STC SOUND CONTROL

Comprehensive Guide to the STC ACOUSTIC PAD[™]

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Simple, High-performance, Cost-effective Acoustical Products for Buildings

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ABOUT **STC SOUND CONTROL**

OUR START

STC Sound Control was founded by Paul Battaglia - an architect and professor of architectural acoustics – whose passion for and expertise in sound control led to the invention of unique, patented products that address long-standing needs in building markets.

A graduate of the MIT School of Architecture & Planning, Paul's experience spans 40 years of architectural practice and 30 years of acoustic education as a professor in the Department of Architecture, University at Buffalo. A member of the American Institute of Architects (AIA) and the Acoustical Society of America (ASA), he has presented multiple cited papers on acoustics.

As an accredited instructor for the ASA, Paul has provided acoustics trainings to some of the top architecture firms in America, including Gensler, OMA, Cooper Carry, Page, GFF, KTGY, Humphreys, and many others.

WHAT WE DO

STC Sound Control designs and manufactures products that easily and inexpensively create acoustic comfort.

Whether it's reducing sound from adjoining rooms, absorbing reverberant sound within a room, or minimizing sound from floors above, our products reduce noise-related annoyances in all kinds of settings – from apartments and hotels, to restaurants and office spaces. For architects, developers, contractors, and building owners, we provide solutions that are easier to install and more cost-effective than leading alternatives, while also exceeding market and building code standards for acoustic performance.

Headquartered in Buffalo, New York, STC Sound Control manufactures its products in partnership with TMP Technologies – a multinational market leader in foam, rubber, plastic, and metal fabrication – and currently serves customers across the continental United States.

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OUR MISSION

PRODUCT DESIGN APPROACH

Our mission to provide better solutions for sound control is directly reflected in our product design approach. STC Sound Control makes acoustical products for buildings that are:

SIMPLE, HIGH-PERFORMANCE, and COST-EFFECTIVE.



Reduced installation complexity

We design with builders in mind. As a result, all of our products reduce complexity in the installation process. This includes eliminating the need for specialized tools, preventing mess, decreasing install time, or eliminating failure risks like moisture.

Best-in-class acoustic ratings

We pride ourselves on our acoustical know-how and technical background. As a result, we do not develop products unless they have a superior acoustic rating (STC, IIC, and NRC) compared to the existing market standard.

Clear winner on price

We understand the intense price pressures that contractors and developers experience. As a result, we only develop solutions where we can beat market standard pricing by at least 25% (and often by much more).



OUR PRODUCT PORTFOLIO





SOLUTION FOR NOISE FROM FLOORS OVERHEAD

THE PROBLEM OF IMPACT NOISE

A key source of noise is activity from floors above, as sound travels through the floor structure and radiates into the space below. This is known as impact noise or footfalls, which is measured by a standard called Impact Insulation Classification (IIC).

Different elements of the floor and ceiling construction contribute to isolating noise in various amounts - measured by a standard called Δ IIC ("Delta IIC"). Beyond normal deck construction, some form of acoustic insulation is generally required to provide additional Δ IIC to bring a building up to code.

In multifamily residential and hotel construction, building codes require an IIC-50 rating. Simple, High-performance, Cost-effective Acoustical Products for Buildings

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CHALLENGES OF MARKET STANDARD SOLUTIONS

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The most common solution for providing the additional Δ IIC required by code is an acoustical mat (in concrete construction) combined with (in wood construction) a gypsum cement underlayment.

However, gypsum cement creates a host of issues for construction, including the introduction of moisture, which poses risks of cracking, freezing, and mold. Meanwhile, the time needed for gypsum cement to dry can cause delays in construction. Solutions such as cork, rubber, or extruded nylon filament mats are significantly more expensive.

STC Sound Control saw an opportunity to address these challenges with a better solution.

A BETTER SOLUTION

PRODUCT OVERVIEW

The STC Acoustic Pad is a patented neoprene rubber pad for flooring systems that reduces impact noise to floors below. It is the key component of STC Sound Control's designs for acoustic floor covering in wood and concrete decks.

SYSTEM OVERVIEW

The STC Acoustic Pad system utilizes these pads and a layer of wood panels – removing gypsum and continuous mats from deck construction. The result is a solution that is simple, highperformance, and cost-effective.







WHAT MAKES IT SPECIAL

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UNIQUE DESIGN

The STC Acoustic Pad's benefits are enabled by unique design:

- **NO GYPSUM:** No moisture is introduced to the building removing risks of cracking, freezing, mold, and delays caused by time to dry.
- **MATERIAL:** Neoprene is a dense and resilient rubber, giving it exceptional ability to isolate vibrations while also bearing loads from the floor above.
- **PROFILE:** A unique patented profile minimizes contact between the finish floor surface and the supporting structure, providing better acoustical performance than continuous mat systems at a fraction of the cost.



SUSTAINABILITY & NET ZERO GOALS

The pads' small size combined with the system's use of wood rather than gypsum cement also means that the STC Acoustic Pad system ranks very highly when it comes to sustainability.

Our solution offers net negative carbon emissions for the floor covering system, which – unlike other solutions – can help buildings achieve Net Zero goals.

ACOUSTIC PAD

Compared to acoustical mat systems, the STC Acoustic Pad system performs better on noise isolation, sustainability, ease of installation, risk reduction, comfort underfoot, and cost.

	STC SOLUTION	ACOUSTICAL MAT	
Noise Isolation	ΔΙΙC-23	ΔIIC-18 to 20	
Wood Frame (Compares to Gypsum Cement + Acoustic Mat)			
Install Risk	No moisture introduced to the building	Moisture introduces risk of cracking, freezing, & mold	
Install Time	Installs quickly prior to partitions	Time for gypsum to dry delays construction	
Carbon Footprint	NET NEGATIVE	11,029g/sf	
Cost / sf	~ \$1.58	~ \$2.81	
Concrete Frame (Compares to Gypsum Cement + Acoustic Mat)			
Comfort	System uses wood floor covering, which is more comfortable underfoot	Concrete is less comfortable and requires resilient flooring	
Cost / sf	~ \$1.70	~ \$3.35 - \$7.50	



WHAT STC CAN DO FOR YOU

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The STC Acoustic Pad provides a host of benefits for architects, developers, construction managers, and end-users.

We're here to answer your questions and provide any technical guidance required.

Contact us today to find out **how much you could save** on your next project, while making your building more **acoustically comfortable**.

Email: Phone: Web: info@stcsoundcontrol.com 716-839-0900 www.stcsoundcontrol.com



APPENDIX: INSTALLATION DETAILS & FAQ





WOOD FRAME: DECK DETAIL

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BEARING WALL DETAIL A

Contiuous OBS Bearing Strip,

23/32" T&G OSB Subfloor,

STC Acoustic Pads, 1/4" thick, -

BEARING WALL DETAIL B

1/4" thick

adhere to pads

adhere to deck



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WOOD FRAME

The STC Acoustic Pad system is an acoustic floor covering system that is installed over fire-rated or nonrated floor/ceiling assemblies. Ease of installation is achieved by adhering the pads to the deck and a wood panel.





NON-BEARING WALL DETAIL







METHOD 1: WOOD FRAMING NO PARTITIONS

This method installs the system continuously over the entire floor plate prior to any partitions.

STEP 1:

INSTALL BEARING STRIPS

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Nail ¼" thick bearing strips at perimeters and at load-bearing partition locations.

Note: Bearing strips are used wherever load-bearing walls or shear walls are to be installed – creating continuity of solid structure to transfer the loads. Cut strips from ¼" wood panels.



This method installs the system continuously over the entire floor plate prior to any partitions.

STEP 2: ADHERE PADS TO PANELS

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Brush / roll adhesive onto pads and place on panels at locations indicated. Precision is not necessary except at trailing edge locations of panels.

Note: For residential floor loads spacing of pads is 24" on center in long direction, 16" in short direction, with pads at 8" on center at square edge.



This method installs the system continuously over the entire floor plate prior to any partitions.

STEP 3:

ADHERE PANELS TO DECK

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Apply adhesive on bottom of pads and place panels on deck. Overlap pads at both trailing edges to support adjacent panels.

Note: Tongued edge is leading, groove is trailing, on $\frac{3}{4}$ " T&G panels. Adjust pads at trailing edges to project approximately $\frac{3}{4}$ ".



This method installs the system continuously over the entire floor plate prior to any partitions.

STEP 4:

CONTINUE IN SEQUENCE

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Continue adhering pads and panels on deck in sequence.

Note: Stagger panels in running bond for subsequent rows.







METHOD 2: WOOD FRAMING LOAD-BEARING PARTITIONS COMPLETED

This method installs the system after load-bearing partitions have been completed. STEP 1: LOAD-BEARING PARTITIONS & PERIMETER STRIPS

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Construct structural load-bearing partitions and install ¼" perimeter strips around each space adjacent to load-bearing partitions.

Note: Complete structural partitions to allow protected installations. Construct non-loadbearing partitions on top of acoustic floor covering system.



This method installs the system after load-bearing partitions have been completed.

STEP 2: ADHERE PADS TO PANELS

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Brush / roll adhesive onto pads and place on panels at locations indicated. Precision is not necessary except at trailing edge locations of panels.

Note: For residential floor loads spacing of pads is 24" on center in long direction, 16" in short direction, with pads at 8" on center at square edge.



This method installs the system after load-bearing partitions have been completed.

STEP 3:

ADHERE PANELS TO DECK Simple, High-performance, Cost-effective Acoustical Products for Buildings



Apply adhesive on bottom of pads and place panels on deck. Overlap pads at both trailing edges to support adjacent panels.

Note: Tongued edge is leading, groove is trailing, on $\frac{3}{4}$ " T&G panels. Adjust pads at trailing edges to project approximately $\frac{3}{4}$ ".



This method installs the system after load-bearing partitions have been completed.

STEP 4:

CONTINUE IN SEQUENCE Simple, High-performance, Cost-effective Acoustical Products for Buildings



Continue adhering pads and panels on deck in sequence.

Note: Stagger panels in running bond for subsequent rows.



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METHOD 3: CONCRETE DECK

This method is for installation on concrete deck.

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STEP 1: INSTALL PERIMETER STRIPS

Install ¼" perimeter strips at edges of floors, including exterior.

Note: Provide perimeter strips at edges of deck such as exterior walls, floor openings, and around columns. Cut strips from $\frac{1}{2}$ wood panels.



This method is for installation on concrete deck.

STEP 2: ADHERE PADS TO PANELS

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Brush / roll adhesive onto pads and place on panels at locations indicated. Precision is not necessary except at trailing edge locations of panels.

Note: For residential floor loads spacing of pads is 24" on center in long direction, 16" in short direction, with pads at 8" on center at square edge.



This method is for installation on concrete deck.

STEP 3: ADHERE PANELS TO DECK

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Apply adhesive on bottom of pads and place panels on deck. Overlap pads at both trailing edges to support adjacent panels.

Note: Tongued edge is leading, groove is trailing, on $\frac{3}{4}$ " T&G panels. Adjust pads at trailing edges to project approximately $\frac{3}{4}$ ".



This method is for installation on concrete deck.

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STEP 4: CONTINUE IN SEQUENCE

Continue adhering pads and panels on deck in sequence.

Note: Provide additional pads to support cut panel edges to fit around columns and other obstructions; stagger panels in running bond for subsequent rows.







FREQUENTLY ASKED QUESTIONS

FAQs

Q: What is the STC Acoustic Pad made of? And why does it have that particular profile?

A: The STC Acoustic Pad is made of neoprene, a dense and resilient rubber selected for its ability to isolate vibrations. Its profile is designed to minimize contact between the finish floor surface and the supporting structure – a critical goal for isolating impact noise. More than 99.8% of the floor area is isolated from contact with the structure with STC Acoustic Pad installations – continuous mat systems don't do that.

Q: How thick is the system?

A: The system is 1" thick $-\frac{1}{4}$ " pads, and $\frac{3}{4}$ " wood panel.

Q: What configurations are available?

A: STC Acoustic Pads are $1-\frac{1}{2}$ wide, $\frac{1}{2}$ high, and are available as $1-\frac{1}{2}$ square pads.

Q: How well does the STC Acoustic Pad perform for Impact Insulation Classification (IIC)?

A: Independent tests per ASTM E 2179 of STC Acoustic Pads demonstrate ΔIIC-23, much higher than gypsum cement plus acoustical mat systems, cork, or rubber.

Q: Is the STC Acoustic Pad fire-rated for use in combustible construction?

A: Yes. The STC Acoustic Pad is installed as an acoustic floor covering system on top of any fire--rated or unrated floor/ceiling assembly.

Q: Can the STC Acoustic Pad system be used in non-combustible construction with wood panels?

A: Yes. Wood panels are permitted as a "floor covering material" over non-combustible floor/ceiling assemblies per IBC 603.1.5 and IBC 804.1.

Q: Does the STC Acoustic Pad system self-level like gypsum cement?

A: No. The STC Acoustic Pad system acts like a typical panel on structural members, deflecting for comfort underfoot. It is flat as required by finish floors; levelness is not required. Also, with self-levelling underlayment, the variable thickness of the cement brings behavior under fire conditions into question – it causes cracking at thin areas, and it stresses the structure from additional dead load at thick areas.

Q: How many Pads are needed?

FAQs

A: Quantity depends on the spacing of pads for deflection, which is based on loads and panel thickness. For residential loads, a bag of 100 pads will cover 210sf of system area.

Q: What is the recommended adhesive?

A: We recommend polychloroprene (neoprene) based adhesive – 3M[™] "Neoprene High Performance Rubber and Gasket Adhesive" low viscosity 1300L. Adhesive can be reactivated with methyl ethyl ketone (MEK). For coverage, 1 gallon provides approximately 9,000 sf of typical floor system area.

