



Complete Acoustic Test
Environment Solutions

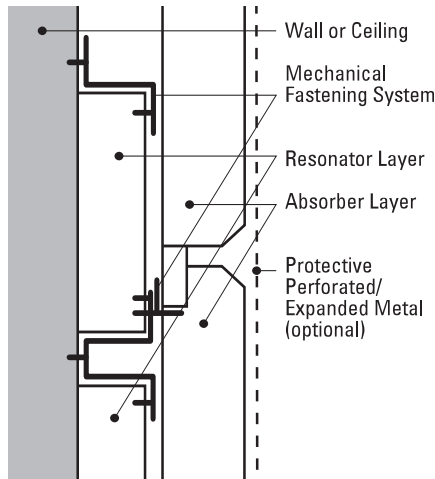
The pinta advantage from concept to certification

To achieve free-field conditions within an acoustic test environment the testing area must be free from reverberation, feedback and resonance. pinta creates optimal full anechoic and hemi-anechoic environments for the most precise testing and benchmarking in aerospace, automotive, electronics, research, government and hard goods manufacturing. In addition to our traditional wedge acoustic solution, our new nontraditional system saves between 30% and 50% of available room volume—a great retrofit solution for an existing space.

pinta offers a complete solution—from facility design through final certification—with products and expertise to meet the most demanding needs. Our traditional solution, SONEX® Unilayer System and our new space-saving SONEX Trilayer System are designed to meet unique requirements for room and test specimen size, cutoff frequency and your precision test method. Our demanding test environments have exceptional performance from the desired cutoff frequency through the highest frequencies. Offering two decades of experience, pinta's full and hemi-anechoic chambers are the preferred choice for industry-leading companies worldwide.



Hemi-anechoic chamber at Continental Brakes in Hannover, Germany contains the SONEX Trilayer System with SONEX Flat Panels.



SONEX Trilayer System

The SONEX Trilayer System allows extraordinary space savings thanks to an innovative combination of resonator, barrier and absorptive material layering. This system effectively meets a variety of testing needs and can be easily adapted to existing rooms or areas with limited space. To meet your cutoff frequency and test method requirements, SONEX Trilayer is available in three absorption layer options, all are constructed using pinta's innovative Class 1 fire-rated willtec® foam.



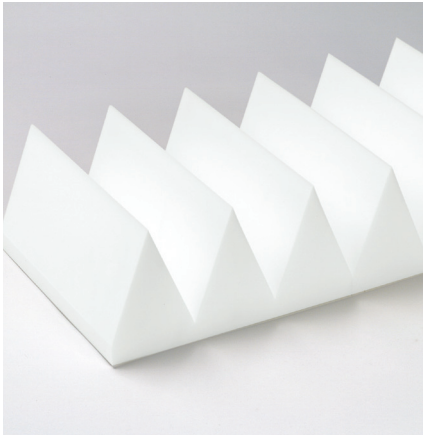
Made from pinta's willtec acoustical foam, SONEX Pyramid Panels, as the top absorber layer in a SONEX Trilayer System, provide cutoff frequencies of 63 Hz or higher.

SONEX Trilayer System	Cutoff Frequencies	Test Standard	Thickness of Entire System
with SONEX Flat Panel	50 Hz or higher	Measurement according to ISO 3744 engineering method, acceptable for ISO 3745 precision method*	4" to 10" (10 to 25 cm)*
with SONEX Max Wedges	50 Hz or higher	Measurement according to ISO 3744 engineering method, ISO 3745 precision method	24" to 61" (61 to 155 cm)*
with SONEX Pyramid Panels	63 Hz or higher	Measurement according to ISO 3744 engineering method, ISO 3745 precision method	10" to 24" (25 to 61 cm)*

*Exact dimensions depend on the desired cutoff frequency of system selected.

SONEX® Unilayer System

The long-established workhorse of the acoustic test chamber, SONEX Unilayer System utilizes either SONEX Super or SONEX Max Wedges. The wedges, constructed from pinta's innovative willtec® foam, have an increased surface area for exceptional acoustical performance. They are lightweight and install seamlessly for a continuous panel look.



SONEX Wedges provide exceptional low- to high-frequency sound absorption.

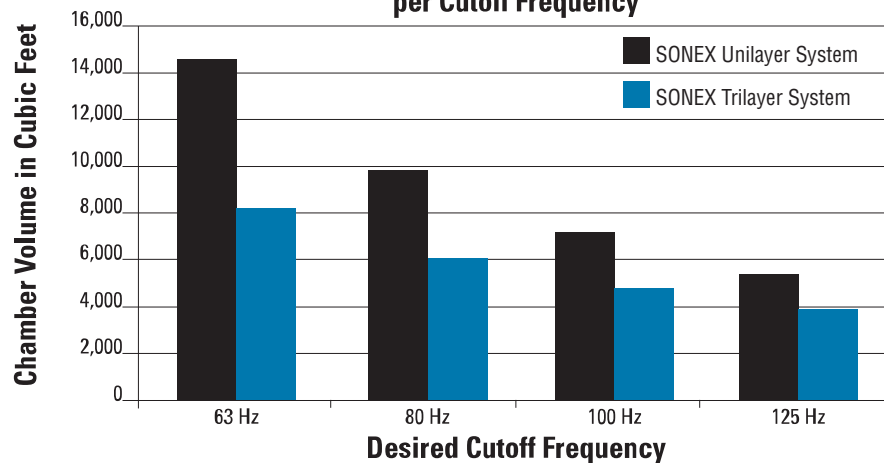


SONEX Wedges can be used to create full anechoic or hemi-anechoic chambers.

SONEX Unilayer System	Cutoff Frequencies	Test Standard	Wedge Thickness
with SONEX Max or SONEX Super Wedges	63 Hz or higher	Measurement according to ISO 3745 precision method	6" to 61" (15 to 155 cm)*

*Exact length depends on the desired cutoff frequency of system selected.

Room Volume of Acoustic Test Chambers per Cutoff Frequency



Depending on the desired cut off frequency, SONEX Trilayer Systems save between 28 and 44 percent of a room's available testing area.

The power and versatility of willtec®

One of pinta's clear advantages is our willtec foam that appears in a variety of styles. willtec is Class 1 fire-rated and can be used in virtually any application. It's amazingly lightweight with incredible acoustic control abilities. Plus, it is resistant to humidity, fungus and microbial growth for long-lasting performance. There is simply no better solution for improving sound quality in acoustic test environments.

References

Client	Purpose of Facility	Cutoff Frequency	Facility Type	pinta Solution
Sony®	Research voice recording systems	125 Hz	Hemi-anechoic	SONEX® Trilayer System with SONEX Flat Panels
Müller-BBM	Acoustical engineering and research	200 Hz/80 Hz	Hemi-anechoic	SONEX Unilayer System with SONEX Wedges
Continental Tires	Tire research	125 Hz	Hemi-anechoic	SONEX Trilayer System with SONEX Flat Panels
Airbus Industries	Commercial aircraft component testing	125 Hz/80 Hz	Full anechoic	SONEX Unilayer System with SONEX Max Wedges
Airbus Industries	Commercial aircraft component testing	80 Hz	Full anechoic	SONEX Trilayer System with SONEX Flat Panels
NASA Langley Research Center	Space and aircraft component testing	100 Hz	Hemi-anechoic	SONEX Unilayer System with SONEX Wedges
NASA Langley Research Center	Acoustical research of components	100 Hz	Full anechoic	SONEX Unilayer System with SONEX Wedges
Continental Brakes	Road simulation	50 Hz	Hemi-anechoic	SONEX Trilayer System with SONEX Flat Panels
Stihl	Chainsaw Testing	100 Hz	Hemi-anechoic	SONEX Trilayer System with SONEX Flat Panels

Physical Data—willtec® Foam

Material	Open-cell melamine-based foam
Density	0.5 to 0.7 lbs./cubic ft. (ASTM D3574-77)
Long-Term Service Temperature	302° F
Fire Resistance	Class 1 per ASTM E 84 (all finishes), Meets UL 1715 (natural willtec)
Flame Spread per ASTM E 84	Natural: 5 Painted: 10 HPC-coated: 15
Smoke Density per ASTM E 84	Natural: 50 Painted: 10 HPC-coated: 150
Microbial Growth	Passes UL 181, section 11
Fungus Resistance	Rating 0 per ASTM G21
Finishes	Natural (white and light grey), Painted or HPC-coated

The power and versatility of willtec

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pinta acoustic, inc. manufactures a broad range of acoustical materials including:
 CONTOUR® Ceiling Tiles; HARMONI Ceiling Tiles; WHITELINE® Ceiling Tiles; SQUARELINE® Metal Ceiling Tiles;
 BIOLINE® Wood Ceiling Tiles; SONEX® Baffles and Panels; SONEX Clean Baffles, Panels and Ceiling Tiles; SONEX NoiseBuster®
 Electronic Noise Canceling Earmuff; FABRITEC Wall Panels; PHONSTOP™ Ceiling and Wall Tiles; WHISPERWAVE™ Panels,
 Baffles, Ceiling Clouds and Awnings; PROSPEC® Barriers; Foams and Composites; PROSPEC Decibel Drop™ Viscoelastic
 Damping Compound; and pinta Ceiling Grid Systems

