Episode Book

EPISODE #6720

Why Soundproof Curtains Only Work as Absorbers

PUBLISHED	21 November 2026 at 13:20 UTC
DURATION	28:51
LISTEN	myweirdprompts.com/episode/soundproof-curtains-acoustic-absorption-mass-54605/
HOSTS	Corn, Herman, Larry, Hilbert
SCRIPT MODEL	z-ai/glm-5.3
VOICES	omnivoice
PIPELINE	V5.36
SOURCES	25 cited by the research (listed at the end)
BOOK GENERATED	21 November 2026 at 19:31 UTC

SYNOPSIS

Soundproof curtains promise quiet, but the physics of sound isolation tell a very different story. While heavy fabrics cannot effectively block outdoor street noise due to the mass law, they excel at an entirely different task: absorbing mid-frequency reflections within a room. This breakdown covers the critical divide between transmission loss and noise reduction coefficients, comparing heavy acoustic drapes against standard moving blankets, duvets, and fiberglass panels to explain how makeshift vocal booths actually improve recorded speech.

TRANSCRIPT



Corn

There's a sound every home recordist knows. You play the take back, and it sounds like it was recorded in a stairwell, because in a sense it was. Then you hear a take from a treated room, and the voice is just... there. Nothing around it.



Herman

The difference between those two takes is almost never the microphone. It's the room.



Corn

And I want to underline that, because it's the most counterintuitive thing in home recording. People spend hundreds on a mic upgrade and record in the same boxy corner, and the new mic faithfully captures the boxy corner in higher fidelity. You've bought a better ear and put it in the same bad room.



Herman

A more honest spec sheet would say: this microphone will reproduce your room problems with stunning accuracy.



Corn

Daniel's got a specific version of that problem this week. He's got a heavy sound-blocking acoustic curtain from the old flat near the traffic intersection, Hannah was about to bin it, and he staged an intervention because he's recording a lot of voice work at home for TTS and ASR training. Complications: a sixteen-month-old, noise from the nearby market, and the small matter that the curtain doesn't fit the rail in his home office. So the window is out. His question is basically two questions wearing a coat. What can he realistically build out of this curtain, and does a heavy noise-blocking curtain actually help a vocal take more than an ordinary blanket?



Herman

And there's a real tension underneath it, because the folk wisdom he's noticed is true. When people build makeshift vocal setups, the stuff that works is soft furnishings. Curtains, duvets, blankets. But the reason it works is not the reason anyone thinks.



Corn

Before we build anything, we need to split two things that sound like the same thing and aren't.



Herman

Blocking and absorbing.



Corn

Daniel is valuing the curtain for the wrong property. Sound-blocking is the marketing, but blocking is not what fixes a vocal take.



Herman

Absorption is. And they're measured in completely different units, by completely different labs, for completely different problems. Absorption coefficient runs from zero to one and tells you how much of a reflection a material soaks up inside the room. Transmission loss, the STC rating you see on windows and doors, tells you how much sound gets through a partition. Different numbers, different questions.



Corn

An analogy that stuck with me: absorption is what a towel does to a splash inside the bathtub. Blocking is what the bathtub wall does to the splash. A great towel is a terrible bathtub wall.



Herman

And you can't rate a towel as a wall, which is exactly what the curtain industry keeps quietly doing.



Corn

So the episode splits naturally. First, why the curtain can't block, which is physics and it's unforgiving. Then what it can absorb, which is where it gets good news. Then why soft furnishings work for voices specifically, which is the part almost everybody gets wrong.



Corn (continued)

Then what Daniel actually builds and where the mic goes in it.



Herman

Can I say the punchline early?



Corn

You're going to anyway.



Herman

The curtain is worth keeping. It's just worth keeping as an absorber, not as a blocker. It's a decent absorber, actually. Possibly a very good one, depending on the fabric.



Corn

The label lied and the object didn't.



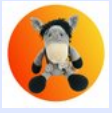
Herman

That's... yes, actually, that's the cleanest version of it.



Corn

Start with the blocking claim then, because that's the one Daniel is valuing and it's the one that collapses.



Herman

It collapses on something called the mass law. Transmission loss through a single panel follows a logarithmic relationship. Every doubling of the panel's surface mass, or of the frequency, buys you about six decibels. Which means twelve decibels costs you four times



Herman (continued)

the mass. There's no cheat. A worked example: a panel at ten kilograms per square metre gives you roughly twenty-seven decibels at five hundred hertz. Double that mass to twenty kilos, you're at about thirty-three.



Corn

And this is why real soundproofing looks the way it does. When you see studio construction, it's double walls, mass-loaded vinyl, decoupled studs. Nobody's hanging fabric. Mass law is why a recording studio is a building project and not a shopping trip.



Herman

Right, and it's also why the mass law is logarithmic in the cruelest way for consumers. People intuit linear. They think twice the curtain, twice the quiet. Twice the curtain is six decibels, and we'll get to what six decibels actually sounds like in a minute, which is less than anyone hopes.



Corn

And a curtain weighs...



Herman

That's the punchline. Quiet Curtains, a company that sells exactly this kind of product, lists their heaviest lining at about one point three kilograms per square metre. Rated STC seventeen. Their lighter lining is STC thirteen.



Corn

Compare that to something.



Herman

A single-pane window. The bad window everyone replaces. STC twenty-seven.



Corn

The curtain that's worse than the window it would hang in front of.



Herman

Substantially worse, yes. Ten points on that scale is not a rounding error.



Corn

And STC seventeen is a lab number for the material.



Herman

Correct, and that's where it gets worse. That rating assumes the panel is doing its job as a panel. A curtain on a domestic rail is never sealed. The gap around the edges is the dominant leak. Sound doesn't go through the curtain, it goes around it, happily, at the speed of... well, sound. One technical editorial board put it flat: soundproof curtains do not soundproof a room. They absorb inside the room, which reduces echo and makes speech clearer, but they block very little coming through a window. If your problem is traffic or a loud street, a curtain helps only slightly.



Corn

It's the same reason a door is the weak point of every party wall. You can build a beautiful massive wall and hang a hollow-core door on it, and you've built a wall with a hole shaped like a door.



Herman

The curtain is a hole shaped like a curtain.



Corn

Daniel's problem is a market.



Herman

Then it helps slightly, at generous.



Corn

There's a perceptual scale that makes this concrete, right?



Herman

Quiet Curtains publishes one, and I like it because it's honest about human ears. One decibel, imperceptible. Three, just perceptible. Five, clearly perceptible. Ten, substantial. That's the whole ladder. So even if the curtain over the window performed to its rating, Daniel might hear a couple of decibels of market. Below the just-perceptible line.



Corn

And that ladder is worth memorising for anyone buying acoustic anything, because it recalibrates your expectations. People see a product claiming eight decibels of reduction and imagine silence. Eight decibels is substantial, in the technical sense, and in a bedroom at two in the afternoon with a market outside, substantial still leaves you hearing the market.



Herman

He'd have a nicer-sounding room and the same vendors.



Herman

The money went into mass, the mass can't do the job, and the job it can do was never the one on the label.



Corn

So pivot. The blocking is dead. What does the same curtain do as an absorber?



Herman

Something respectable. Heavy velour drapery is the closest textbook analogue. Eighteen-ounce velour, hung flat against the wall: absorption of about point zero five at one twenty-eight hertz, point one two at two fifty-six, then point three five to point four five from five hundred hertz up. Hang the identical drape four inches off the wall and the numbers jump: point three three at two fifty-six, point four five at five hundred, point five two at one kilohertz, point five zero at two thousand.



Corn

The air gap roughly triples it at two fifty-six.



Herman

Same fabric, same wall, just a gap. The gap acts like extra thickness. If a sound wave has to pass through the material, bounce off the wall, and pass through again at a different angle, the material gets two chances at it. Costs nothing. You're building a frame anyway, so the gap is free.



Corn

That's the most useful sentence of the episode so far and it's about nothing.



Herman

Free performance is the best kind. Now, how this stacks against commercial products: the lab results for acoustic curtains cluster around NRC point four to one point zero depending on the face fabric. NRC, noise reduction coefficient, is just the average of absorption at two hundred fifty, five hundred, one thousand and two thousand hertz.



Corn

The speech band.



Herman

Deliberately. It's a rating for rooms where people talk and work. Velour face fabrics hit point eight five to one point zero. Velvet, point seven five to point nine. The plainer suedes sit around point five to point six five.



Corn

Now the comparison Daniel actually asked for. The blanket.



Herman

This is my favourite data point in the whole research. A blanket manufacturer tested their own moving blankets, decent ones, better than the cheap rental blankets, and got NRC zero point three. Their purpose-built sound blankets tested at zero point eight. Same factory. Their own conclusion, verbatim energy: products with NRC below point five are not considered acoustic products, so advising people to use a less effective product is simply misleading.



Corn

They cited themselves into the argument against themselves.



Herman

For honesty in the moving blanket industry, this is the peak. But it gives Daniel his answer in one figure. A heavy acoustic curtain in the point five to point eight five range is absorbing roughly two to nearly three times what an ordinary moving blanket does, in exactly the band his voice lives in.



Corn

The duvet?



Herman

No published lab number for a domestic duvet. I looked hard enough to be sure it isn't sitting somewhere obvious. Closest measured analogues are heavy drapery and one-inch fibreglass board, so I'd reason from thickness, density and the air gap rather than pretend. My guess is a good duvet, hung loose, lands somewhere between the moving blanket and the curtain. Thick, low density, fibrous, and almost always draped with air behind it, which is the right profile.



Corn

Which is a nice way of saying the folk wisdom about duvets is directionally right even though nobody's ever measured one in a lab. The bedroom engineers got there by ear.



Herman

The best acoustic instrument most people own is the play button. Record a sentence, hang a duvet, record it again. That A/B costs nothing and settles more arguments than spec sheets.



Corn

Say what the ceiling is. How good do soft goods get?



Herman

One-inch unfaced fibreglass board, flat on the wall, which is what proper treatment looks like. Point zero five at one twenty-five hertz, point two six at two fifty, point six three at five hundred, point eight eight at one thousand, point nine seven at two thousand. That's the professional reference. And notice the first number: even real treatment absorbs almost nothing at one twenty-five hertz.



Corn

Which matters later, because of the voice.



Herman

Hold that thought, because it's the hinge of the whole thing.



Corn

The curtain is basically the wrong tool for the job, but it might still absorb something useful.

L

Larry

Friends, are you tired of sound blocking when what you really need is sound absorbing? Then meet the Absorbatron Two Thousand, a heavy acoustic curtain you hang around your toddler, not your window, and it soaks up every reflection in the room while your market noise politely leaves. The price was nine hundred and ninety nine, now it is seven ninety nine, now it is four ninety nine, and for the next thirty seconds only I will throw in a matching duvet, a single pane window, and a neighbor who does not own a stereo.

L

Larry

But wait, the price just dropped again to two ninety nine, and I am adding a bass trap shaped like a loaf of bread and a certificate proving your absorption coefficient is a perfect one point zero, which is not how numbers work but I do not care. This offer ends before I finish describing it, so it has already ended. The Absorbatron Two Thousand, because blocking is not absorbing, and neither is this.



Herman

So fibreglass board at one twenty-five hertz, point zero five. Practically transparent down there.



Corn

Why does a human voice not care?



Herman

Because of what a voice is. A vocal, spoken or sung, has very little energy below about a hundred hertz. The fundamental of most male speech sits around one hundred to one fifty, but the energy, the part that carries and reflects and makes a room sound roomy, is the midrange and up, the harmonics, the sibilance, everything from roughly two fifty hertz into the kilohertz band. That's exactly the window where soft goods go from mediocre to good.



Corn

The blanket's weakness is a frequency the voice barely produces.



Herman

Black Ghost Audio put it well. Moving blankets aren't thick enough to absorb bass, but a vocalist isn't capable of producing low-end frequencies with enough energy to resonate through the room anyway. For treating a mixing room, blankets are less than ideal. For a vocal booth, they're perfect. Same blanket, opposite verdict, and the only thing that changed is the source.



Corn

That's why the folk wisdom confuses everyone. The blanket works, so people conclude blankets work generally, then they put them in a drum room and wonder why the room still sounds like a municipal swimming pool.



Herman

And there's a second thing soft goods do that nobody names: they kill flutter echo. Two parallel hard walls trap a fast, ringing reflection. You hear it when you clap in an empty room, that metallic zing. Covering one of the two surfaces with a heavy drape cuts the high-frequency bounce that causes it. You don't need to treat the whole room. You need to break one of every pair.



Corn

Which is why the classic advice is never to treat two facing walls identically anyway. It's also, if you want a fun fact, why old recording studios were built with non-parallel walls. Abbey Road's studios have almost no right angles between facing surfaces. Same trick as a drape over one wall, just executed in brick.



Herman

Now do the rogues' gallery. Egg cartons.



Herman

Egg cartons measured NRC zero point three two in a twenty seventeen reverberation-room test. The authors wrote that this proves they are not good absorptive materials. Zero point three two is moving-blanket territory, except an egg carton is cardboard, so it's a moving blanket that also doesn't cover anything.



Corn

And it comes with a lifetime supply of eggs you have to eat first.



Herman

The foam mattress toppers are the same story told differently. One-inch open-cell polyurethane peaked at zero point nine two at three point one five kilohertz, which looks spectacular, but measured zero below two hundred fifty hertz, and putting a twenty-five millimetre air gap behind it changed nothing. Nothing. The gap trick works on dense heavy fabric. On foam it does nothing.



Corn

Every DIY fix absorbs point zero nine or less at one twenty-five hertz.



Herman

And none of that matters for a voice booth and all of it matters for a mixing room. That's the split. Daniel's doing speech, so he's on the right side of the split for once.



Corn

So let's build. What does he actually make?



Herman

The consensus form, if you read the builds people document, is a three-sided enclosure with a ceiling. Not a window covering. The classic budget version uses three moving blankets, grommets, command hooks, drywall anchors, screw eyes and carabiners, and comes in under eighty-five dollars, about forty-five minutes of work. The geometry: you stand in a corner facing into the room, back to the corner, one blanket suspended from the ceiling in front of you, one on each wall behind. The blanket in front absorbs the first reflections, the ones behind catch the late ones, and the angles between them break the flutter.



Corn

Corners are doing real work there.



Herman

Two walls for free. You only have to hang the third surface.



Corn

And the corner gives you non-parallel surfaces by default, usually. Two walls meeting at ninety degrees, and you facing out at some angle that isn't square to either. The geometry is accidentally right.



Herman

The PVC frame alternative?



Herman

Inch-and-a-half schedule forty pipe with three-way elbows, eighty inches tall, forty-eight wide, seventy-six inch verticals, under a hundred fifty dollars. Builders report the one-inch pipe is too flexible. Once you hang a heavy drape off a frame, the frame becomes a structural question, and this is where I'll pause, because Daniel's curtain is not a moving blanket.



Corn

It's heavier.



Herman

Much heavier, and that changes the build. A tension rod or a light frame will bow. He wants a proper clothes rail or the thick PVC. And there's a placement decision that matters more than the frame: where does the one big heavy piece go? My answer is the back wall. The surface directly behind the mic. That's where the strongest, earliest reflection comes from, off the wall behind you while you're facing the mic. The curtain is his best absorber, so it goes where the worst reflection originates. Duvet and blankets take the sides and the ceiling.



Corn

And it hangs a few inches off the wall, not flat.



Herman

The gap is the free upgrade. Two fifty-six hertz to two kilohertz, roughly triple at the low end of that range. He's building a frame anyway. Pressing it flat against drywall wastes the one thing the frame gives him for nothing.



Corn

Sizing?



Herman

The builds that get documented sit around one metre wide, two point three tall, one and a half deep. And the advice repeats itself across people who've done it: not too small, or it's a nightmare to sit in for hours, not too big, or you've created more room to treat. Not square, a rectangle or an odd shape. And the ceiling, which everyone forgets until they hear their own ceiling in the take.



Corn

Floor?



Herman

A rug, a yoga mat, a bath mat under the feet. Hard floors are the one surface people leave reflective while treating everything else. And ventilation, for real. People build these, close themselves in, and discover within ten minutes that a small enclosed box with a human in it is a greenhouse. Leave a small gap somewhere low.



Corn

Daniel's recording long TTS sessions, not a three-minute take.



Herman

Then ventilation isn't a footnote for him, it's a design constraint. An hour of scripted reading in a sealed blanket box, he'll be narrating his own heatstroke.



Corn

Ezra and the market. Two noises or one?



Herman

Two, and I think this distinction is where most home-recording money gets wasted. The toddler is intermittent and unpredictable, a transient. No curtain on earth fixes a transient, because a transient doesn't care about averages. You fix a toddler with scheduling and a second take. The market is closer to continuous, a noise floor, and that you can actually work on: mic distance, where you point the null, a heavy absorber behind the mic. People conflate the two problems, fail to fix the first with gear bought for the second, and conclude acoustics is a scam.



Corn

And there's a third category hiding in there, which is the predictable intermittent noise. The bin lorry, the school run, the neighbour's Tuesday bass. Those you don't treat, you schedule around. It's only the unpredictable stuff that costs you takes.



Herman

Distance first. How big a lever is it really?



Herman

The single biggest one, and it's free. Direct sound follows the inverse square law. Double your distance from the mic and the voice drops about six decibels. Reflected sound barely changes, because it arrives from everywhere. So moving from fifteen centimetres to thirty doesn't just make a quieter take, it changes the ratio of voice to room by roughly six decibels. That's the difference between a usable vocal and one that sounds like a bedroom.



Corn

For ASR training data, which end does he want?



Herman

Close. Shure's placement table for the Beta eighty-seven A says under fifteen centimetres, on axis, gives you robust sound, emphasized bass, maximum isolation from other sources. Fifteen to sixty gives a more natural sound with reduced bass. For TTS he wants the clean, dry, intimate capture, so close in, with a pop filter, and let the training data be consistent. A roomy, distant-sounding dataset teaches the model the room.



Corn

He dislikes bass-heavy proximity sound anyway.



Herman

Then he splits the difference at fifteen to twenty and leans on the null. Which is the other free tool. A cardioid mic has a near-deaf point directly behind it, a hundred eighty degrees off axis. Point that at the window, at the market, and you get real rejection for nothing.



Corn

How real?



Herman

Less than the polar plot suggests. Paul White in Sound On Sound made the point that cardioid sensitivity doesn't fall by much by the time you're ninety degrees off axis, and the only place that approaches being completely deaf is a very narrow angle directly behind. The side arrivals get through, and they arrive sounding dull, because the high-frequency response falls off-axis. So the pattern is a filter, not a wall.



Corn

The curtain behind the mic is catching what the pattern misses.



Herman

That's the actual arrangement. Null at the window, heavy curtain hanging in that same rear zone, catching the leakage and the reflections together. It's also why reflexion filters sit behind the mic and not in front, which confuses people until they think about where the mic is actually listening.



Corn

You've built things like this.



Herman

The DJ years, sort of. I once diagnosed a venue over the phone from a description of the ceiling. But booths, no. Corn, can I ask you something practical? You're the one in that flat who ends up using whatever gets installed. If Herman rigs a PVC corner with a heavy drape off it, what breaks first?



Corn

The joins. Every elbow in that pipe is a decision someone made at eleven at night. Also the ceiling anchor, whoever's drilling it. My family has spent several million years finding out what a ceiling will actually hold, and the answer is always less than the bracket assumes. People over-engineer the bracket and under-engineer the thing holding the bracket.



Herman

So anchors into something structural, not just drywall.



Corn

Hannah would insist anyway. She's flagged the construction quality of that building before. If the walls are thin enough to fool a diarizer, the anchors are going into something careful.



Herman

Then the curtain goes on a rail that's screwed to something honest, with a gap behind it, and Ezra's nap schedule becomes part of the signal chain.



Corn

Which is the equipment no one sells you.



Herman

We did a whole episode once on whether an ageing voice ruins a fine-tune. Same corner of the world: the room and the mic are half the dataset, the voice is the other half, and neither forgives being ignored.



Hilbert

Herman, where did you get that idea about the gap? The spacing. Did you measure it or are you repeating something?



Herman

Published absorption tables, Olson's work mostly. Measured on the drape, not by me.



Hilbert

Because I hung drapes for a living in the mid eighties and the gap isn't the half of it. You're all talking about hanging this thing flat. A heavy drape hung flat is half a drape.



Corn

In what sense, half?



Hilbert

The fold, Corn. A drape wants to hang in deep pleats. You hang it from a proper theatrical batten with tie-line, never grommets, grommets pinch the pleat and kill the fold. Gathered, a drape has twice the fabric in the same width, and it's angled to itself a hundred times over. Sound goes into the folds and doesn't come out. I did a winter at the Bristol Hippodrome, replacing a house drape that had gone stiff, and the old flyman, Reg, drummed it into me. The fabric is only working where it's folded.



Herman

Because there's no lab number for pleating. The tables measure fabric hung flat or flat with a gap. Nobody publishes the gathered case.



Hilbert

No, they wouldn't. Labs hang things flat because labs hang things flat. You want my conviction, it's that a gathered drape beats a flat one and the gap and the fold stack. I have no number and I don't need one.



Corn

You'd essentially be getting the air gap inside the fabric instead of behind it.



Hilbert

In among it. Yes. I've kept one thing from that Bristol job. It's here.



Corn

That's a brass curtain ring.



Hilbert

Off the old house drape. Been in my pocket forty years. The only honest piece of hardware in this entire conversation.



Herman

Honest how?



Hilbert

Grommets lie. They hold the fabric flat and call it hung. The ring lets the fabric choose its own fold.



Corn

Then Daniel shouldn't gather his curtain onto a PVC frame stretched taut. He should hang it loose, over-width, so it pools into pleats on the rail.



Hilbert

Over-width. That's the phrase I couldn't find. If the rail is two metres, give it three metres of drape and let it be a drape.



Herman

So the rig is the corner frame, the curtain gathered as the back wall, a hand's width off the wall, duvet on the sides.



Hilbert

And don't torque the elbows getting it square. It was never going to be square. Corn said that already, about the angles.



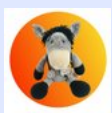
Herman

He did.



Corn

The one thing, then. If you take one thing from this episode: the curtain was sold as a blocker and it's an absorber, and every number we walked past today says the second job is the real one. Two to three times a moving blanket in the speech band, for free, in a fabric Hannah was about to take to the tip.



Herman

And it earns that number only if it hangs loose and off the wall. Flat against drywall, it's a decoration with opinions.



Corn

The thing I'd leave Daniel with is the gap between what a product says it does and what it does. That gap is where most home-recording money gets spent, twice, once on the wrong product and once replacing it.



Herman

The wife was half right, by the way. Bin it and you'd have lost a good absorber. Keep it and expect quiet from the market and you've kept the wrong promise.



Corn

If Daniel gets nothing else out of the cupboard: point the mic's deaf side at the window, get close, and let the curtain do the one thing it's actually good at.



Herman

Thanks as always to Hilbert Flumingtop, our producer, for keeping the desk running through all of that. If this was your kind of episode, go back for episode four, If Your Voice Ages, Does Your Fine-Tune Become Useless; and episode two, Local STT For AMD GPU Owners. This has been My Weird Prompts, the human-AI collaboration podcast. If the show's been worth your while, a review wherever you listen helps more than you'd think.



Corn

We'll be back soon. See you tomorrow.

SOURCES

What the research for this episode read before the script was written. Primary sources first.

1. **Shure Beta 87A User Guide, vocal placement table (15 cm vs. 15 [primary]**
60 cm). Retrieved 2026-11-21.
https://www.shure.com/en-US/docs/guide/BETA87A

2. **Shure SM58 User Guide, aim the microphone toward the desired sound source… and away from unwanted sources. Retrieved 2026-11-21. [primary]**
https://www.shure.com/en-US/docs/guide/sm58

3. **Valley Acoustics, Do Moving Blankets Work for Acoustics? (absorption tables, mass-law caveat, egg-carton and foam data, fire-safety note). Retrieved 2026-11-21.**
https://www.valleyacoustics.com/blogs/news/moving-blankets-egg-crates-acoustics

4. **Quiet Curtains, Lab Tests (STC 13/17 lining specs, NRC ranges by face fabric, dB perception scale). [primary**
manufacturer lab data] Retrieved 2026-11-21.
https://www.acoustic-curtains.com/lab-tests/

5. **Gearspace forum thread, moving blanket NRC 0.3 vs. sound blanket NRC 0.8 (G-75 method). Retrieved 2026-11-21.**
https://gearspace.com/threads/who-makes-the-best-blankets-for-sound-absorbtion.482003/

6. **VocalBoothToGo, Comparison of Moving Blankets to Producer's Choice Sound Blankets, posted 2012-09-07. Retrieved 2026-11-21.**
https://vocalboothtogo.com/sound-absorption-comparison-of-moving-blankets-to-sound-blankets/

7. **VocalBoothToGo, Sound absorption test result and NRC for double layer blankets, posted 2024-09-10 (Riverbank Acoustical Laboratories, NVLAP-accredited). Page returned HTTP 403 on full read; only the search snippet was available. Retrieved 2026-11-21.**
https://vocalboothtogo.com/double-layer-acoustic-blankets-certification-sound-absorption-test/

8. **Insulate Window Technical Editorial Board, Soundproof Curtains: Do Acoustic Curtains Work?, published 2026-10-02. Retrieved 2026-11-21.**
https://insulatewindow.com/soundproof-curtains

9. **NRC-IRC Canadian Building Digest CBD-239, Factors Affecting Sound Transmission Loss (mass law equation). Retrieved 2026-11-21.**
https://web.mit.edu/parmstr/Public/NRCan/CanBldgDigests/cbd239_e.html

10. **INSUL 10.0 User Guide, Airborne Single Panels Overview (mass law, 6 dB per doubling). Retrieved 2026-11-21.**
https://docs.insul.co.nz/v10/SoundInsulationTheory/Airborne-SinglePanels-Overview/

11. **Random Acoustics, Airborne Sound Insulation: Mass Law, Rw, DnT,w and Booths (10 kg/m² 27 dB worked example). Retrieved 2026-11-21.**
https://randomacoustics.de/acoustics/enclosures-and-insulation

12. **Sturgis, Sound Control for Fenestration Products (limp mass law, coincidence, mass-air-mass resonance). Retrieved 2026-11-21.**
https://www.stergis.com/content/downloads/Stergis%20STC%20Guide%20and%20Explanations.pdf

13. **Soundproofing Dude, Best Mass Loaded Vinyl (1 lb MLV ≈ STC 27). Retrieved 2026-11-21.**
https://soundproofingdude.com/best-mass-loaded-vinyl-brands/

14. **Black Ghost Audio, How to Build a DIY Vocal Booth for Under $85 (materials list, corner geometry, blanket placement rationale). Retrieved 2026-11-21.**
https://www.blackghostaudio.com/blog/how-to-build-a-diy-vocal-booth-for-under-85

15. **Vox Storia, How to Build a Simple Voice Over Booth With Moving Blankets (materials, shape, ventilation, floor treatment, expectations). Retrieved 2026-11-21.**
https://www.voxstoria.net/the-vox/building-your-first-voice-booth

16. **ShunterVO, Building my first portable vocal recording booth space for voice-over (W100 × H230 × D150 cm dimensions). Retrieved 2026-11-21.**
https://www.shuntervo.com/post/building-my-first-voice-acting-vocal-booth-pvc-frame-acoustic-blankets

17. **How to Build a Vocal Booth**
$135, COMPLETE GUIDE, EASY DIY Recording Sound Booth (1½ schedule 40 PVC, 80×48, 76 verticals, zip ties/grommets). Retrieved 2026-11-21.
https://www.youtube.com/watch?v=Af6g-Qei5TA

18. **Paul White, Sound On Sound, Why are Reflexion Filters used behind the mic...?, published January 2014. Retrieved 2026-11-21.**
https://www.soundonsound.com/sound-advice/q-why-are-reflexion-filters-used-behind-mic-if-mic-picks-sound-front

19. **Meshplugins, Vocal Mic Placement: Distance and Angle (inverse square law, 1530 cm ≈ 6 dB voice-to-room change). Retrieved 2026-11-21.**
https://shop.meshplugins.com/blogs/the-hidden-sauce/mic-placement-for-vocals

20. **SYNCO, Cardioid mic: Guide to definition, characteristics, placement, and use (180° null). Retrieved 2026-11-21.**
https://www.syncoaudio.com/blogs/news/cardioid-mic-guide

21. **Recording64, The 'Null Point' Of Your Microphone, 2014-09-05. Retrieved 2026-11-21.**
http://www.recording64.com/2014/09/05/the-null-point-of-your-microphone/

22. **MusoZone, Cardioid patterns and room sound (does not create a soundproof bubble). Retrieved 2026-11-21.**
https://musozone.com/guides/cardioid-patterns-and-room-sound/

23. **Sound On Sound, 20 Tips On Recording Vocals (cardioid vs. omni, direct-to-room ratio). Retrieved 2026-11-21.**
https://www.soundonsound.com/sound-advice/20-tips-recording-vocals

24. **Digital Mixing, How to position a vocal microphone, dated 2026-10-15 (15**
25 cm starting point). Retrieved 2026-11-21.
https://digital-mixing.com/en/features/19829-how-to-position-a-vocal-microphone-distance-angle-proximity-effect-and-pop-filter-15-10-2026/

25. **The Curtain Lab, Acoustic Curtains Explained (soundproofing relies on mass, isolation, airtight seals). Retrieved 2026-11-21.**
https://thecurtainlab.com.au/acoustic-curtains-explained-how-they-reduce-noise-and-what-to-expect/