Building safer environments: Enhancing fire-stopping system compliance, installation, inspection and performance

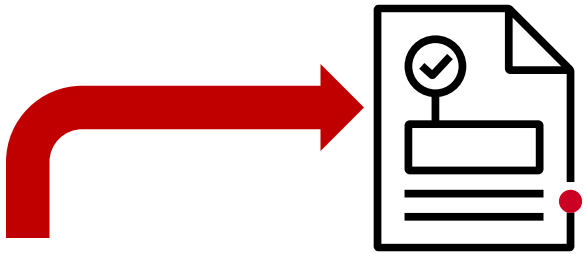
Ghaith Bakir, Senior Regulatory Engineer

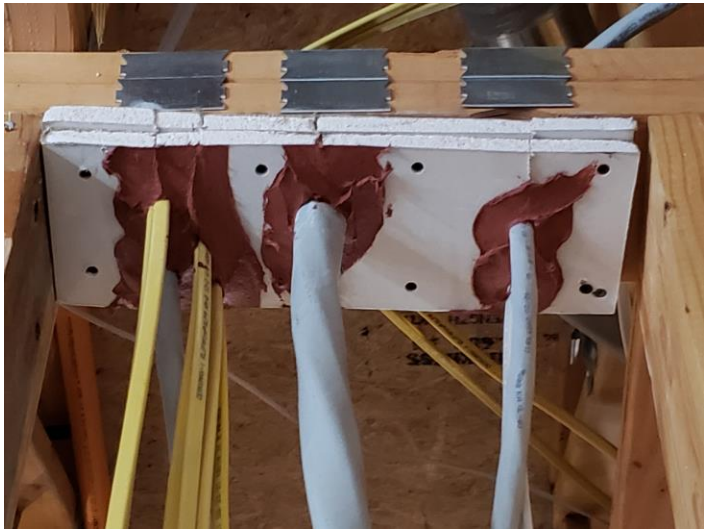
Safety. Science. Transformation.™

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Agenda

1. What is firestopping?
2. Installation challenges
3. Qualified Firestop Contractor Progra n
4. Technical Evaluation Developer Proc ram
5. Frequently asked questions
6. Where to find more information





What is firestopping?

- Firestop systems protect against the passage of flames, deadly gases and toxic smoke through openings created for penetrations, joints and gaps in fire-resistive walls, floors and floor/ceiling assemblies.

- Firestop systems restore the integrity of fire-resistance-rated assemblies.

- Firestopping is an integral part of fire protection engineering.

Fire statistics: Why we contain smoke, toxic gases and fire

3/4 of fire deaths are caused by smoke inhalation.

Source: Hall, Jr. John R. NFPA Fire Analysis and Research, Quincy, MA. “Burns, Toxic Gases, and other Hazards”.

47% of survivors caught in a fire could not see beyond 12 feet.

Source: NFPA Fire Protection Handbook, 18th Ed. Table 1-1P. Pg.1-15.

~57% of people killed in fires do not die in the room of the fire’s origin.

Source: NFPA Fire Protection Handbook, 18th Ed. Table 8-1P. Pg. 8-17.

Smoke travels 120 to 420 feet per minute under fire conditions.

Source: Estimate based upon ceiling jet velocity calculations for typical ceiling heights and heat release rates.

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Changing fire dynamics

- 1978 – approx. 17 min
- 2018 – approx. 3 min

Home fire **escape times** decreased from **17** to **3 min** over 40 years due to changes in materials and floorplans in modern homes.

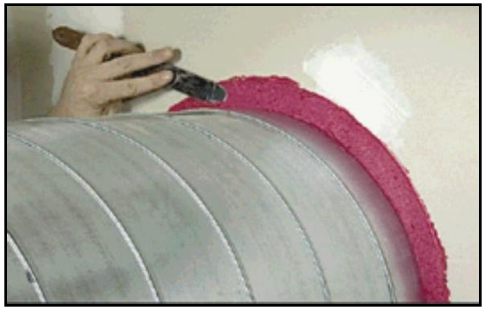


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Current industry issues

What you expect









What you often see





Firestop does NOT fix poor construction







Example of unqualified firestopping installation





Why use a Qualified Contractor?

UL Solutions Qualified Contractors can improve the level of quality and performance of your building:

- Gain better control over materials and the purchasing process.
- Reduce errors during the installation of materials.
- Manage control over non-conforming materials and reduce rework hours.
- Help reduce or eliminate nonconformance issues.
- May keep jobs moving without delay, allowing for cost savings

Find Qualified Contractors in the UL Solutions online certification directory.

UL Solutions Qualified Firestop Contractor Program

Qualified Firestop Contractors must:

- Employ at least one individual with firestop expertise
- Pass the UL Solutions Firestop Exam
- Understand the Manual of Practice (MOP) found at FCIA.org.
- Maintain a management system evaluated through an annual audit.

For more information: fire.inspection@ul.com



10 Audited Quality Elements



1. Construction document requirement review
2. Procurement of materials
3. Storage, handling, preservation and delivery
4. Installation, application and field quality assurance procedures
5. Inspection, Testing and Calibration
6. Control of nonconforming materials and systems
7. Training and qualification of staff
8. Corrective or preventive actions
9. Management system monitoring and improvement
10. Document and record keeping

New certificates

New online and in-person exam certificate



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Certificate of Completion

This certificate has been awarded to:
Laurie Reese

For completion of the following:
UL Firestop Online Exam (U.S. Certification)

Robert V. Slone

Robert V. Slone
Senior vice president
Chief scientist

Awarded on: **05/02/2023**

Valid through: **05/02/2026**

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Pending Qualified Firestop Contractor Program company certificate



Qualified Firestop Contractor Certificate

Certificate
XXXXX

File Number
RXXXXX

Issue Date
22-Jun-2022

Expiration Date
31-Dec-2023

ABC Firestop Contractor Inc.
123 First St.
Phoenix, AZ 85034

T: XXX-XXX-XXXX

This company has demonstrated that it complies with UL Solutions Qualified Firestop Contractor Program requirements. This certificate is not transferable and expires on December 31st of the following year. This certificate may be displayed, copied and shared with others but must be used in its entirety.

Only those companies listed in UL Solutions directory for the Qualified Contractor Program at www.ul.com/firestopcontractor are considered eligible for this program and to use this certificate and the UL Solutions Qualified Firestop Contractor Program Marking (shown here) in its advertising and promotional material in accordance with the marketing guidelines provided at www.ul.com/firestopcontractor.

UL Solutions reserves the right to void this certificate at any point. This certificate does not indicate compliance with any UL Solutions product certification program.

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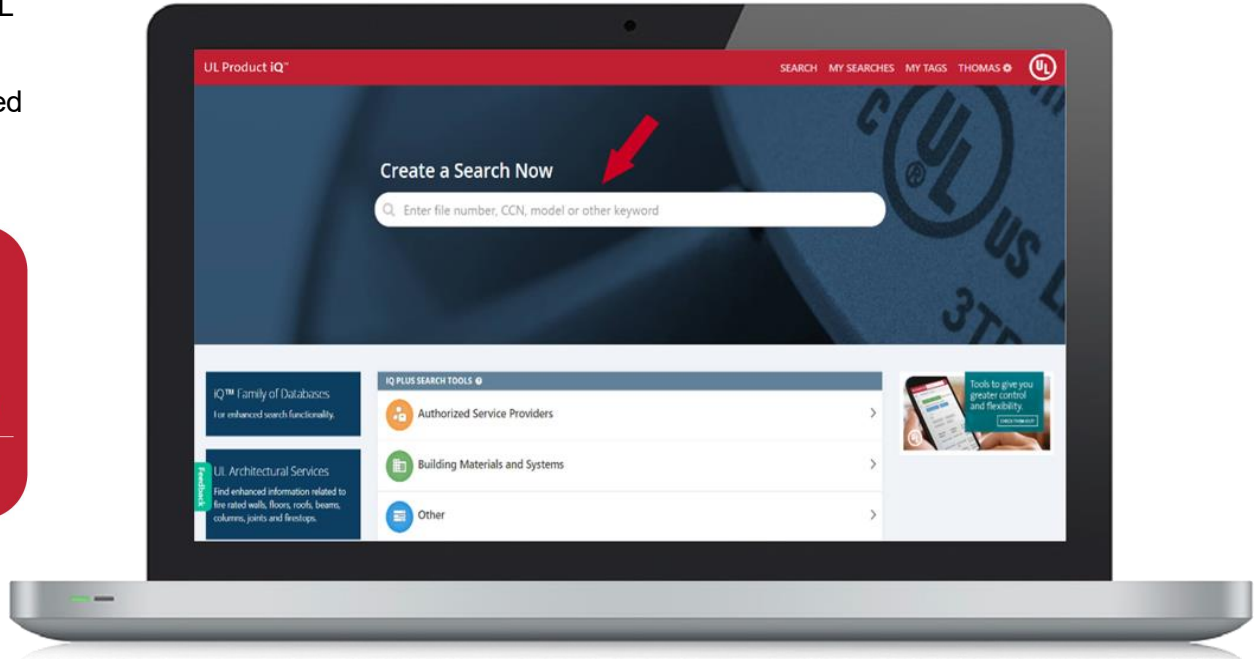
Industry support

UL Solutions supports the firestop industry from start to finish.

- Find firestop qualified contractors via UL Product iQ®.
- Look for promotional badges for qualified installers.







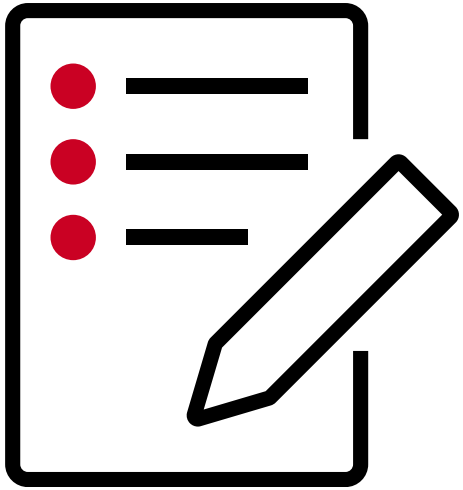
New UL Solutions Technical Evaluation Developer Program

Overview – What is it?

- UL Solutions offers current firestop customers a **management system qualification program** focused on the creation of technical evaluations.
- This **Technical Evaluation Developer Program (TEDP)** strives to improve the technical content and quality of engineering decisions for firestopping products and systems.
- TEDP supports UL Solutions customers that produce firestopping-type products and utilize UL Solutions for conformity assessment services.

Why now? What's involved?

- Why now?
  - UL Solutions identified a key gap in training and quality regarding technical evaluations during meetings with industry participants.
  - Technical evaluations continue to be a necessary tool for the firestopping industry.
- What's involved?
  - Service providers successfully demonstrate technical competency through knowledge of product testing, evaluation and certification for fire containment products and systems.
  - This program provides a rigorous management system for the qualification of technical evaluation programs and includes random sampling for fire testing in accordance with UL 1479, the Standard for Fire Tests of Penetration Firestops; UL 2079, the Standard for Tests for Fire Resistance of Building Joint Systems; or ASTM E2307.
  - Participants can rely on UL Product iQ® for evidence of program participation and successful completion of requirements.



Benefits for code authorities

- The quality management program is focused on fire and life safety to support code compliance regarding passive fire protection.
- Code authorities may gain support from the increased quality of technical evaluations of fire containment products and systems, raising expectations of what the industry can provide.
- It can help improve code compliance and provide for better installation and construction practices for firestopping solutions.
- Finally, enhancing technical assessments has a clear goal: focusing on fire and life safety code compliance for improved occupant and first responder safety. As a secondary benefit, it increases the number of tested, listed firestop systems available through Product iQ®.



Requirements for customer participation

- Service providers that complete the qualification program must demonstrate:
  - Comprehensive knowledge of testing, evaluation and certification schemes for firestop systems
  - Understanding of the requirements of fire containment products and systems, how they work and why they work
- The **Technical Evaluation Developer Program** increases the level of scrutiny for technical evaluations through specific requirements:
  - Personnel examinations to demonstrate knowledge and competency
  - Robust quality management scheme audits
  - Periodic laboratory testing of written evaluation concepts to provide validation of technical evaluations



Frequently asked questions

- How can I confirm participation?

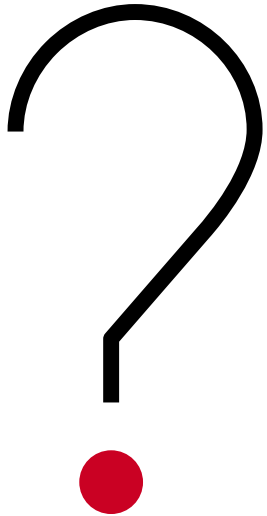
  Manufacturers enrolled in this program will have their company listed in the Product iQ® certification database.

- What are the selection criteria used for laboratory testing?

  UL Solutions will randomly select technical evaluations for laboratory testing across different product types and firestop solutions.

- What happens if a laboratory test of a selected system fails?

  The test sponsor will be given the opportunity to review the test and resubmit for a retest, provided a construction change occurs.



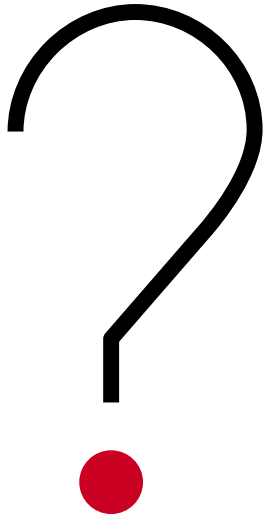
Frequently asked questions

- Does this UL Solutions program require the evaluation to include specific information/details? If so, what is specifically required?

  The UL Solutions program requirements include specific information and details to be included in each technical evaluation; examples include ratings (F, T, L, M, W), installation conditions, materials and project location.

- Will UL Solutions review the technical content in a specific technical evaluation?

  UL Solutions will not review the technical content in any technical evaluations. Content review is outside the scope of the program.



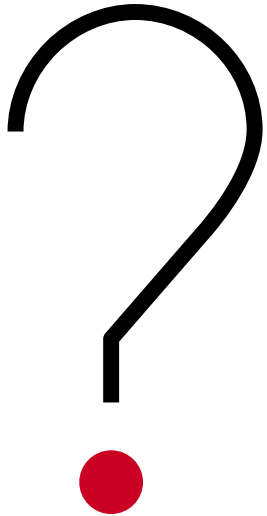
Frequently asked questions

- Does UL Solutions intend to publish the results of nonconforming test results?

  The results from nonconforming tests are proprietary and will not be disseminated, published or made available.

- Can I review the program requirements for the Technical Evaluation Developer Program?

  The complete program requirements are available as a download from the TEDP service page here: Service Page and Program Requirements.

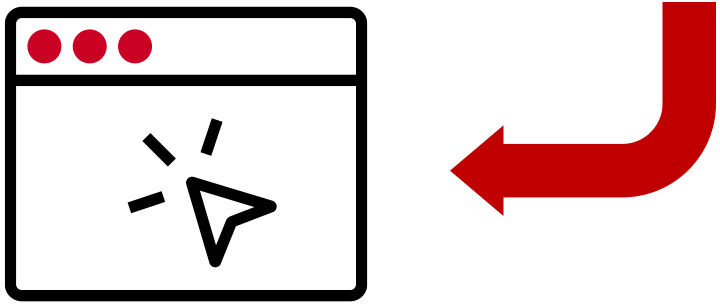


Where to find more information

For further assistance:

- UL Solutions Fire Barrier Management team: https://www.UL.com/services/fire-barrier-management
- Service page via UL.com – Technical Evaluation Developer program
- The Code Authority® Newsletter search at UL.com (subscribe here)
- Our knowledge solutions: https://ultraining.myabsorb.com/#/public-dashboard





Thank you

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