THE BURN

Spring 2025 Wrap Up

Accepting EJs/TEs from UL TEDP Participants Helps Contractors

James Stahl Jr.
Sr. VP Engineering, Strategy & Innovation

In the construction industry-especially in life-safety critical areas like firestopping, Engineering Judgments (EJs) or Technical Evaluations (TEs) are often necessary when field conditions deviate from tested and listed systems. While contractors routinely rely on these documents to maintain progress and compliance, the source of EJ/TE plays a critical role in determining liability and risk exposure. The International Firestop Council (IFC) has published clear guidelines outlining best practices for generating and using EJs, emphasizing the need for qualifications, documentation rigor, and defensible reasoning. Accepting EJs from UL Technical Evaluation Developer Program (TEDP) participants aligns closely with these guidelines and offers contractors a path to shared responsibility rather than assuming full liability. By contrast, relying on EJs from non-participants – those operating outside a formal program – often leaves contractors exposed to greater scrutiny, rework risk, and liability if an EJ is challenged. The following analysis compares these two approaches and highlights the practical benefits of working within a recognized, standards-based framework.

1. **Risk Mitigation Through Credibility:** UL TEDP participants are vetted and examined by UL, which lends a level of technical rigor and standardization to their evaluations. When a contractor uses EJs/TEs from a recognized TEDP participant, it provides a defensible technical basis – reducing liability exposure if questioned later.

2. **Improved Documentation Trail:** Contractors are often held liable for installation or design decisions that don't strictly follow tested and listed assemblies. A formal EJ/TE from a UL TEDP participant provides documented justification and traceability – often more robust than ad hoc field decisions.

3. **Increased Speed and Flexibility:** Rather than waiting for a new tested UL System, a contractor can use an EJ/TE to keep a project moving without compromising compliance. This reduces costly delays and temptations to make undocumented field modifications – which increase liability.

4. **Authority Having Jurisdiction (AHJ) Confidence:** AHJs are more likely to accept EJs/TEs from UL TEDP participants than informal or undocumented alternatives. This smooths inspections and final approvals; which benefits compliance and project delivery.

5. **Shares Responsibility with Originator:** If a firestop detail, for example, is based on a UL TEDP EJ, and it's later scrutinized, the contractor can point to the originating qualified professional. That shared accountability can reduce the contractor's direct liability.

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Accepting EJs/TEs from UL TEDP Participants Helps Contractors

(continued)

Comparison: UL TEDP Participants vs. Non-Participants in EJs

Aspect	UL TEDP Participant	Non-Participant
Credibility/ Technical Rigor	High – standardized training, oversight, and traceability under UL's framework.	Variable – depends on individual qualifications and documentation; no UL oversight.
Acceptance by AHJs	Generally well-received; many more AHJs recognize TEDP credentials and process.	May be questioned or rejected unless the originator has personal credibility with AHJ.
Documentation Quality	Consistent format, includes reference to tested systems, limitations, and basis of engineering judgments.	May vary widely; often lacks uniform structure, depth, or correct references.
Contractor Liability Exposure	Shared – the contractor relies on vetted third party within a recognized program.	Assumed – contractor may take full responsibility if the EJ is later deemed invalid.
Project Risk/ Delay	Lower – smoother inspections and fewer flags.	Higher – possibility of rework, inspection delays, or change orders if rejected.
Legal Defensibility	Stronger – UL TEDP's backing can support legal defense if EJ is challenged.	Weaker – responsibility may rest solely on contractor.

Why UL TEDP Helps Contractors

- **You're not flying solo** – the UL TEDP framework provides a shared technical foundation.
- **You're not guessing** – the UL TEDP process encourages evaluations grounded in existing test data and UL logic.
- **You're not risking rejection** – the documentation has more weight and legitimacy with AHJs and other stakeholders.

Proceed with Caution with Non-Participant EJs

If a contractor uses an EJ from a non-TEDP source:

- The burden of vetting and justification falls on the contractor.
- If questioned, there's no UL framework or documentation standard to fall back on.
- Any inconsistency or overreach in the EJ could come back to the contractor during inspections or litigation.

Final Takeaway

Accepting EJs/TEs from UL TEDP participants is a risk-sharing strategy. It doesn't eliminate contractor responsibility, but it does mitigate and distribute it through a recognized quality-assured process. It is important to keep in mind that UL TEDP does not constitute UL's seal of approval of the EJ itself. UL does not approve or endorse individual EJs/TEs, it vets the process and qualifications of UL TEDP participants who issue them – and that procedural oversight helps bolster confidence, consistency, and defensibility. In contrast, EJ's from non-participants concentrate the risk on the contractor, especially if things go sideways.

UL CERTIFIED
MANAGEMENT SYSTEM
TECHNICAL EVALUATION DEVELOPER

Celebrating David Volker: 22 Years of Dedication and Service

Specified Technologies Inc. Staff

David Volker has been a steady, guiding presence as Customer Service Manager at STI, known for his calming demeanor, strong grasp of systems, and genuine respect for everyone he worked with. As Customer Service was getting started, David was the natural choice to lead the team. He brought a thoughtful, organized approach that helped shape the department into one of the most efficient and well-structured in the company. His leadership was instrumental in preparing his department for ISO 9001 Certification, and he consistently found ways to help STI grow by making the most of the systems and resources already in place.

Beyond his operational strengths, David made a lasting impact on company culture. He treated every employee with fairness and dignity, always applying policies with a soft touch and a sense of care. He was approachable, dependable, and respected by all, while stern when needed, but always understanding. As he prepares for retirement, he leaves behind not only a department set up for continued success, but also a legacy of kindness, consistency, and quiet leadership. We thank David for his 22 years of service and wish him the very best in the next chapter.

Introducing Consultants Corner:

Expert Insights for Safer, Smarter Building Design

Specified Technologies Inc. Staff

The first edition of our new Consultants Corner series was recently released (check it out here), and it sets the tone for what will become a quarterly forum of practical knowledge and candid conversation. Consultants Corner brings forward real-world perspectives from curtain wall experts whose insight can help improve project outcomes. Leading the efforts is Aaron Alterman, Consultant Support Specialist – US & Canada. In this kickoff edition, Aaron sits down with Judd Storey, Vice President of Curtainwall Design Consulting, for a candid discussion on fire containment challenges in modern façade design.

Judd shares how early collaboration with STI has helped solve complex perimeter fire containment issues, especially when STI is brought in during the design phase. Together, they highlight the value of engineering judgments, the importance of integrating firestopping into the overall curtain wall plan, and the growing role of performance metrics like the L-Rating.

Stay tuned for future editions of Consultants Corner, where we'll continue to bring industry voices and practical guidance to the forefront of building envelope design.

Curtain Wall
CONSULTANTS CORNER

Back to Basics – What is the T-Rating

Specified Technologies Inc. Engineering Services

The T-Rating is the duration that a firestop system will resist an increase in temperature on the unexposed side of wall or floor of 325F above its starting ambient temperature, a simple measure of thermal conductivity. T-Ratings are an often-overlooked requirement in building codes requiring contractors and building owners to apply supplemental insulating materials on penetrants or increase spacing between penetrations and construction joints to ensure compliance with the intent of local building codes.

The methods for determining achievable T Ratings are defined within ASTM E814 (UL1479) (penetration firestop systems), ASTM E2307 (perimeter fire containment systems), and ASTM E2837 (continuity head-of-wall joint systems). With local building codes further requiring which situations do and do not require equal F&T Ratings. In the International Building Code (IBC) Section 714.5.1.2, you will see the requirement that floor penetrations shall have an F-Rating and T-Rating of not less than 1 hour but not less than the required rating of the floor penetrated.

The T Rating may not always equal the F Rating because metal penetrants in firestop systems may get hot, a metal roof deck may not have enough thermal mass to resist temperature rise on the unexposed surface, or a curtain wall may have a metal framing member that passes through the void area at edge of slab. The US codes prescribe situations where T Ratings for penetrants are not required such as penetrants contained in wall cavities, connected to a floor or shower drain above a ceiling membrane, or conduit connecting to switch gear. The US codes do not require T Ratings for continuity head-of-wall joints, such as the intersection of a fire-rated wall and non-fire-rated roof deck or a perimeter fire containment system installed at the edge of slab.

Building Safer Healthcare Spaces – Together

John Zalepka
Director of Training & Industry Engagements

Reflections on the 2025 Life Safety Symposium at Memorial Sloan Kettering

Earlier this month, STI had the privilege of co-hosting the Life Safety Symposium at the Zuckerman Research Center, located within the Memorial Sloan Kettering Cancer Center campus in New York City. As someone who's spent the better part of my career focused on life safety, firestopping, and healthcare compliance, it was incredibly rewarding to be part of a day that brought so many thoughtful, experienced professionals into one room.

We welcomed over 100 attendees, including facility directors, healthcare engineers, code officials, architects, and building product manufacturers. Together with HESGNY and JLL Healthcare powered by ATG Intelligence, we put together a full day of continuing education focused on the real-world challenges, and opportunities of managing life-safety in occupied healthcare settings.

Throughout the day, speakers shared insights on everything from evolving electrical safety protocols to digital twins and AI in facility operations. I had the chance to present on best practices for managing fire-resistance-rated barriers in healthcare, highlighting what happens when penetrations are left undocumented, when product substitutions aren't tracked, or when mock-ups and inspections fall through the cracks. These are the details that don't just impact Joint Commission scores, they affect people.

What really struck me were the conversations before and after the presentations. One facility director shared that he "hadn't thought about how much the firestop system impacts infection control planning until today." A healthcare engineer told me that he's "never seen the barrier discussion laid out so clearly, it's always felt like a gray area." And a building products salesperson approached me after the session and admitted, "I came here thinking I'd learn some tips to pitch product, but I'm actually walking away with a new understanding of how it's the systems that matter, especially in hospitals."

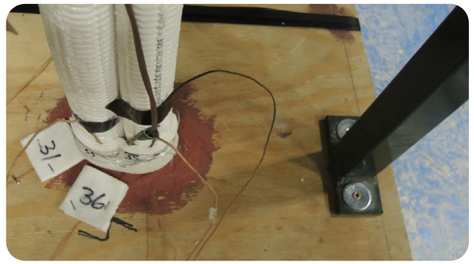
And that's why we do this…

STI believes in going beyond the code, beyond the product catalog, and beyond the standard training deck. We show up to conversations like this because we know that when people understand the why behind firestopping and barrier management, they make better decisions on the job and patients, staff, and communities are safer because of it.

This symposium was a reminder of how much progress we've made as an industry and how much more we can do when we're aligned, informed, and focused on the same outcome: resilient, safe, and fully operational healthcare facilities.

Spotlight on UL Systems

David Vail
P.E., Project Manager & Codes/Standards



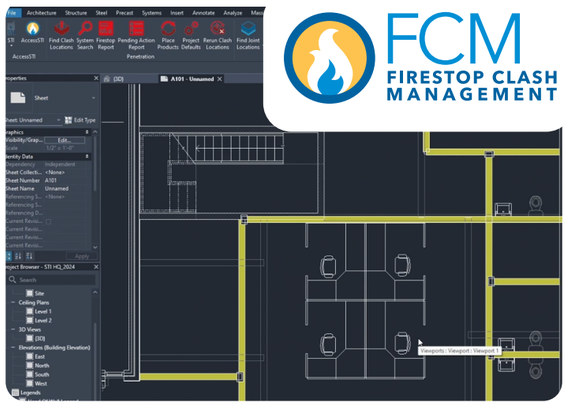
Installation of Firestop for Polyethylene Line Set (F-C-8068)

Polyethylene Insulated Line Sets!

STI has developed a new system for preinsulated copper tubing, which is becoming a popular option for AC line set installations. The copper tubes in these systems are insulated with polyethylene (PE) insulation and it is important to note that existing systems for AB/PVC insulation are not appropriate for cases where PE insulation is present. The new system number is F-C-8068 and it covers line set installations in 1 or 2 Hr rated wood floor-ceiling assemblies. SpecSeal® RED, RED2, BLU, BLU2 or SSW1000EX Wrap Strip are used as the primary component of the firestop at the underside of the gypsum ceiling and SpecSeal® Series SSS Sealant, LCI Sealant or Type WF300 Caulk are used to provide a smoke seal at the openings in the gypsum ceiling and plywood subfloor. STI has previously developed a handful of systems, which include C-AJ-8288, F-C-8052 and W-L-8117, for PE insulated line sets in other assembly types.

Upcoming Release: Firestop Clash Management ver. 1.2.7011

Justin Pine
Senior Manager, Software & Services



The STI Digital team is excited to announce the impending release of Firestop Clash Management (FCM) version 1.2.7011. This updated version of FCM brings with it a host of performance improvements and bug fixes along with two new features to enhance the experience.

- New Head-of-Wall Mapping Tool
  - This new function enables BIM Coordinators to apply color and visual overlays automatically in Revit Floor plans that indicate the referenced third-party system and/or hourly rating of the head-of-wall joint.
  - This new function improves the end user experience of finding head-of-wall joints and communicating what is designed into the model as an appropriate solution.
- Compatibility with Autodesk® MEP Fabrication Elements embedded into Revit Models
  - FCM now recognizes Autodesk® MEP Fabrication Elements placed into Revit models and provides appropriate system and firestop product recommendations.

Release of this new update to FCM is planned for end of June and will be available to download from our website. If you're on a recent version of FCM, expect a notification prompt to let you know when the update is available.

Sound Advice from an Old Firestop Guy – Part 3
What is the STC of Your Firestop Caulk?

Tim Mattox
Senior Manager of Systems & Testing Development

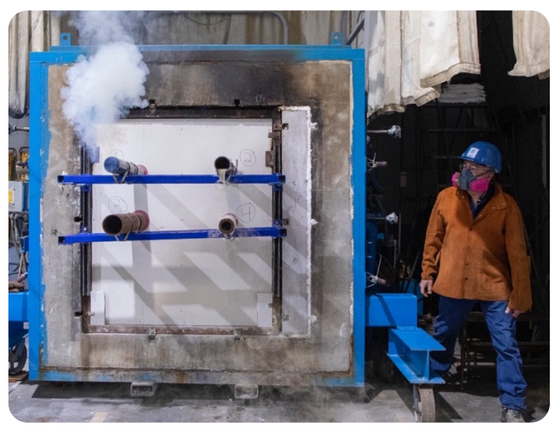
In the first two parts of this series, we explored the fundamentals of sound transmission and its interaction with barriers, particularly in the context of firestop systems. Part 1 introduced ASTM E90, the standard test method for measuring airborne sound transmission loss (STL) across a barrier in a controlled laboratory environment, and how this STL data is then evaluated and transformed into Sound Transmission Class (STC), a single-number metric that summarizes a barrier's ability to attenuate airborne sound, using the standard contour curve outlined in ASTM E413. Part 2 delved into the physical nature of sound, explaining how sound waves interact with solid barriers that break up the wave energy. Some energy is reflected, some is dissipated within the material through mechanisms like damping and vibration transforming sound energy into heat energy, and some is transmitted to the other side of the barrier at a reduced decibel level. And we learned that the difference in sound energy measured before and after the barrier equals the sound transmission loss that is quantified by ASTM E90 across a spectrum of frequencies spanning 5 octaves. In this third installment, we address the complex challenge of integrating firestop systems into barriers that must meet both fire-resistance and sound-attenuation requirements, ensuring safety and acoustical performance are achieved without compromise.

Ratings for Systems, not Products

Very often, it is mistakenly asked, what is the rating of your firestop product? And if you have ever attended a level 1 firestop training course, within the first 10 minutes you know the answer to that question. Of course, the firestop product is not rated. To illustrate the point as to why, consider that a product may be tested in a 1-hour wall penetration, but the very same product may be tested in a 4-hour floor penetration, sometimes at the same application thickness. Does the product carry a 1-hour rating? a 4-hour rating? The answer is neither, because performance is based on several interdependent elements working together, and ratings vary based on individual system performance. The product is only one part of that system. The answer is no different when someone asks what the STC of a firestop product is. Similar to the previous example, what if the product is tested in an STC 50 wall? What if it is tested in an STC 70 wall? You don't build entire sound barriers out of firestop materials. You build the barrier, and test how the treated deviation in the barrier affects performance. Just as it is with firestop systems, the outcome is dependent on the interaction of multiple components that make up the system. As with firestop systems, the sound performance system carries the rating, not the product. This distinction is critical for designers and specifiers to understand, as it underscores the need to evaluate firestop systems holistically when addressing both fire and sound performance.

Designing for Dual Fire and Sound Performance

Designing barriers to meet both fire-resistance and STC requirements involves distinct but somewhat complementary approaches. In firestop design, the process begins with a barrier that meets the required fire-resistance rating (e.g., a 2-hour-rated wall per ASTM E119). When a penetration or joint breaches the rated barrier, a firestop system is installed to restore the original fire-resistance rating completely. The system must withstand the fire test duration equal to the barrier rating without failure (e.g., no flame passage before 2 hours for a 2-hour rated barrier). If the system fails prematurely, even if only by 1 minute, the firestop system is inadequate and must be improved upon and retested until it meets the barrier rating. That is the only choice the designer has because you cannot do anything to the barrier construction to bolster the fire-resistance performance of the penetration or joint.



Sound Advice from an Old Firestop Guy – Part 3

What is the STC of Your Firestop Caulk? (continued)

Acoustical design, however, requires a nuanced approach due to the nature of sound transmission. The process starts with a barrier of a known STC rating, established through ASTM E90 testing. Penetrations and joints introduce flanking paths, which are alternative routes for sound to travel. This happens because the inclusion of the penetration or joint alters the original barrier and may incorporate deviations such as air gaps or even undamped vibrations that may travel through the penetrating item from one side of the barrier to the other. These can affect the acoustical performance of the system, often degrading the STC rating to a certain degree. Unlike firestop systems, where you must design the firestop to restore the exact fire-resistance rating of the barrier, acoustical design only needs to make accommodations to account for potential STC degradation. Herein lies the difference. Suppose a firestop system is installed in an STC 50 wall and results in an STC 47 assembly rating due to flanking losses. If the project requirement is an STC of 50, the designer has two options. Either they can select a firestop system that minimizes flanking paths to maintain the STC 50 rating, or they can design a barrier with a higher STC rating (e.g., STC 53) to compensate for the 3-point degradation. Either approach ensures the final assembly will meet the required STC value. The only thing the designer needs to consider, if the 2nd choice is chosen, is whether or not the barrier still meets the fire-resistance rating. Typically, any alterations made to the barrier to improve sound transmission performance will not detract from fire-resistance performance.

The Critical Role of Air Leakage Control

As discussed in Part 2 of this series, the most effective way to enhance STC performance is to minimize air leakage across the barrier, as sound waves travel efficiently through air gaps. This principle aligns with firestop design, where airtight seals are essential for smoke control, as tested per UL 1479's air leakage (L-rating) test. Firestop products that create robust, airtight seals are critical for maintaining both STC and smoke performance. For example, SpecSeal® caulks, sealants, and sprays are designed to fill gaps and provide a hermetic seal in order to resist transmission of smoke. SpecSeal® SSP Firestop Putty and putty pads, being dense mastic materials, not only seal air gaps but also dampen vibrations from penetrating items, reducing flanking losses caused by vibrational energy transfer. Similarly, SpecSeal® Firestop Blocks provide effective sealing and vibration damping, making them suitable for both fire and sound applications. Another excellent option is SpecSeal® CID (Cast-In-Place) Devices, which incorporate water- and airtight seals, ensuring minimal air leakage. As well, SpecSeal® Composite Sheet paired with SpecSeal® sealants, especially when installed on both sides of a barrier, provide both fire resistance and sound attenuation by trapping air space and providing airtightness.

Besides looking simply at products, the designer can improve STC performance by incorporating firestop systems with low L-ratings, as verified by UL 1479. These are particularly effective, as they demonstrate proven resistance to air flow. The L-rating, expressed in cubic feet per minute per square foot (cfm/ft²) at a specified pressure, quantifies a system's air tightness which directly correlates with improved smoke migration protection which indirectly improves STC performance. When selecting firestop systems, designers should prioritize systems with low L-ratings to optimize both sound and smoke mitigation.

Mass Firestop Materials and Vibration Control for Sound Attenuation

Beyond sealing air gaps with mastic materials, certain firestop materials enhance STC performance by adding mass to the barrier, which reduces sound transmission by reflecting sound waves. SpecSeal® SSM Mortar, for example, contributes to sound attenuation by filling the opening around a penetration with the dense mortar and it also seals penetrations effectively. While the base barrier (e.g., gypsum board, concrete) primarily reflects sound energy due to its surface properties, the added mass of these firestop materials strengthens the overall system's performance.

The choice of firestop material depends on the penetration type and barrier construction. For metallic pipes, which can transmit vibrations, mastic materials like putty or foam blocks are particularly effective at damping vibrational energy. For non-metallic penetrants, such as plastic pipes, sealants or cast-in devices will do well. If a collar or wrapstrip product is used with plastic pipe penetrations, they would need to be used in conjunction with a SpecSeal® sealant in accordance with the firestop design. Designers should consult ASTM E90 test reports that incorporate firestop materials in representative systems to verify their impact on STC performance in the intended assembly.

Optimizing Annular Space for Sound Control

Annular space, the gap between the penetrating item and the barrier, can play a critical role in STC performance. Larger annular spaces increase the potential for air leakage and flanking paths, potentially degrading the barrier's STC rating. Firestop systems that minimize annular space, or firestop devices such as EZ Firestop® Grommets or smaller EZ Path® devices, provide smaller potential for STC degradation by reducing air gaps and by occupying a smaller footprint on a barrier surface. These devices have been shown to perform well in ASTM E90 tests due to their ability to limit flanking losses. When designing penetrations, minimizing the size of the opening is a practical strategy. Ultimately, specifiers should review UL 1479 and ASTM E90 tested systems to balance fire-resistance and acoustical requirements while minimizing annular space.

Practical Considerations and Best Practices

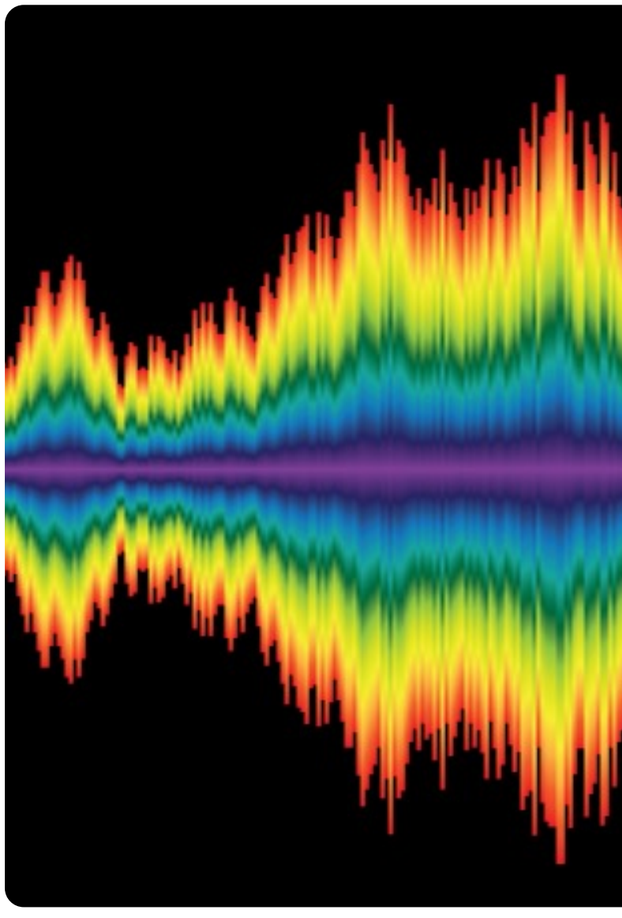
To achieve optimal fire and sound performance, consider the following best practices:

- Select Airtight Systems: Use firestop products like SpecSeal® caulks, sealants, putties, or Intumescent Foam Blocks that seal air gaps effectively, as verified by low L-ratings in UL 1479 tests.
- Dampen Vibrations: Choose materials that reduce flanking losses by damping vibrations, such as SpecSeal® SSP putty or Intumescent Foam Blocks, especially for metallic penetrants.
- Add Mass: Incorporate dense materials like SpecSeal® SSM Mortar to enhance the barrier's sound attenuation properties by reflecting sound waves more effectively.
- Minimize Annular Space: Employ reduced annular spaces and smaller devices when possible and avoid point contact to minimize vibrational transfer from the penetrating item to the barrier frame.
- Consult Test Data: Review ASTM E90 and UL 1479 tested systems to ensure the selected firestop system meets project-specific STC and fire-resistance requirements.

Not all firestop applications require STC ratings, and not all sound barriers need fire-resistance ratings. However, when both are required—such as in multifamily housing, commercial buildings, or healthcare facilities—Specified Technologies offers a range of tested systems designed to meet these dual demands. For detailed performance data, consult STI's technical resources, including UL 1479 and ASTM E90 tested systems, to select the appropriate system for your project.

Conclusion

Integrating firestop systems into sound-rated barriers requires a thorough understanding of both fire-resistance and acoustical principles. By prioritizing airtight seals, vibration damping, and mass addition, designers can ensure that firestop systems maintain the barrier's STC rating while meeting fire-safety requirements. Specified Technologies provides a comprehensive portfolio of products and systems, backed by rigorous testing, to address these challenges. Whether you're sealing a pipe penetration in a residential wall or a complex duct system in a commercial building, STI's solutions offer the reliability and performance needed to contain fire, smoke, and sound effectively.



Product Field Shots

Track Top Gasket (TTG) Installation at Head-of-Wall Joint

Project: Lakeview Apartments

Location: Duluth, MN

Contractor: Olympic Companies

Cable Spray (CS105) Installation

Project: COPEL Companhia Paranaense de Energia – Power Transmission/Distribution Substation

Location: Ponta Grossa, Paraná – Brazil

Contractor: Termocom Engenharia

Track Top Gasket (TTG) Installation at Elevator Shaft

Project: Carnegie Mellon University Robotics Institute Center

Location: Pittsburgh, PA

Contractor: Easley and Rivers

Upcoming Trade Shows

Health Care Facilities Innovation Conference (HFIC)

07/27/25 - 07/30/25, Columbus, Ohio
Booth #823

BICSI Beyond

08/17/25 - 08/20/25, Las Vegas, Nevada
Booth #325

National Electrical Contractors Association (NECA) Convention

09/12/25 - 09/15/25, Chicago, Illinois
Booth #3311

Meet the TEAM

Chris Demarco

Director of Engineering Services

What is your role at Specified Technologies Inc. and how long have you been here?

I am the Director of Engineering Services and am very proud to work with a fantastic team of engineers and drafting professionals. I have been a member of the STI family since 1999.

What is one bucket list item of yours?

With one son a Junior in college and another a Junior in high school, "real life" is quickly approaching for them. I suppose my "bucket list item", if it can be called that, is to help them navigate life, achieve their goals, and most importantly, be happy.

What project have you worked on in your career that you are most proud to have been a part of?

Over the years there have been so many projects, both personal and professional, that made me proud. Helping to create a safer built environment and always keeping life safety in mind makes me the proudest by far.

What is your favorite part about working in the firestop industry?

I enjoy working in construction and have done so my entire career. Firestop touches just about every facet of construction.

What is one fun fact about yourself?

I consider myself a professional homeowner…and car owner…and computer owner, and…When something needs to be done, I'm the guy swinging the hammer and spinning the wrench. If I do not know how to do something, I will figure it out and get the job done. I'm not afraid to take something apart.