



STC SOUND CONTROL

Comprehensive Guide to the
STC MULLION SEAL™

TABLE OF CONTENTS



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The Need for Acoustic Comfort	3
The Problem of Sound Flanking at Mullions	4
Challenges of Market Standard Solutions	5
 A Better Solution: The STC Mullion Seal	6
The STC Mullion Seal Advantage	7
What Makes It Special	8
What STC Can Do for You	9
 APPENDIX: Technical Details and FAQ	10
Installation Instructions	11
Sealed and Covered Mullions Comparison	12
Frequently Asked Questions	13
About STC Sound Control	14

THE NEED FOR ACOUSTIC COMFORT

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**Most of the time, we ignore sound until it becomes a problem.
But once it does, it's often a big one.**

In places like offices and conference rooms, excess noise from adjoining rooms can affect productivity, employee engagement, and satisfaction, while also compromising privacy.

The STC Mullion Seal provides a simple, high-performance, and cost-effective solution for improving acoustic comfort in spaces with exterior glass walls.

THE PROBLEM OF SOUND FLANKING AT MULLIONS

When floors in buildings with exterior glass walls are sectioned off into rooms (such as offices), the interior partitions that meet the outside glass wall are generally run into mullions – the thin metal tubes that hold the glass in place.

The joint between the mullion and interior partition creates a gap, as the exterior glass wall must be allowed some degree of movement relative to the partition. This gap in turn creates a **SOUND FLANKING PATH** where noise can pass between rooms on either side of the partition.

Increasing the sound isolation properties of the partition itself will do nothing to solve noise problems, as sound still moves through the gaps, like water through holes in a leaky pail.

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CHALLENGES OF MARKET STANDARD SOLUTIONS

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Mullions feature no solution on their own for closing sound flanking paths. Leases often prohibit contractors from directly connecting partitions to the mullions, while sealants and double-sided tape do not hold up to movement.

One solution is a mullion cover – an aluminum and vinyl seal that covers the joint and the mullion on both sides, and seals to the glass. However, these must be custom fit around the horizontal mullions, which takes time and can be incredibly expensive. While performing well, they are overdesigned for the situation.

Luckily, STC Sound Control provides a more sensible, effective solution.

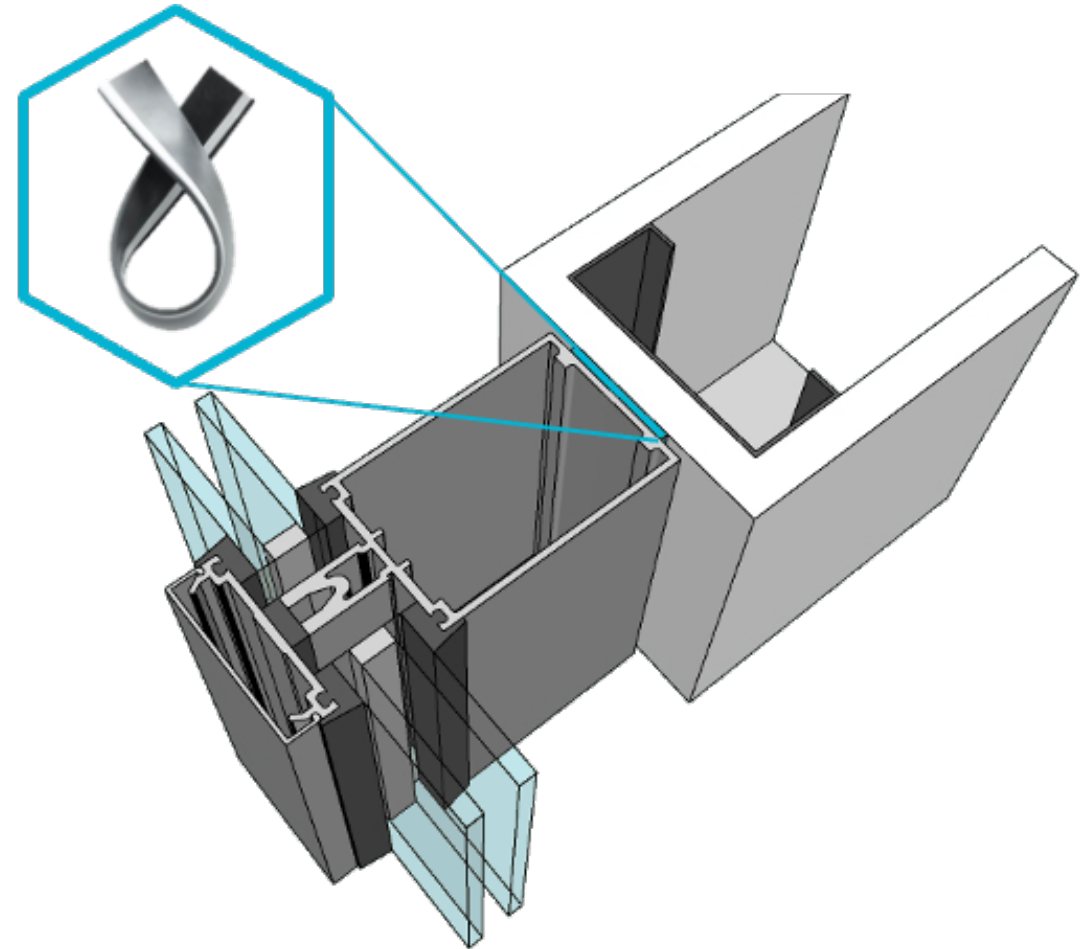
A BETTER SOLUTION

PRODUCT OVERVIEW

The STC MULLION SEAL™ is a neoprene rubber strip with offset pressure-sensitive adhesive on either side, designed to reduce noise that passes through the gap between mullions and interior partitions in glass wall construction.

THE STC MULLION SEAL™

The STC MULLION SEAL™ adheres to the mullion at the outer wall, and to the partition on the interior, using the pressure-sensitive adhesive that is included on either side of the strip. The result is a solution that closes the gap to seal the sound flanking path.



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MULLION SEAL ADVANTAGE

Compared to alternatives like mullion covers, the STC Mullion Seal provides a simple, high-performance, and cost-effective solution.

SIMPLE

Reduced installation complexity

Simply: 1) Cut the STC Mullion Seal strip to length; 2) Remove the adhesive cover from the mullion-facing side of the strip, and firmly set in place against the mullion; 3) Remove the adhesive cover from the partition-facing side and set in place against the end of the partition.

HIGH- PERFORMANCE

Significant acoustical improvement

The STC Mullion Seal provides sound isolation of STC-28 at the joint and effective STC-43 in offices. This is a significant 15 dBA improvement compared to unsealed joints, and all the sound isolation that is needed in typical office situations.

COST- EFFECTIVE

Clear winner on price

At approximately \$3.50 per foot, the STC Mullion Seal is about 5% of the cost of custom-fit mullion covers, and a typical 6-foot-high joint can be treated for \$21. Mullion covers cost upwards of \$400 for the same 6-foot length – a lot to pay for unnecessary overdesign.

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WHAT MAKES IT SPECIAL



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MATERIAL: The STC Mullion Seal's use of neoprene means that it features:

- Exceptional ability to isolate sound;
- Flexibility, to accommodate movement in the exterior wall due to wind, thermal expansion, and story drift;
- Resistance to UV light, withstanding deterioration effects from sunlight.

DESIGN: Critically, the STC Mullion Seal's patented arrangement of offset pressure-sensitive adhesive strips allows for movement between the outside structure and interior partitions without breaking the seal (as could happen with double-sided tape).

Aesthetically, the Mullion Seal is **completely concealed** in the void between the mullion and the partition, maintaining clean lines when viewed from both the interior and exterior.

BUILDING CODE: The STC Mullion Seal meets the requirements of IBC 715.4.2, filling the void created at the vertical intersection of non-fire-resistance-rated exterior curtain wall assemblies and fire barriers. It retards the passage of fire and hot gases, and accommodates expected building movements without loosening

WHAT STC CAN DO FOR YOU



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The STC Mullion Seal provides a host of benefits for interior designers, building owners, commercial tenants, and end-users.

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

Contact us today to find out how you could make your building more **acoustically comfortable**.

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



APPENDIX: TECHNICAL DETAILS & FAQ



INSTALLATION

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Flat Profile Mullion Seal Installation Instructions

1. Prior to installing partition, cut Mullion Seal to length. Portions may be butted together.
2. Do not remove cover strips from Mullion Seal until ready for installation. Clean face of mullion of dust and dirt; alcohol wipes are recommended for best performance.
3. Remove cover strip over adhesive from side facing mullion only. Take care to remove cover strip without peeling the adhesive from the rubber. Firmly set in place (Fig. 1). A roller is recommended; bond will increase with pressure and time.
4. Attach gypsum board(s) to the web of the end stud. Remove cover strip, place in position (Fig. 2) and set firmly in place applying continuous pressure.
 - As an alternative method, set prefabricated portion of partition (Fig. 3). Include double studs for additional restraint of mullion deflection (hi-rise applications).
5. Continue to construct remainder of partition.

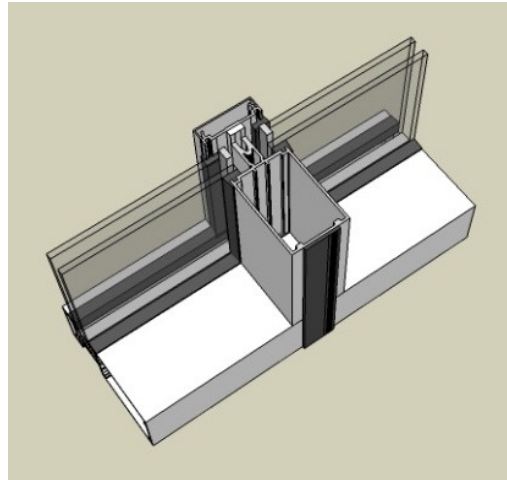


Figure 1: Adhere Mullion Seal to Mullion

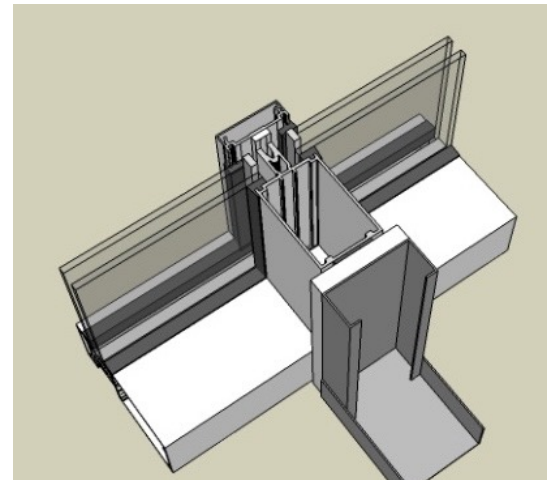


Figure 2: Install end stud with board attached

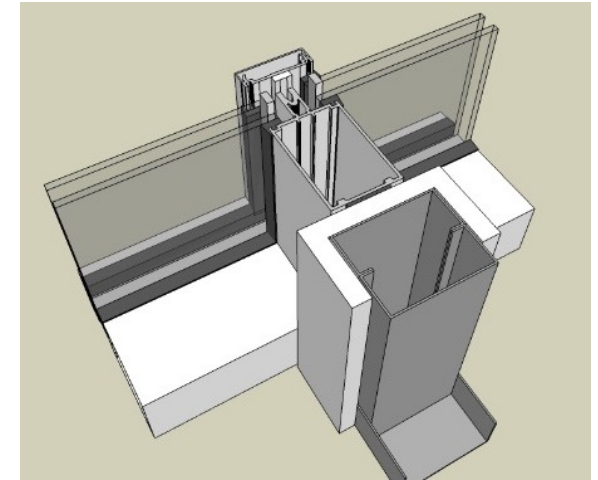


Fig 3: Alt – Install finished portion of partition

PERFORMANCE

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SEALED & COVERED MULLIONS: A SENSIBLE ALTERNATIVE

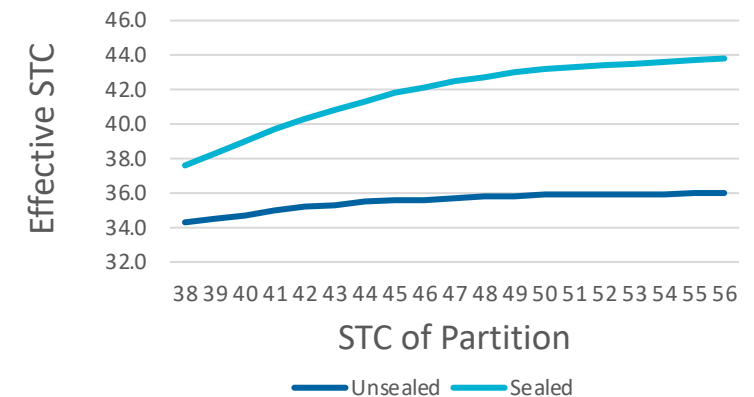
The STC Mullion Seal closes the gap between the end of a partition and a curtainwall mullion, a major sound flanking path. Unlike double-sided tapes of foam or rubber, the patented offset adhesive allows the seal to move with thermal expansion, wind deflection and interstory drift, maintaining the seal.

The Mullion Seal is designed to effectively seal the joint and maintain balance in the acoustical design at minimal cost. Typical offices have background noise at NC-30 to NC-35, and have sound absorbing carpet and acoustic ceilings that assist in attaining acoustical comfort. As a result, an effective STC for the overall separation needs to be no more than STC-43, considered after sound flanking paths are sealed in the partition. Normal speech sound level is 66 dB; loud speech is 72 dB. These sounds are fully blocked from passing through at STC-43; disruptive sound is more likely to come through the office door or recessed electrical outlets than through the mullion.

A typical office, 10' wide x 15' long by 9' high, with 160 sabins and a 9' x 15' partition joining a mullion 6" deep and 8' high shows a common condition. The mullion is less than 3% of the wall area, limiting the amount of sound transmitted.

The chart below shows the effective STC of this separation for various STC values of the partition. The sealed mullion has an STC-28; the unsealed partition has an STC-20 due to a small gap between the mullion and the partition end. Even so, an STC-47 partition achieves an effective STC-43 for the overall separation. Unsealed, the effective value drops to STC-36.

Typical Office with Mullion Joint



A covered mullion system, performs very well. However, it is much more than is needed under typical conditions. They also have an added-on appearance and cost 20 times as much, making the STC Mullion Seal the sensible alternative to covered mullions.

FAQs

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Q: What is the Mullion Seal made of?

A: Neoprene, a dense and resilient rubber selected for its ability to isolate sound and vibrations. Neoprene also remains extremely flexible and does not deteriorate with exposure to ultraviolet light .

Q: Does the Mullion Seal require a partition to be attached to the mullion?

A: No. The interior partition that sits on the floor, and the mullion that is connected to the exterior wall, are allowed to move in relation to each other. The arrangement of patented offset pressure-sensitive adhesive strips (PSA) connect the Mullion Seal to both the partition and the mullion.

Q: Does the Mullion Seal contact the glass?

A: No. It is completely concealed in the void between the mullion and the partition, maintaining clean lines when viewed from both interior and exterior

Q: How well does the Mullion Seal perform?

A: Sound transmission between adjacent rooms is sealed at the flanking path, and the Mullion Seal isolates structure-borne exterior vibration and noise from passing from the mullion into the partition and radiating into the room. Independent tests by NGC show a substantial Transmission Loss of 15 dBA between sealed and unsealed joints. The Mullion Seal has an STC-28 , including the mullion, and an effective STC-43 in typical office situations, all the sound isolation needed for flanking paths .

Q: Can the Mullion Seal be used for fire barriers that meet the mullions?

A: Yes, the Mullion Seal meets the requirements of IBC 715.4.2, filling the void created at the vertical intersection of non-fire-resistance-rated exterior curtain wall assemblies and fire barriers. It is securely installed and will not loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases due to its patented offset adhesives .

ABOUT STC SOUND CONTROL

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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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