with has said they'll support ENORMOUS amounts of weight, especially since they're used every 12-16 inches.)

A good rule of thumb is to figure the square footage of your room then multiply it by 66%. The resulting number is the number of U-Boats you need. You may want to get a few extras to be safe, but experience has proven that 66% should be adequate.

For you techno-heads—and those of you who will be contacting a structural engineer—U-Boats are made of 60 Duro EPDM, the right hardness and type of rubber to use for floating.



U-Boats' name, concept and design are trademarks of Auralex. © Copyright 1996, 1997. All Rights Reserved.

## Life Insurance Sold Here

Sure, we'd rather ya buy some of our smokin' new Auralex Active or Passive Monitors, but we're smart enough to know that some of you are still in love with your faithful old Yamaha NS10M's.

That's ok. We're not bitter.

But there's something we have to offer you that could not only save your fanny at some crucial moment, it could save you the \$114 it costs to replace a blown NS10M tweeter. It's the new **D**ynamic **L**oudspeaker **K**ontroller (**DLK**) from Auralex and it's a beauty.



## The Concept

The NS10M has become the *de facto* studio monitor standard worldwide. In fact, it's quite renowned because of its tight, punchy, "real world hi-fi" sound. Unfortunately, it's also renowned because its tweeter is prone to, uh, pooping out (in Latin, *voice coilus toastus*). This is not only frustrating, it can be downright life-threatening if it occurs during a hot session and the producer not-so-gingerly places his hands around your throat to wring your neck.

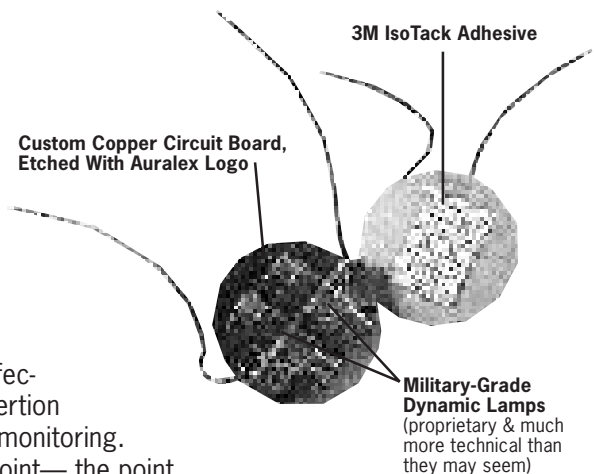
The NS10M tweeter works quite well up to a point, but above that point.....*hi fidelitus interruptus*. Have no fear—it's **Fearless R&D Man** to the rescue.

## Some Background, Please

Some of you may have had experience as live musicians with a famous manufacturer's live PA high-frequency horns' "built in protection circuitry." I don't want to mention any names, but the company's initials are EV. Anyway, when this normally very good sounding horn receives too much juice (technical word for amplifier output signal), its own internal sentry "sucks down" the output level to protect the unit's voice coil. I know that sounds like not a very technical description of the effect, but it's actually quite accurate, as you know if you've ever heard one in action. It truly does *suck*, and I don't mean that like Beavis and Buttthead; it audibly pulls back *so much* that it's like a compressor set on infinity-to-one ratio with a slow release time. (There, was that technical enough for you?) Since about 1983 this has seemed to us like not the best solution, so we came up with a better one.

## The Techno Lowdown

Our solution is much more elegant, we think. The **DLK** is a parallel configured, series-pass current limiter whose components act as positive temperature coefficient voltage-dependent resistors whose attack & decay characteristics accurately track high-level transients and excessive overload signal conditions. Like Dave Barry says: *I swear I'm not making this up.*



## Less Techno-Speak

At volumes commonly used for nearfield monitoring, the **DLK** is effectively out of the signal path, acting like a straight wire with 0dB insertion loss, so you don't have to worry that it's coloring the sound you're monitoring. But, the closer the tweeter's input signal level gets to the danger point—the point at which the tweeter is in risk of malfunctioning—the more the **DLK**'s dynamic design begins to work to protect the tweeter's delicate mechanical components by siphoning off excess sonic energy and dissipating it.

An analogy? It's like a safety net that appears and grows larger the higher you climb a tree. When you're 2 feet up off the ground, you don't need a net, so it disappears. As you climb, the net appears and in fact gets larger, offering you more protection as you move higher up the tree. The **DLK**'s smart circuitry works in much the same way, offering up to **4 times** the safety margin during abusive or accidental overload conditions. In fact, it's safe to say that probably 98 out of 100 users may never again fry an NS10M tweeter. With over 1.5 million **DLK**'s in the field, this proven protection technology has resulted in incredibly low failure rates in both the drivers being protected and the **DLK** devices themselves.

## Smart Thinking + Proven, Custom Technology = Great Value & Security

The **DLK** uses some of the most elegantly simple custom technology in electronic design today. To a very high quality custom printed circuit board we apply the proper number & type of the custom aviation-grade bulbs that comprise the **DLK's** circuitry. On the back of the circuit board we apply a strip of the strongest adhesive tape known to science, 3M Isotack™. (Isotack is so strong, in fact, that many thousands of pounds of it were used in the construction of the Sears Tower in Chicago to improve the building's structural integrity!) To the terminals of the **DLK** we hand solder 6" lengths of oxygen-free, heavy-gauge copper signal wire which the user then simply wire nuts to the (clipped) positive signal wire leading to the NS10M's tweeters. Last, the paper is peeled off the adhesive strip and the **DLK** is mounted directly to the back of the tweeter's magnet (don't worry; the presence of the **DLK** in no way interferes with the magnet's operation). The Isotack adhesive's bond actually improves with the passage of time, so the **DLK** is sure to stay securely mounted. The whole installation takes just a Phillips screwdriver and a couple minutes of your time— a very small sacrifice so that you don't needlessly "sacrifice" your expensive NS10M tweeters!



## Order Now & Receive A Free Additional Benefit

Sort of kidding, but not entirely. You see, the NS10M's tweeters not only are prone to failure as the signal input level approaches their tolerance threshold, *they're also prone to sounding less than optimum*. The beauty of having the **DLK** in the loop is that, by freeing the tweeter of only the excess input signal, it actually allows the tweeter to work better and with audibly less distortion. I've gotta tell you.....we all agree that we've never heard our NS10M tweeters sound as open and natural at high volume levels as we've heard them sound with **DLK's** in position. To our ears the tweeters even exhibit less of their legendary harshness, which we now feel convinced can be attributed less to the tweeters' inherent response curves than their power handling and thermal compression limits.

## The Last Pitch Of The Game

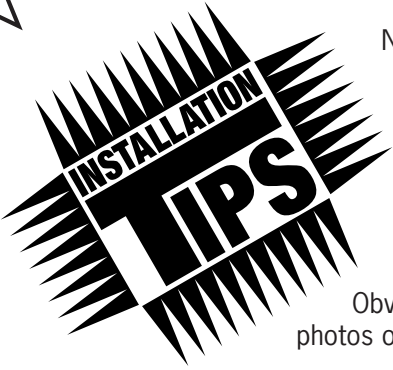
If you've spent any amount of time in front of NS10M's like we have, you're familiar with the phenomena we've described here and should realize that protecting yours with **DLK's** is virtually a no-brainer. You need 'em, they're easily installed and **you can afford 'em** because a **pair** costs less than replacing just **one** blown tweeter!

Add in our lifetime guarantee that we'll replace free of charge\* any **DLK** that physically malfunctions for as long as they're owned by the original purchaser, and you simply can't lose.

**Make the only wise decision. Protect your Yamaha NS10M investment. Order your DLK's today! (By the way, the DLK-10 also works with the NS-40M's tweeters.)**

**P.S.** The DLK10 is just the first DLK we intend to produce. If you'd like to see us offer a unit to protect another brand of tweeter or PA driver, tell your dealer to pass the word on to us. If we see a trend developing, if enough people express an interest in protecting a certain tweeter or driver, we'll head for the testing lab and develop a DLK for it. So, put on your thinkin' cap and let us know if you think there's a market for a new model of DLK.

**\*Unfortunately, due to the random nature of electronic equipment, acts of God, gross operator error & other quirks, we can't afford to replace your tweeters if they do ever blow, which wouldn't necessarily indicate DLK failure anyway since loudspeakers can cease functioning from such a wide variety of causes. What we do guarantee is that if the DLK ever mechanically fails (breaks), we'll send you a brand new one at our expense including standard ground delivery (no air shipments). Relax—you're covered. By the way, we're developing our own replacement tweeter for the NS10M that should be more "cost effective" than original equipment replacements anyway. Stay tuned.**



Not only is Studiofoam the world's most absorbent acoustic foam, it's the world's easiest-to-install acoustic foam! Why so?

Because we designed Studiofoam so each piece in each box is functionally identical. This means that, within the tolerances quoted in the catalog, each piece will be the same dimensions, and the peaks, valleys and pyramids will all line up. With a little imagination, some patience, and careful cutting with your handy electric carving knife, you can end up with a REALLY cool installation!

Obviously, we don't have the space to show you all the possible variations, but here are three photos of recent Studiofoam Wedges installations that might give you some ideas.

As you can see in the two photos on the left, we started with 4" Studiofoam Brand Sound Absorbent Wedges. We then cut each 2'x4' sheet diagonally to yield two triangular-shaped pieces 4' long. By the way, if you have a perceptive eye, you'll be able to see that we used CornerFills to give us a smooth edge to butt our Studiofoam up to. The seams between pieces are smooth enough that they hardly show up in the photo. Notice how well the peaks and valleys line up? Try doing THAT with some of the other foams on the market!

The look of the installation can be varied from this example by first cutting your 2'x4' sheets in half so you end up with 2'x2' squares, which is what the fellows did in the studio shown in the right photo. Because you're starting with square pieces of foam instead of rectangular ones, you can achieve a consistent geometric appearance that looks sleek and high-tech. In rooms where maximum acoustic control is the goal, this is definitely the way to go.

Put on your thinking cap and you'll soon come up with all kinds of ideas. Throw in a color variation—or utilize Studiofoam Pyramids instead of Wedges—and you've got the makings of a room that an interior designer could be proud of—not to mention a room that SOUNDS FANTASTIC!

If you're installing LENRD Bass Traps (or our Venus Bass Traps, which normally are used with 12" CornerFills), install them first, then map out in your mind how you want your Studiofoam to go up. A tape measure or yardstick will come in handy, as will a piece of chalk or a pencil to make small marks on your walls to insure proper alignment. It's not a bad idea to have a level nearby too; this saves a lot of measuring time.

If you're spreading your foam panels apart, say after you cut them into 2'x2' pieces, remember the easy formula to figure out how much space to leave among panels: if you know you've bought enough foam to do about 60% coverage, for example, you'd divide 2 (the width of the panel) by .6 (your percentage of coverage), then subtract 2. The result, in this case 1.3 ft., tells you how far apart to install your foam panels. Good luck & happy foaming!

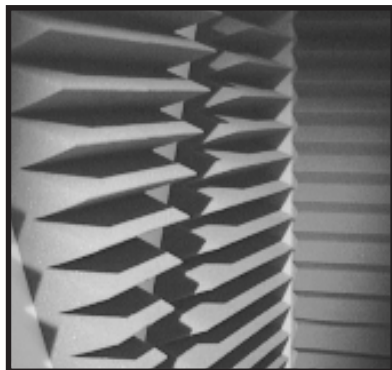
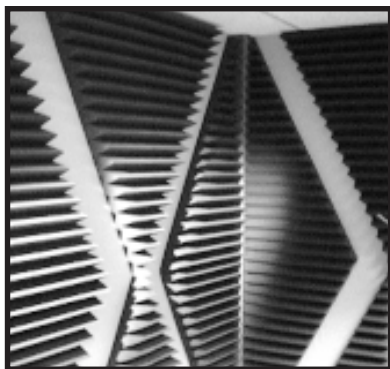


Photo courtesy of Jeff Choy

## Suggested Foam & Diffusor Layout

Most rooms share common acoustical problems like bass buildup, standing waves, flutter echo and excessive reverberation. We've dealt with these same problems so many times that we're able to save many customers the trouble of trying to figure out which products to buy and how to implement them.

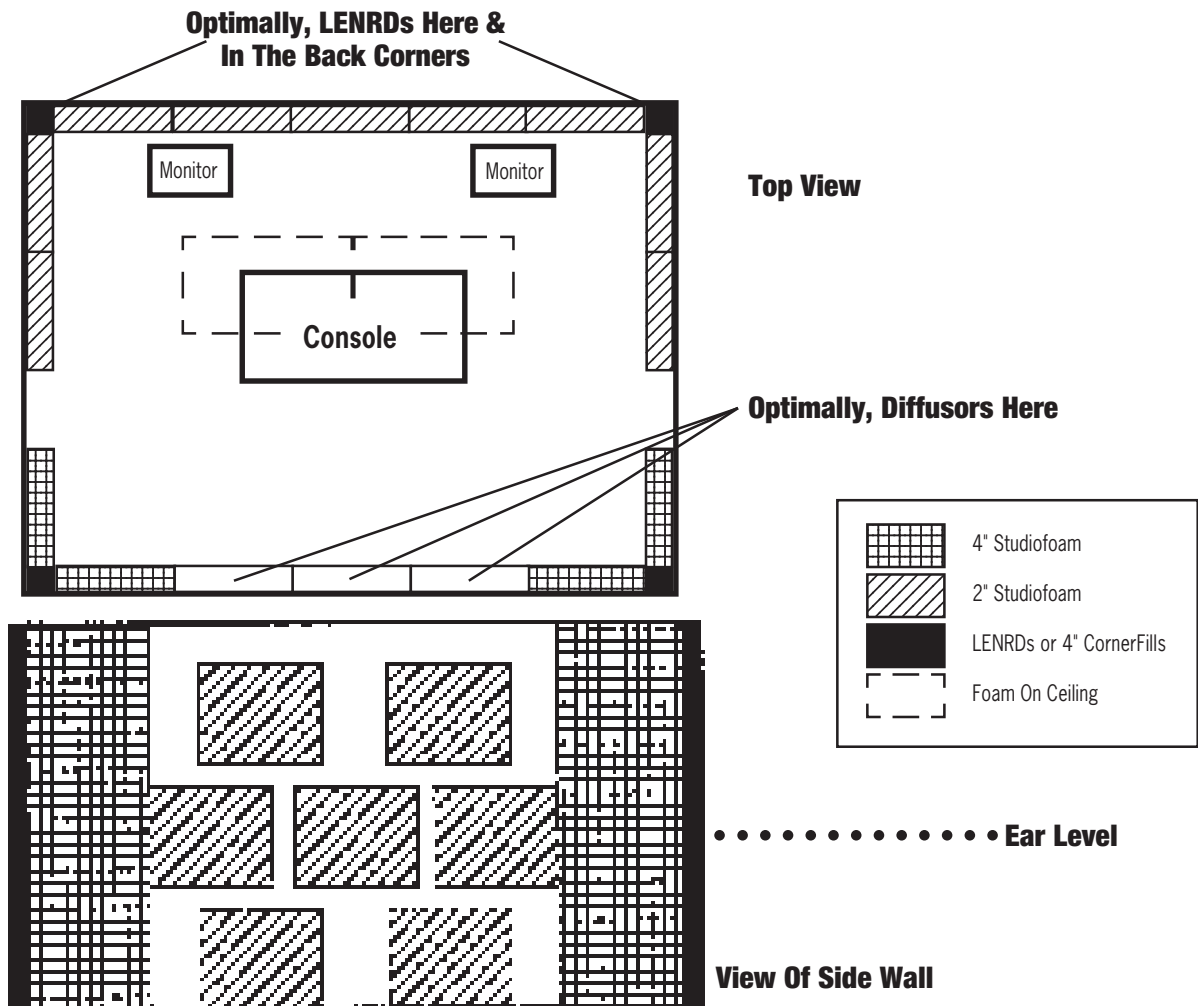
So pictured here is a diagram of a "typical" room and our suggested treatment. Your room dimensions may vary and your equipment layout, wall racks, windows, etc. may dictate modification of this treatment scheme, but this example should still be enough to get you started on the path toward "sonic enlightenment."

The theories involved are these. First, bass buildup occurs in the corners of rooms, especially rear corners, so we've incorporated LENRD Bass Traps there. In lieu of LENRDs, you can also substitute 4" CornerFills & 4" Studiofoam alongside. Second, most rooms (either control or recording) don't need to be totally reflection-free, but do require treatment for standing waves & flutter echo, so we've incorporated 2" foam applied in a staggered pattern to solve those problems without sucking the life out of the room. No matter which type of monitors you're using (nearfield, midfield or soffit-mounted), a couple sheets placed above & slightly ahead of the mix position will absorb early reflections that can smear imaging. 4" CornerFills are shown in the front corners to tighten low end, but most users substitute LENRDs there & some users with higher volumes & bigger budgets substitute 3" or 4" for the 2" on the walls.

If you simply can't afford to treat all 4 corners with LENRDs floor to ceiling, or even to install 4" Studiofoam and 4" CornerFills, consider putting 2 LENRDs in each corner. This is the best way to achieve a fairly large amount of low frequency smoothing without going over budget. If you like the look & need additional low-end absorption, but are out of corners or yours aren't 90 degree corners, consider adding some of our Sunbursts to your wall treatment scheme. Sunbursts give large amounts of absorption at all frequencies, but especially lower ones, so they're going to improve your room's acoustics as a whole.

These guidelines work well for most recording and control rooms, but may not be appropriate for isolation or vocal booths which typically should be entirely treated with Studiofoam so an "up close", reflection-free sound is achieved. These rooms are normally small, have low end buildup and can universally benefit from corner treatment with LENRDs if space permits. If space doesn't permit LENRDs, 3" or 4" Studiofoam wall treatment may suffice. As noted earlier in the catalog, if you have the vertical height to spare, you can also treat your booth's ceiling with Venus Bass Traps and use 1" or 2" on the walls.

We hope these guidelines make your choice of proper treatments easier. Good luck!



## Control Room Dimensions

Most of us with personal-use or project studios have to make the most of rooms that already exist in our homes, or sometimes in commercial buildings. Generally these rooms are square or rectangular in shape and are best treated with Studiofoam to alleviate their worst sonic characteristics.

But what about those of us who **(a)** have room to spare and **(b)** have money in the budget that allows more leeway as far as how in-depth the construction gets? Then we're candidates to build a more "correct" control room. If you get too tied up in the mathematics that're involved in properly spreading your room's modes (detrimental response peaks dictated by room dimensions) but don't really know what you're doing or simply construct the room wrong dimensionally, you're gonna be slapping your forehead & saying, "Doh!"

As you might have guessed, I don't believe in reinventing the wheel because what's been proven to work before for the industry's elite, if properly implemented, will work for you, too. To that end, it's my feeling that there's really no point in doing tons of math and refiguring dimensions. Why not just build a copy of a control room that's already working for some famous studio or artist? In the 12/95 issue of *Electronic Musician*, recording artist Lori Lieberman bemoaned all the troubles she had recording good, clean sound for her most recent album. Her sentiments aren't original, but sum up what so many have learned before her: "Now I know that (too much ambient sound in) the room....is responsible for 90 percent of how the recording turns out." I couldn't have said it better myself. If Bill Clinton were an acoustical consultant he'd say **"It's the reflections, stupid."**

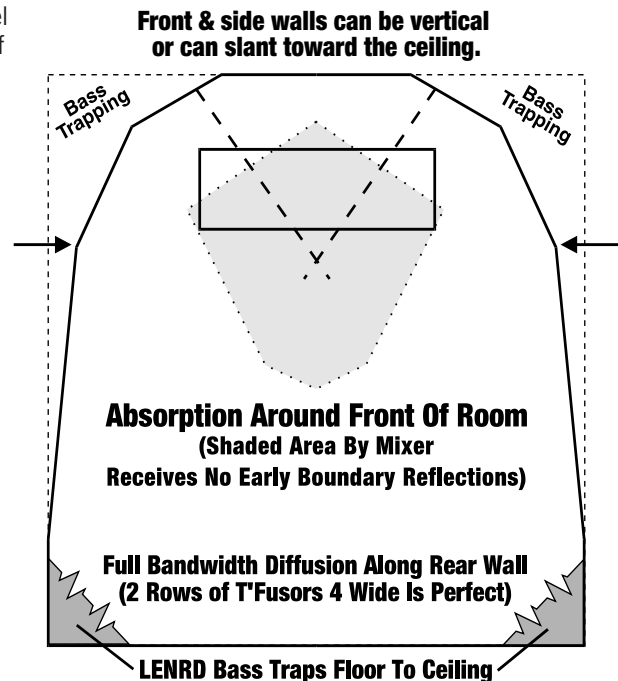
Now, naturally, you're not going to be able to call up Oceanway in L.A. and nonchalantly ask them to send you a copy of their blueprints, so the next best thing is to buy a scale ruler and look for books or magazine articles that show the floor plans of some famous rooms. Make sense? Magazines like *Recording*, *Electronic Musician* and *EQ* are good places to start.

To save you the trouble of scrounging, shown here is a diagram of a world-class-type control room. I've changed the dimensions slightly to get away from copyright infringement, but it's close enough to give you a good starting basis in laying out your room if you have enough physical space and money to work with. I produced the diagram freehand on the PC without regard for actual angles, wall lengths, etc., so you physicists out there don't call me up to chastise me. The drawing is more meant to teach you the **concept** of how a good room should be laid out.

**Generalizations: The front end of a control room should be highly absorptive regardless of the type of monitoring being done or the type of program material being manipulated.** The ceiling should slope up gently from the front of the room toward the back of the room. The rear of the room should be diffusive full bandwidth (low frequencies up to high frequencies) and should feature low end absorption in the rear corners (LENRDs shine here). The wall surfaces where the soffit-mounted monitors are (big speakers stuck into wall cavities so the fronts of the speakers are flush with the wall) should be angled downward so the monitors point at the head of the engineer in the "sweet spot" or slightly behind the sweet spot (this applies even if you aren't soffit-mounting any monitors). The objective: stop early reflected sounds from grouping in the sweet spot area to yield a more accurate soundfield. Diffusing the rear wall, if used in conjunction with absorptive walls angled as diagrammed, serves to open up the sound (without adding coloration) & greatly widen the sweet spot. The benefits of rear wall diffusion are universally recognized by the million dollar room guys. I highly recommend you find room in your budget for some good diffusers if your room is > 12' deep.

Even if you're trying to retrofit a square or rectangular room to be more correct, should you desire, you can still implement & benefit from some of the concepts shown here. If you're willing to go to the trouble, angle both side walls so the room is wider at the back or simply chop off (frame over) the front corners of your room. Lower the ceiling in the front of the room so it slopes up as it moves toward the rear of the room, then make it absorbent with Studiofoam\*. Make your room symmetrical if at all possible. If not possible, **heavily** absorb any wall nearer your monitors than its opposing wall. It bears mentioning at this point that this type of room redesign is generally not necessary; appropriate treatment with Studiofoam, LENRDs and either of our types of diffusers can render virtually ANY room capable of supporting world-class sound. So, perhaps you should put aside any reconstruction ideas and concentrate on the proper acoustical treatments. I'm not trying to grind my company's own axe by suggesting this—it simply works & is less expensive than major renovations.

If you need further help in learning how your room should be shaped or how to build your windows, floor, walls, etc., you might want to check out our critically-acclaimed mini course on construction, **Acoustics 101**, available on the Web at our homepage at [www.auralex.com](http://www.auralex.com). We used to sell Acoustics 101 for \$12, but now it's yours free—just download it courtesy Auralex & your dealer.

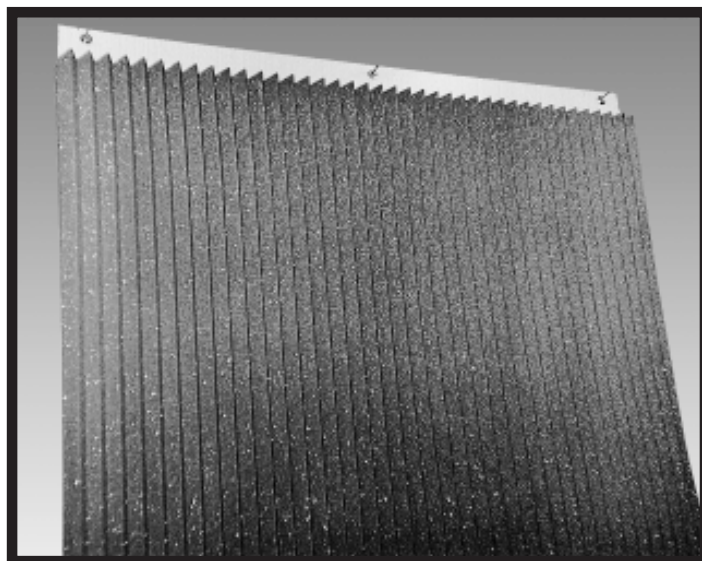


\*or suspend Studiofoam-covered pegboard at an angle at the front of the room. Foam the room surfaces behind the pegboard, too.



## Other Products That Might Solve Your Problems

Pictured at the right is a two-sided baffle we made of Studiofoam Wedges to illustrate how easy it is. At the top of the baffle is a piece of Cor-X, which is a polypropylene material similar to corrugated cardboard. The Cor-X has brass grommets through it which allow the unit to be suspended without fear of tearing. Instead of Studiofoam Wedges, Studiofoam Pyramids or Sonomatt may also be used. We no longer fabricate the baffles for you because this adds to their cost & brings into play shipping constraints due to size. Instead, we've found the best solution to be for us to supply you with the foam (especially 2'x4' sheets rather than 4'x8'), the Tubetak adhesive and the Cor-X with grommets pre-mounted. This allows ease of shipment while saving you money. Assembly is a snap, too—no big whoop!



## Tips And Some Other Stuff You Maybe Didn't Know

★ For a cool look, much greater ease of installation & improved diffusion, we advise that when you receive your 2'x4' Studiofoam Wedge Panels, you cut them in half so the pieces are 2' square and rotate every other panel 90 degrees as pictured elsewhere in this brochure. This alleviates any potential alignment variances, makes installations go much quicker and seems more effective to our ears. You can even rotate the panels so they look like diamonds on your wall. Nifty!



★ If you couldn't afford to buy as much foam as you need, or you want to improve the sound of your room without making it too dry, in some rooms you can leave 6"-2' between pieces of foam. This is possible 'cause our foam is so much more absorbent than other brands. Treat your corners first, then spread panels to fill the rest of your wall space, trying not to mirror-image opposing walls if possible. Regardless of which foam company you might buy from, bear in mind that different pours (batches) of foam made at different times can often be different shades of the same color even though they were poured using the exact same formula & the exact same chemicals. This has to do with minute environmental variances in the production plants and can't be helped. So, if you're intending to buy some foam now & some later, at least cover entire walls or rooms to minimize the chances that any color variations will show up. Remember that foam is primarily purchased as an acoustic tool, not an aesthetic one.....

★ If buying varying thicknesses of foam, or buying Venus Bass Traps or LENRDs, put the thicker foam in the corners of your room to get the maximum benefit from thicker foam's increased low-end absorption capabilities. As previously noted, some acousticians have been known to install Venus Bass Traps on studio ceilings, then treat the walls with 1" or 2" Studiofoam. This may be a viable choice for those of you who don't have any available 90 degree corners.

★ What some users perceive as color fluctuation among their foam sheets is actually a visual illusion due to the direction the foam was cut, kind of like when you turn your lawn mower around and head back the other direction while cutting your grass. If this happens to you, try rotating the sheets 180 degrees from each other. In the case of Studiofoam Pyramids, if you cut the 2'x4' panels into smaller pieces, you can actually rotate your foam every 90 degrees to facilitate color matching if necessary. Due to environmental factors some foam may at first appear shiny compared to other sheets in the box. This has to do with the cells' walls being cut & should pass in a few days as the foam acclimates itself to your specific environment. Also, all foam has a distinctive smell when it is new, but this too passes in just a few days and is no cause for alarm. Please don't call to tell us your foam smells funny.

★ Reflective walls generally cause more problems than reflective ceilings, so we advise investing the bulk of your money in wall treatment. This isn't to say that you can ignore your ceiling, but if you can only do one or the other, "Hit The Wall" first! If you desire to treat your control room's ceiling, concentrate on the ceiling at the front half of the room (the end where the monitors & board are) & spot treat the ceiling toward the rear of the room.

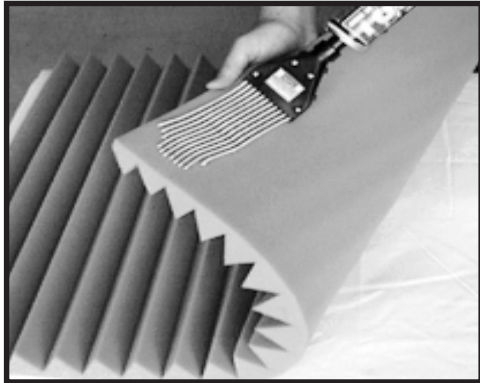
## How's It Hangin'?

We offer three different mounting solutions & have a couple others to suggest, too.



## FOAMTAK™ STUDIOFOAM SPRAY ADHESIVE

The absolute best mounting solution on the market—bar NONE—is our Foamtak™ Spray Adhesive. It features tons more actual adhesive than other brands & has a unique spray pattern that keeps it on the surface of your foam. Other brands will soak in, dry out & let your foam fall down! (This isn't salesmanship; we've seen it happen dozens of times.) Foamtak is specially formulated to be safe for the environment & is REALLY easy to use. Each can covers "about" 96 square feet; more if you're mounting 1", less if you're mounting 4", Venus, LENRDs, etc. Pick some up today!



## TUBETAK™ STUDIOFOAM LIQUID ADHESIVE

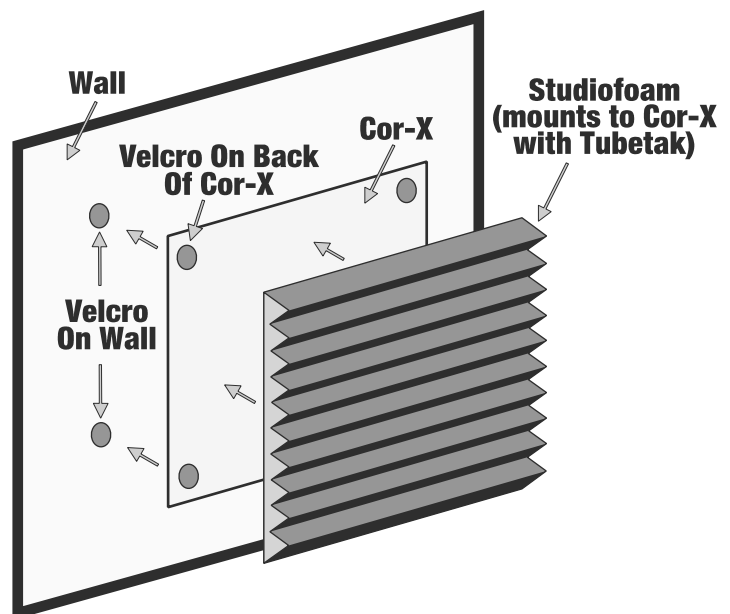
A popular & longest-lasting product for mounting foam is our Tubetak™ Permanent Adhesive that's applied with a caulking gun. Each tube mounts **up to 32 square feet** (20 sq. ft. with Venus, 12" CornerFills, LENRDs, etc). We guarantee super-affordable Tubetak won't oxidize (eat) your Studiofoam and that it'll keep your foam up as long as you want it to. Some products like contact cement & ones you might think of by name are guaranteed by their own manufacturers to eat your foam, so stay away from them. In the photo, the Tubetak is being applied with the help of our Tubetak spreader (optional) for more consistent adhesion.

## Vel-X Mounting Panels

Some users can also benefit from our Vel-X Mounting Panels that you stick up with special Velcro for portability. They're an elegantly simple invention that saves some users tons of money. Everything you need is included: special Velcro, Tubetak & Corex corrugated polypropylene mounting panels! Vel-X Mounting Panels are just under 2' square so they won't show at the edges of your foam.

Questions? See your dealer or call Auralex!

**Other options:** finish nails, seamstresses' T-pins & two-sided carpet tape.



## Any Way I Can Increase My Foam's Low Frequency Absorption, While At The Same Time Increasing My Sound Isolation, Too?

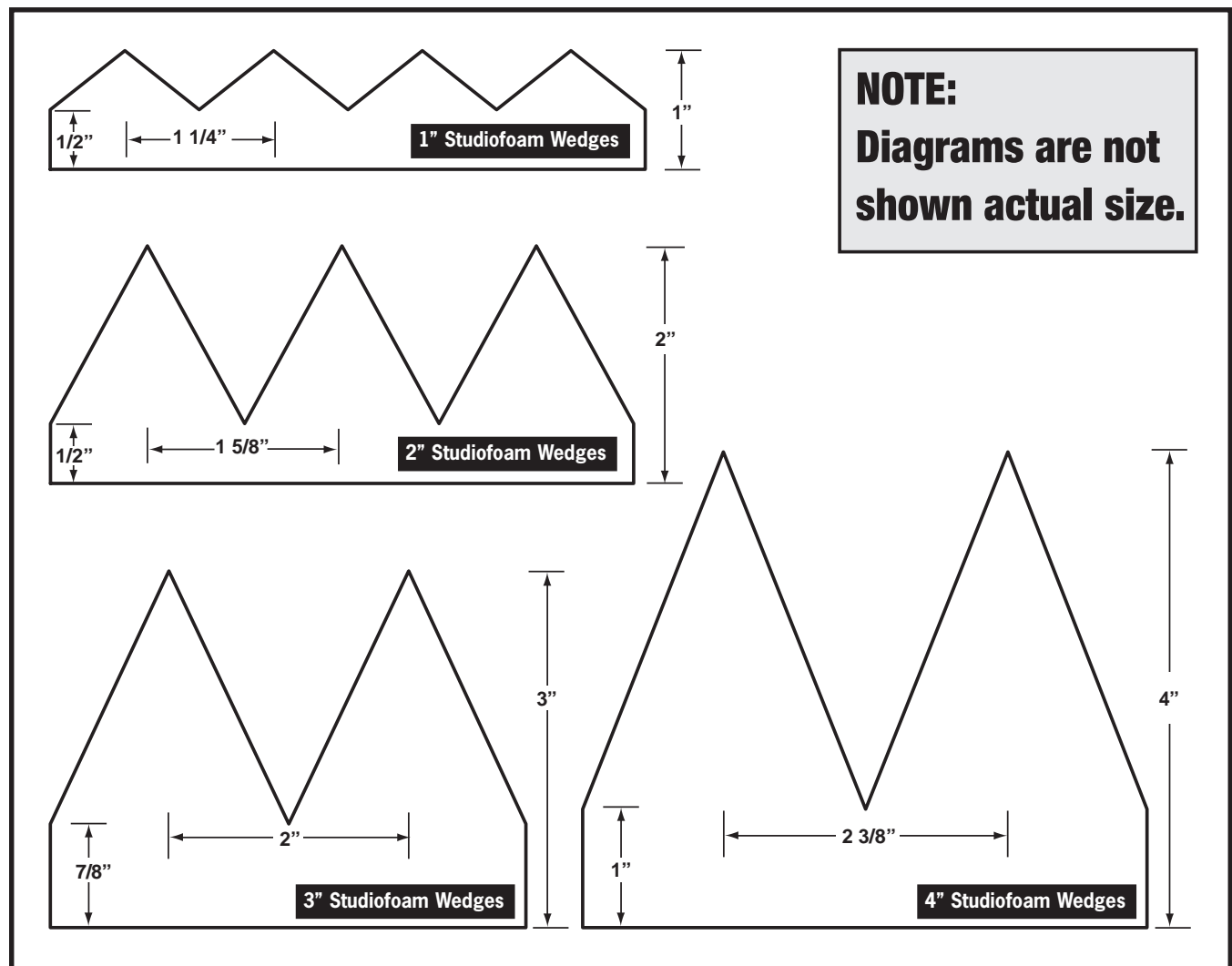
My, what a well-worded and thought-provoking question. As a matter of fact, **there is!**

Build yourself a frame attached to your wall & constructed out of 2x2s (which are actually 1.5"x1.5" and are available at your local lumber yard for about 99¢ apiece). Caulk the 2x2 frame airtight at all joints or the trap won't work right. Insert a piece of fiberglass insulation (but don't pack the cavity with it). Cover the face with 1/2" plywood, caulked to the 2x2 frame. Cover the plywood with your Studiofoam. This device is a tuned resonator and can really increase your absorption in the 100-125 Hz region at a very low monetary & manpower cost.

Another option is to frame out in front of your walls with 2x4s up to chair rail height (30"), insulate and caulk the framed area, then cover the front with 1/4" or 1/2" plywood. This is also effective down to about 100 Hz and makes your room look better. You can paint or stain the front, or even cover it with acoustic foam.

### Dimensions and The Obligatory Disclaimers

Diagrams & descriptions of foam dimensions are nominal and may vary slightly from actual finished product dimensions, as is standard in the industry. While some of our competitors have difficulty holding their quoted tolerances, we rarely do due to our very expensive German cutting equipment. Sure we quote our dimensions as being +/- 1/2" like everybody in the foam industry due to the nature of foam rubber (to cover our collective rear end, really), but only on rare occasions are we out of spec. This can sometimes happen, but doesn't really hurt anything, so please don't be like the cretin who recently wanted us to replace all his foam because he measured each piece and found *one* that was 1/8" off & to him it was "VERY noticeable." People like this have too much free time on their hands, wouldn't you agree? The words "get a life" come to mind...If your foam varies slightly, it can be stretched or smooshed to fit.



# How Do I Figure How Much Foam To Buy & How To Spread It Out?

Assuming you've decided which product is appropriate for your needs, now it's time to take some room measurements. Measure the width and height of each area you want to treat (this could be entire walls or ceilings, or just portions of them due to equipment racks, windows, etc.). Round up each partial foot then multiply the width times the height. Add these square footage figures together for all the areas you want to treat to get your total available coverage area. This isn't difficult, you can do it!

**Figuring the Square Footage of your Room**

<p><b>Wall 1:</b>                  Height: _____ x                  Length: _____                  Less approx. sq. ft. of windows, doors, or any other area that can't be covered: _____  <b>Wall 1 Total Square Footage:</b> _____</p>	<p><b>Wall 2:</b>                  Height: _____ x                  Length: _____                  Less approx. sq. ft. of windows, doors, or any other area that can't be covered: _____  <b>Wall 2 Total Square Footage:</b> _____</p>
<p><b>Wall 3:</b>                  Height: _____ x                  Length: _____                  Less approx. sq. ft. of windows, doors, or any other area that can't be covered: _____  <b>Wall 3 Total Square Footage:</b> _____</p>	<p><b>Wall 4:</b>                  Height: _____ x                  Length: _____                  Less approx. sq. ft. of windows, doors, or any other area that can't be covered: _____  <b>Wall 4 Total Square Footage:</b> _____</p>
<p><b>Ceiling (OPTIONAL)</b>                  Width: _____ x                  Length: _____  <b>Ceiling Total Square Footage:</b> _____</p>	<p><b>Wall 1:</b> _____  <b>Wall 2:</b> _____  <b>Wall 3:</b> _____  <b>Wall 4:</b> _____  <b>Ceiling:</b> _____  <b>Total Treatable Sq. Ft.:</b> <input style="width: 50px; height: 20px;" type="text"/></p>

Next, decide how much of the available coverage area *should* be treated. Using the guidelines & info spread throughout this brochure & in Acoustics 101 if you downloaded it, decide if you should treat as little as 50% or as much as 100%. Most users can be safe figuring between 50 and 70% treatment if they're careful to do a proper install (i.e., if they don't mirror image opposing walls, do spread their panels apart the appropriate amount for their room size & function, do treat corners for increased bass absorption, do treat their walls before their ceiling, etc.). Bear in mind that, generally, the worst-sounding rooms are ones with dimensions which are all divisible, or close to being divisible, by the same number (for example, like a room that is 24' wide, 12' high and 30' long; all dimensions are divisible by 6). They tend to have more prominent standing wave and low frequency room mode problems. Very rarely rooms can use as little as 35-40% coverage to control their excessive reflections. For example, we recently supplied treatment to a church gymnasium that amounted to just 33% coverage and the client is exceedingly happy. The room was previously so poor sounding that it sat unused for a few years. After treatment, they regularly pack the room with over 400 screaming kids and put on Christian rock concerts at high sound pressure levels, so you **know** the solution worked well! Of course, the degree of sonic integrity desired in a gym is a lot less than that required in a studio or home theater, so your percentage of necessary coverage may vary.

Also don't forget that spreading foam panels apart by 6"-2', depending on the size of your room, yields an enormous amount of beneficial extra diffusion of reflected sound waves (off the exposed panel edges) and actually gives you more absorption for your money. To figure how much blank space to leave between your foam panels, if you've cut them into 2'x2' squares as we recommend, follow this formula: divide 2 by the percentage of space you desire to cover, say 60% (.6), then subtract 2. The resulting number is how far apart in feet or fractions thereof that you should spread your panels.

# Case Studies

Following are some examples of recommendations we've given recent customers. Dissecting these discussions is a good way for you to follow our logic as to which products solve which problems and their proper implementation. Obviously, we don't have space here to cover every possible variable or room type, so see your dealer for additional help and, if necessary, ask him or her to help you fill out a **Personalized Room Consultation** form.

## Case Study #1

The situation: a blues club with a residential apartment upstairs. The structure: concrete walls, concrete floor, concrete ceiling with suspended ceiling tiles 18" down. While the client noticed less-than-ideal sound in the club, the main problem he wished to combat was the structure-borne transmission of sound to the apartment upstairs.

Our response: Roll out 6" un-faced insulation over the top of the t-bar (suspended ceiling grid), then roll out a layer of SheetBlok over the top of the insulation (or at least back each ceiling tile with SheetBlok). The t-bar should be reinforced to support the added weight of the insulation and SheetBlok. Seal the juncture where the rolled out SheetBlok meets the structure by using duct tape. Stage itself: pull back the carpet and pad on the stage, then reinforce the stage framing members with stringers to make the stage as stiff as possible. Insulate between the stage joists with 6" insulation to cut down the reflected sound under the stage. Line the bottoms of the stage joists with SheetBlok to isolate the stage from the structure's concrete floor or float the stage on U-Boats. Install a layer of SheetBlok on the floor of the stage itself, or at least a layer of 5/8" drywall and then a layer of 3/4" particle board cross-seamed, then lay the padding and carpet back down. If the pad isn't 6# rebond, replace it with this type or ComfortWear-200 brand (it has a recognizable honeycomb surface texture and offers 5-7dB of additional sound isolation). The stage should be kept as physically separate from the structure as possible. The walls: apply Studiofoam as described elsewhere in this booklet, realizing that 4" foam will alleviate more of the low frequency sound that is offending the apartment upstairs. Should the budget allow, add additional layers of drywall to the existing walls with Z channel or a layer of SheetBlok then a layer of 5/8" drywall.

## Case Study #2

The situation: a one-car garage 13'x19', carpeted floor, 5/8" drywall walls, no windows, one 36" solid-core door, acoustical tile ceiling at 8' height. The room is used to teach guitar and rehearse with guitar, bass, drums & drum machine. Problem: excessive slap echo and reverb along with excessive low end buildup due to room geometry and drum kit being located in one corner. Owner not overly worried about sound transmission to/from the outside, but would like some additional transmission control.

Our recommendation: roll out un-faced insulation over the top of the suspended ceiling tiles, thus increasing transmission loss through the ceiling while adding low frequency control to the room. Treat all four vertical corners with LENRD Bass Traps. Treat the walls with 2" Studiofoam, preferably cut into 2'x2' panels and applied in a staggered checkerboard pattern with space between panels, easily adapted so no two parallel walls are mirror-images of each other. This method yields improved absorption and diffusion without costing any more money. Our expected coverage minimum for a room of this size and with this intended usage is 60%. The customer originally thought he wanted to purchase Venus bass traps & 12" CornerFills for all 4 wall/ceiling junctures, but we recommended LENRDs instead because of his room's size. We advised 2" or 3" wall foam instead of 4" because the slap echo and excessive reverb, as well as high SPLs generated by guitar amps, drums, etc. dictate more coverage, not just thicker foam. If money was no object, 4" would be preferred, especially on the walls near the drum kit & glued to the ceiling tiles above the drums.

## Case Study #3

Ok, I lied. It's not a specific case study, but it comes up often enough that it bears mentioning. It pertains to isolation or voiceover booths. Booths of this size (small, rectangular) tend to have pretty severe low end room modes, so the obvious choices are 4" Studiofoam & 4" CornerFills, or 2" Studiofoam & LENRDs. For those whose booths serve as both voiceover (dry room required) and iso booths (often some ambience desirable), a good solution is to mount some of your Studiofoam panels on something like plywood, masonite or our Vel-X Mounting Panels so that they can be taken down randomly to tune the room for a more live feel as desired. T'Fusors or MiniFusors, especially if you drill small holes in their flanges so they can be hung on hooks on the wall, are very appropriate for those of you whose booths often play host to singers, sax players, violinists, flutists, acoustic guitarists, etc. These sorts may want to choke you if you put them in a booth that's too dry for their palates. So, why not bass trap your corners with LENRDs or ceiling with VENUS Bass Traps (permanently, because that's absorption the booth will *always* need) and install your foam & diffusors in such a way that allows you to tailor your booth's sound to each session's specific needs? Make it so!

**THIS IS VERY IMPORTANT INFORMATION. READ IT BEFORE ORDERING OR CALLING US!** Sorry for all the disclaimers, but certain past customers (may they not rest in peace) have necessitated them. While we understand that you might read these statements and be scared by them, we hope you aren't because they're not meant to frighten you or make you think we're gonna run off to some faraway island with your money & leave you high and dry with no product. We're not like that and don't do business that way! These statements are simply meant to give you a full, realistic picture of how the foam industry operates and what to expect when you order from Auralex so you don't have any surprises due to abnormal expectations. We want happy, satisfied, well-informed customers!

Please pick our brains as much as you need to before ordering because, due to the easily-damaged nature of acoustical foam products, we are virtually always unable to accept returns. There are RARE exceptions, but don't bank on 'em.

**Minimum order is one complete box of any of our foam products.** Air shipment is very expensive & is the only "guaranteed delivery by a certain date" shipping method (with freight prices ranging from \$120-\$200 per box), so allow plenty of lead time when ordering and don't rely on quick shipping to save your fanny. Any delivery times quoted by us are estimates only of how long it "normally" takes UPS or common carriers to deliver to your area, not guarantees. Samples you might receive are samples only and may not be "exactly" like finished products purchased from us; the colors and sizes of samples are for representation only. Please read foam color disclaimers elsewhere in this brochure because all foams, but especially light colored foams like beige & light gray, are subject to color changes due to environmental factors we have no control over & therefor can't guarantee. Due to the very nature of manufacturing acoustic foam rubber, all dimensions quoted must be specified as being  $\pm 1/2$ ". While all data is believed to be accurate, no warranty, either expressed or implied, is given with regard to merchantability, fitness for a particular purpose or otherwise. I don't know what that means, but the lawyers said to include it.

Regarding lead time, **our competitors quote 6-12 week delivery times.** We feel this is way too slow, so we do our best to have your order to you in no more than 21 days from the day you place it, often quicker. Please bear with us and don't wait until the last minute to order your product, because customers are literally buying our foam as fast as we can produce it! We are unable to promise same or next-day order fulfillment, but do process and fill most orders within 3 business days. If you want us to put your order in front of others already in line, we will do so for a nonrefundable \$45 rush fee. This doesn't guarantee your order will go out same day or that we'll ship it by overnight freight; it simply means we'll give your order the priority you desire. If you call up & hound us about rushing your order through but don't want to pay the \$45 fee, or cry to us because you waited too long to order & don't receive your product by a certain time & didn't want to pay UPS Air rates, we'll put on our frowny faces and come womp you with CornerFills.

We can simply not be held liable for screw-ups by anyone other than us, such as freight companies. Our boxes are sized to save you TONS of money on freight vs. our competitors, and at times take a bit longer to get to you than little boxes due to their large size. If you receive boxes that are beat up with damaged foam inside & feel you've been harmed, the Federal Trade Commission says it is **YOUR** responsibility to file a claim with the shipper; by law we cannot do it for you. You should be getting the picture by now: when freight companies screw up it's not our fault & **we are simply not liable by law.** We know it doesn't seem fair, but it must be this way. Please note also that UPS will not initiate a trace until at least 14 days have passed from the date the shipment was initiated. **Don't ask us to call UPS to check the location of your order once we've shipped it, please.**

**Customer pickup at our location is not available.** If you receive your order & feel you have defective foam (hardly ever happens), DO NOT MOUNT THE DEFECTIVE PRODUCT. Call and notify us within 7 days & return ship the defective product to us. Upon receipt & inspection we will issue replacement product & ship it at our expense; **not sooner. Fail to notify us within 7 days from receipt or mount some of your foam before discovering any defect and you forfeit all rights to replacement product.**

At these rock-bottom prices & with our short profit margins, **all sales are final; no refunds or credits given, regardless of method of payment, and no order may be cancelled once product has shipped.** We virtually never accept returns because past experience has proven that foam normally arrives back at our location trashed & in such poor condition that it can't be resold, to say nothing of the way a certain freight company has never paid us the \$12,000 they owe us. If we ever do take a return, a 30% restock fee will apply and is non-negotiable. We must charge this fee to help defray the costs we incur providing free consultation to our customers. **All returns must be pre-approved and accompanied by a Return Authorization (RA) number which should be clearly marked on the box or shipping label. Anything returned to us without an RA # will be refused.**

Material Safety Data Sheets are available; please request them if needed. Always follow directions.

**IMPORTANT NOTE:** Unless otherwise noted, flame and absorbency data mentioned applies to charcoal-colored Auralex products. The Federal Trade Commission has jurisdiction over foams & considers no existing testing method or standard regarding flammability to be an accurate indicator of the performance of cellular plastic material under actual, "real world" fire conditions. Any test results listed are intended only as a barometer of the reaction characteristics of the material under very specific and controlled laboratory conditions. Any terms used in the description of our raw foam's characteristics in the lab are not intended to be a representation of Studiofoam under actual fire conditions. Always consult your local building codes before purchasing and installing any acoustic foam product regardless of vendor.

By purchasing any product from Auralex or its dealers, you agree to hold Auralex harmless with regard to any and all claims arising from the use and/or misuse of these products, no matter how occasioned, including personal injury, fatality and loss of income, either incidental or consequential. Seller's sole remedy to buyer if awarded shall be replacement of proven defective product.

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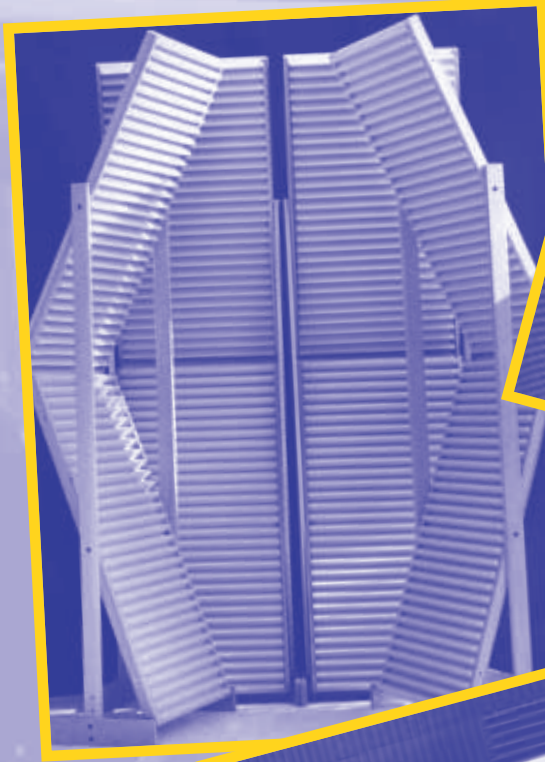


Photo courtesy of Jeff Choy



Photo courtesy of Jeff Choy