

## **CONTINUING EDUCATION IN BUILDING SCIENCE**

A Library of Continuing Education Units Approved by the American Institute of Architects (AIA), International Institute of Building Enclosure Consultants (IIBEC) and /or U.S. Green Building Council (USGBC).









## **CONTINUING EDUCATION IN BUILDING SCIENCE**

The Tremco Construction Products Group (CPG) Body of Knowledge program offers a library of Continuing Education Units (CEUs) approved by the American Institute of Architects (AIA), International Institute of Building Enclosure Consultants (IIBEC) and /or U.S. Green Building Council (USGBC). Programs discuss technical advancements and construction practices that can help achieve greater building performance, sustainability and energy requirements.

You can also watch many courses on-demand to earn credits. Available courses are indicated by the ▶ symbol. To view the full library of on-demand courses, visit <a href="https://tremco.learnupon.com/users/sign\_in">https://tremco.learnupon.com/users/sign\_in</a>

For in-person or virtual lunch & learn presentations, submit a request at: https://www.tremcosealants.com/contact/

To schedule a lunch & learn presentation from the **roofing** category, please call 800.852.6013.

CATEGORY	COURSE TITLE	COURSE NUMBER	CREDIT HRS/TYPE	DESCRIPTION
	▶ Air Barrier Testing in Review	TRS048	1 AIA LU/HSW	A presentation that discusses the different standards that are involved in evaluating air barrier membranes. This course will go over the test methods, modifications to relate to real world applications, and recommend other testing that can be performed to understand long term durability and performance.
	Poking Holes in your Air Barrier HSW	TRS070	1 AIA LU/HSW	The intent of this course is to evaluate the methodology of penetrations historically and today relative to the performance of air barrier systems. In the industry, we find that there is a lot of confusion as to what is required and what is necessary. With other products and systems in the construction industry, there is an ASTM Guide Specification that helps level the playing field as well as provide testing and requirements to help in determining what validation needs to be done. This presentation will dive into what the industry has typically required in absence of this guide specification. Further, we will recommend additional testing and modifications that will help to determine the impact of these facade anchors and cladding attachments on performance of the air barrier system.
AIR BARRIERS	The Building Enclosure: A Jacket of Protection for your Building	TRS071	1 AIA LU/HSW	Just like a jacket can protect you from the elements, the building facade is intended to do the same for the inner structure of your building. How will this jacket of protection work against wind driven drain, protecting the occupants and materials from the outside temperature differentials? Like a fire fighter's coat, will it also provide fire resistance? This course will walk through the different building components that make up the enclosure and evaluate them for their resistivity to wind, water and fire. We'll examine the ways the building components, combined as a system, can contribute to energy efficiency and resiliency.
AIR	▶ Fluid-Applied Air Barrier Tech, Challenges, and Performance	TRS072	1 AIA LU/HSW	This program examines the importance of air barriers in construction. There will be a deep dive into the increasing requirements of air, water, vapor, and thermal controls to improve a buildings performance. With a focus on fluid-applied air barrier membranes, also learn how technologies and installation are challenged and effect on performance.
	▶ Raise Your Expectations of Continuous Insulation and Air Barrier Systems	TRS075	1 AIA LU	Current construction practices have spurred innovation in continuous insulation and air barrier technologies. Specifiers need a solid grasp of continuous insulation and air barrier fundamentals in order to ensure wall systems function as intended. This course will provide an overview of CI and air barrier technology options for in-field and off-site construction. In addition, we will discuss critical considerations including material compatibility, whole system testing and warranty coverages for overall building protection and performance.
	▶ Prefabrication Trends in Particular Factory-Applied Air Barriers	TRS089	1 AIA LU/HSW	Commercial Construction today is all about reducing waste. Whether its time or energy, commercial construction has been designed around efficiency. Pre-fabrication of the air barrier membrane can decrease the time needed during construction without compromising performance. This presentation will go through the benefits involved in the prefabrication, things to look out for when evaluating and selecting these systems, and give insights on connectivity choices when it all comes together on the jobsite.
	High Performance Specifications for High Performance Building Envelopes	TRS047	1 AIA LU/HSW	Show the potential gaps in specifications that can lead to poor performing building envelopes. Address air barrier material compatibility, durability and installation sequencing and how the specification will impact long term performance. This will benefit all attendees by minimizing liability and delays while increasing durability, comfort ability, and occupant safety.
BUILDING ENCLOSURE	➤ Architectural Details – Conveying Construction Drawing Clarity	TRS057	1 AIA LU	Designing an air-tight, water-tight, and energy efficient building requires an understanding of the anatomy of the entire building enclosure in order to build structures that will perform as intended. A lack of understanding of these concepts translates into poor and incomplete architectural details, gaps in design information, and exterior wall components that cannot be properly installed, leading to contractors "figuring it out on the field." This presentation will touch upon basic concepts of building science and how drawings can be improved to create beautiful, sustainable structures that function properly, by conveying clarity on building enclosure details at foundation-to-wall, roof-to-wall, window-to-wall, penetrations, and at dissimilar material transition points.
	Planning for Compressed Construction Timelines Post COVID-19	TRS067	1 AIA LU/HSW 1 IIBEC CEH	In this course, we will examine specific product technologies and services that can help speed and simplify installation not only for projects that are in delay, but also for on-time projects to be completed early. This can have serious ramifications, for example, when it means a community can open a hospital several months earlier. The course will also discuss solutions available that can extend the construction season, allowing work to continue during inclement weather.

CATEGORY	COURSE TITLE	COURSE NUMBER	CREDIT HRS/TYPE	DESCRIPTION
BUILDING ENCLOSURE	▶ Detailing the Building Enclosure Interfaces	TRS086	1 AIA LU	Enclosure repair and replacement in North America remains a multi-billion dollar expenditure. The majority of the problems are moisture related. They are caused either by air leakage or exterior moisture penetration because of lack of proper terminations and transitions. This presentation will address construction concerns throughout the project related to moisture intrusion at these critical connections.
	Building Enclosure Codes, Standards, and Building Science	TRS087	1 AIA LU/HSW	Understand how changes in how we Build has changed the dew point location of our Exterior Walls which requires the need for new codes, standards and building science. Review Exterior Wall Failures and discuss their causes Learn about the most common standards and codes for energy efficiency, durability and high performing buildings. Review current common ASTM and AMAA Standards for in Situ / on the Building validation testing.
	▶ Beyond Building Code – Why Code Compliance Isn't Enough and How We Can Do Better	TRS088	1 AIA LU/ HSW	This course will delve into the need for change, describe the many benefits of the "beyond code" approach, and demonstrate the ways to get there. The FORTIFIED building standard will be explained along with existing construction materials and methods that can help architects and builders develop structures that not only exceed code requirements but are disaster resilient with longer service lives.
	A Most Perfect Wall of All	TRS096	1 AIA LU/HSW	"A Most Perfect Wall of All" has been created for design professionals to learn more about a single wall construction of ICF that works in any climate zone to achieve the performances of water-, air-, vapor- and thermal-controls, fire-resistance, hurricane- and tornado-level wind resistances, and sound attenuation as required by codes. It expands into how this wall construction helps to achieve Net Zero energy consumption and to go beyond that goal in achieving Net Positive. It takes design professional audiences through how this single wall construction can provide their clients with "A More Perfect Wall" and "An Even More Perfect Wall" about the construction can be come for their clients with "A Most Perfect Wall" and "An Even More Perfect Wall" and "An
	Air, Water & Fire: A Building Science Medley	TRS097	4 AIA LU/HSW	Regardless of whether you are focused on new construction or restoration, commercial or residential construction, we want to engage you in this half day of learning. We have included an interactive day that will include instruction and hands on for all the elements of the building enclosure. We will start with building your structure with insulated concrete forms, to waterproofing and detailing all the connections throughout the enclosure, and provide an innovative approach to the roof. We've got you covered on your building enclosure needs.
(EIFS)	Continuous Insulation and Air Barriers for High Performance Framed Wall Assemblies	DRY003	USGBC / LEED 1.0 LU	Recent changes to Energy Codes such as the International Energy Conservation Code (IECC) and Energy Design Guidelines such as the ASHRAE Standard 90.1 are substantially increasing requirements for continuous insulation (ci) and air barrier integration into building envelope walls. This program examines all IECC and IBC 2012 code criteria that influence the design and construction of building envelope framed walls as well as the challenges associated with the integration of continuous insulation (ci) behind traditional veneer claddings such as increased wall thickness and support structure, there direct increase to code of construction as well as the coordination of air barrier compatibility and overall code defined fire performance requirements.
	"Barriers" to Achieving a Code Compliant Building Envelope Wall Assembly	DRY004- HSW	1 AIA LU/HSW	Recent changes to the 2012 and 2015 International Building Code (IBC) and International Energy Conservation Code (IECC) have substantially raised the bar toward the development of high-performance building envelope framed wall assemblies. These current or soon to be adopted code now require the integration of the following four (4) primary "Barriers" with a framed wall assembly: Water-Resistive, Air, Vapor Retarder and Thermal. This program explores the four (4) barrier code criteria, outlined their requirements and placements in the famed wall assembly and examines specifically the challenges associated with their integration and compatibility.
FINISH SYSTEMS (EIFS)	Advancements in EIFS for Today's Building Envelope Design Challenges	DRY005- HSW	1 AIA LU/HSW	This program specifically examines the major advancements in Exterior Insulation and Finish Systems (EIFS) which address the many challenges associated with today's building envelope design, construction and performance. EIFS solutions today offer tremendous versatility for system type, durability and aesthetic value along with diversity for use in new commercial or residential, restoration, renovation and modular / panelized constructions as a single specification source for continuous insulation (ci), air/water-resistive barrier (awrb) and NFPA 285 fire testing compliance.
TION &	EIFS 101: An Intro to Exterior Insulation & Finish Systems	DRY006- HSW	1 AIA LU/HSW	This presentation serves as an introduction to Exterior Insulation and Finish Systems (EIFS) as a single source exterior insulated cladding solution ideal for commercial or residential, new and retrofit construction.
EXTERIOR INSULATION & FINISH	▶ The Evolution of Brick – A New Insulated Masonry Veneer	DRYNB1- HSW	1 AIA LU/HSW / USGBC / LEED 1.0 LU	This program introduces a new Lightweight Insulated Brick Veneer cladding option which is applicable to all construction types and market segments. This lightweight insulated brick veneer incorporates the size, shape and scale of traditional clay or thin brick while most importantly retaining the classic and often desired aesthetic appearance of brick.
	Achieving a Comprehensive Building Envelope Wall Renewal Program	DRYRV1	1 AIA LU/HSW	Today, there is an enormous stockpile of existing, outdated and energy "inefficient" buildings – both occupied and unoccupied – which are impacting curb appeal, diminishing occupant comfort and reducing financial return. Through the goals of improved resiliency and sustainability with reduced environmental impact, there is increasing sensitivity toward existing building RENEWAL as opposed to existing building replacement.
	▶ Raise Expectations of Continuous Insulation & Air Barrier Systems	TRS075	1 AIA LU/HSW	Learn about current construction industry trends and how they have influenced the innovation of continuous insulation and air barrier products. It gives an overview of continuous insulation and air barrier fundamentals, compatibility, use in off-site and in-field construction, long-term performance, whole system testing, and whole system warranties.
	▶ Prefabricated EIFS-Clad Panel Assemblies	TRS092	1 AIA LU/HSW	This course addresses in detail the characteristics of prefabricated EIFS panel systems and differences compared to typical field installed EIFS. Three primary prefabricated EIFS panel types are discussed including the advantages of each, as well as typical design considerations for a panelized construction approach.

 $<sup>\</sup>blacktriangleright \ \ \text{symbol indicates courses available on-demand through} \ \underline{\text{https://tremco.learnupon.com/users/sign\ in}}$ 

CATEGORY	COURSE TITLE	COURSE NUMBER	CREDIT HRS/TYPE	DESCRIPTION
(ICF)	▶ An Introduction to Insulated Concrete Forms	NUD0704	1 AIA LU/ HSW	This program is designed to give participants an overview of the features, benefits and advantages of Insulated Concrete Forms as a better alternative for a building envelope. Such topics as thermal mass performance, fire resistance ratings, and sound attenuation performances are some of the key items discussed within this presentation. Additional discussions also covered are building types, environmental, design and construction benefits along with the basic installation techniques associated with this type of construction. Additionally, they will gain knowledge on various building codes and how ICF's are incorporated into these codes across the country.
	▶ General Commercial Buildings with Insulated Concrete Forms	NUD0705	1 AIA LU/ HSW	This program is designed to give participants a general overview of building commercial buildings with Insulated Concrete Forms ICF and show the benefits that they can provide during the design and construction phase. The course will also highlight the benefits to the building occupants and owners.
	Multi-Story Buildings Overview with Insulated Concrete Forms	NUD0706	1 AIA LU/ HSW	This program is designed to give participants a general overview of building Multi-Storey structures with Insulated Concrete Forms ICF and show the benefits that they can provide during the design and construction phase. The course will also highlight the benefits to the building occupants and owners. The program will also touch on the fire rating advantages and the speed of construction compared to traditional building methods.
	Building Educational Facilities with Insulated Concrete Forms	NUD0707	1 AIA LU/ HSW	This program is designed to give participants a general overview of building Educational structures with Insulated Concrete Forms ICF and show the benefits that they can provide during the design and construction phase. The course will also show how building with Insulated Concrete Forms will optimize energy performance, saving school boards on energy costs. The program also touches the health benefits that can be gained.
TE FORMS	Hospitality Facilities - Building with Insulated Concrete Forms	NUD0708	1 AIA LU/ HSW	This program is designed to give participants a general overview of building Hospitality Facilities with Insulated Concrete Forms ICF. The program will show how building with Insulated Concrete Forms will optimize energy performance, reduce building maintenance costs and reduce mould growth.
CONCRE	Medical Facilities Overview with Insulated Concrete Forms	NUD0709	1 AIA LU/ HSW	This program is designed to give participants a general overview of building Hospitality Facilities with Insulated Concrete Forms ICF. The program will show how building with Insulated Concrete Forms will optimize energy performance and provide healthier indoor air quality for building occupants.
INSULATED CONCRETE FORMS (ICF)	➤ Dispelling the Myths around Designing and Drafting with Insulated Concrete Forms (ICF)	NUD0710	1 AIA LU/ HSW	Misconceptions abound when it comes to designing and drafting with insulated concrete forms (ICF). Architects who are long accustomed to designing using conventional construction practices may be hesitant to suggest using an alternative method such as ICF construction for a multitude of reasons. Many may assume they'll need to redraft all their details from scratch, requiring a huge time investment; or they believe ICF construction is not economical. Some may also be concerned that they'll be limited to box-like structures, lacking in architectural detail or design flair. In this course, these and other fallacies will be examined and disproved, with specific project examples and details provided.
	➤ Resilient Design: Building Resilient Structures Using Insulated Concrete Forms	NUD0711	1 AIA LU/ HSW	Resilient design is the process of designing buildings, landscapes, and entire communities to mitigate the impact of extreme weather and other external threats. In recent years, resilient design has become vital given the increased intensity and frequency of major storms across the globe. Today's building structures must be able to withstand extreme weather events in order to protect building occupants and their livelihoods. Resilient design becomes even more important for critical infrastructure buildings, including storm shelters. Recent storms have shown us the devastating short- and long-term effects on our communities when these buildings are impacted by extreme events. Join us to learn how Insulated Concrete Forms (ICF) can provide a resilient and cost effective solution for building hardened structures that provide safety during extreme weather events.
	Nudura One Day Insulated Concrete Forms - ICF Training Course	211111	8 hour / 5 AIA LU	This 8 hour course gives the attendee the basic installation knowledge of Nudura Integrated Building Technology. Covers installation techniques, lintel design, reinforcing placement, concrete placement, mechanical installations, interior & exterior finishes and provides live demonstrations which allows for class involvement.
	Barrier The Three Little Pigs: Why Brick Was No Happy Ending	TRS094	1 AIA LU	This presentation will explore affordable building options and their impacts on energy efficiency, indoor air quality, sound transmission, wind and water resistance, and overall durability so that nature cannot huff and puff and blow homes' performance down, leading to damage from air and moisture intrusion, reduced thermal efficiency and increased utility bills.
SEALANTS	▶ Sealant Selection	TRS085	1 AIA LU/HSW	This course will review the different sealant chemistries and the part that they play in selecting a sealant. We will discuss the importance of proper joint design along with sealant failures and why they occur. This course also answers a variety of questions around choosing the right product.
	Fundamentals of Joint Design/Joint Sealants	TRS049	1 AIA LU/HSW	This course will review the process associated with design, specification and installation of joint sealants for high performance building enclosures. Course outlines benefits related selection of proper sealants for the vertical and horizontal joints subject to movement.
	The Critical Role Sealant Selection Plays in Your Project	TRS063	1 AIA LU	The right sealant can improve construction sustainability by preventing the entry of air, water, dust, light, and even sound. But to achieve these benefits, you must select the right one, and it is not as simple as grouping sealant chemistries together and assuming results. Vast differences have been reported within chemistry classifications. Understanding, and verifying through testing, adhesion, compatibility, and performance with every component, accessory, and substrate on your project are critical. This course will help participants understand all that is necessary to ensure the proper selection of sealant.
	▶ Hybrid Sealant Technology Basics	TRS074	1 AIA LU/HSW	This presentation reviews Hybrid Sealant Technology, and, distinguishes the differences between compressed sealant technology, traditional sealant, self-leveling and gland sealant systems. Applications and areas of use are reviewed for industrial and/ or commercial environments. Topics such as fire resistance, design, performance technology, surface preparation, installation techniques and engineering details are presented.

<sup>▶</sup> symbol indicates courses available on-demand through <a href="https://tremco.learnupon.com/users/sign">https://tremco.learnupon.com/users/sign</a> in

CATEGORY	COURSE TITLE	COURSE NUMBER	CREDIT HRS/TYPE	DESCRIPTION
	Roofing Options	TR1	1 AIA HSW	This course is a review of the many different roof system options available to the designer. It provides a basic examination of system strengths and weaknesses, life cycle expectations, energy conservation impacts and other sustainable considerations.
	The Importance of Quality Detailing	TRM002	1 AIA HSW	A discussion of the complexities of flashing details as they pertain to different roofing systems. This presentation provides procedures on how to improve the quality of the roofing system details by being code compliant and making other upgrades to the specifications.
	▶ Fluid Applied Roofing Systems	TRM028	1 AIA LU/ HSW and 1 IIBEC CEH	Fluid applied roofing systems are excellent choices for restoring degraded but still functioning roofs; they are also applicable for new construction. This course defines what "fluid applied" means. It also describes the different types, uses, and benefits of fluid applied roofing systems, including their ease of application, their potential for improving a facility's sustainability, and their flexibility for use as a flashing system.
9	Roof Preservation: A Sustainable Option	TRM029	1 AIA LU/ HSW and 1 IIBEC CEH	This course is a discussion about extending the service life of an existing roof through restoration. We will explore the options and materials available and identify which types of roofing systems are best candidates for
ROOFING	Roof Warranties	TRM046	1 AIA HSW	Roofing systems are one of the few commercial construction building assemblies offered with a long-term warranty. Design professionals and building owners must be aware of what is covered, and not covered, by a roof warranty as well as be familiar with the different types of warranties, terms and conditions, and any owner requirements. Attendees will be introduced to the Uniform Commercial Code (UCC) and an important bulletin from the National Roofing Contractors Association (NRCA). Methods for specifying high performance, long-lasting roof membrane and flashing systems will be explained. Risk mitigation with regards to roof design and installation will also be discussed.
	Designing Safety Solutions	TRM031	1 AIA HSW	This course is a review of rooftop safety, hazards, laws and codes. The aim is to develop and reinforce general awareness of the risks that can be alleviated with properly designed rooftop safety solutions.
	Codes and Approvals	TRM042	1 AIA HSW	The purpose of this seminar is to educate the Design Professional about how codes and approvals both govern and improve the quality and performance of a specified roof system. It reviews the International Building Code (IBC), International Energy Conservation Code (IECC), Energy Star Program, wind uplift considerations, Underwriters Laboratories (UL), and Factory Mutual (FM) requirements that pertain to the building envelope.
	Waterproofing Connectivity Solutions	TRS077	1 AIA LU/HSW	The presentation is a current overview of waterproofing technologies, the connections between the different waterproofing systems, and what key specifics to consider when developing a waterproofing specification. Additionally, the presentation reviews the current product trends within the waterproofing industry.
	Below-Grade Waterproofing Applications, Technologies & Risk-Mitigation	TRS084	1 AIA LU/HSW	Learn the most common below-grade installations and technologies that can be used in these applications, common reasons for membrane failure and risk mitigation practices.
WATERPROOFING	▶ Minimizing Risk in Blindside Waterproofing Applications	TRS062	1 AIA LU/HSW	While blindside waterproofing is becoming more prevalent due to congested construction and zero lot lines, they also result in challenges that require significant attention to detail. This course will identify blindside waterproofing product technologies, their differences, the criteria for product performance, and how to design a waterproofing system accordingly. Best practices for mitigating application risks and managing critical areas prone to moisture infiltration will be reviewed, including the sequence of installation and for detailing failure points.
	▶ Stop Water Intrusion and Make Your Building Enclo- sure Perform Like New	TRS065	1 AIA LU 1 IIBEC CEH	This presentation will feature case studies of water intrusion on actual projects; we will describe the investigation of existing facade, roof, and parking structure assemblies that included coatings, membranes, sealants and detailing, and the condition/performance of each. For each identified water intrusion issue, we will walk through the variety of solutions along with their challenges and benefits. We will select a solution for each issue and provide step-by-step guidance on the installation and application.
	▶ Build Better at Lower Cost by Controlling Infiltration	TRS066	1 AIA LU/HSW	This presentation discusses the impact of reduced air infiltration on energy use and the moisture dynamics that determine whether or not a residential or light commercial building is "too tight". Learn how lowering air infiltration compares to other alternatives for lowering energy use, including increased insulation values and reduced window U-values.
	Buried Waterproofing: What Constructors Need To Know	TRS098	1 AIA LU	"Buried Waterproofing: What Constructors Need To Know" provides a comprehensive look at the nuts-and-bolts of waterproofing a broad variety of buried conditions including backfilled wall, blindside wall, beneath-slab and between-slab with a variety of membranes including cold-applied rubberized asphalt, hot-applied rubberized asphalt, liquid-applied polyurethane and bentonite-composite sheets. Great time and emphasis is placed upon attention that needs to be given toward minimizing risks. Installation cost variables are presented along with plus-and-minus considerations of the membrane types covered toward making informed waterproofing system selections.

To schedule a seminar from the roofing category, please call 800.852.6013

 $<sup>\</sup>blacktriangleright \text{ symbol indicates courses available on-demand through } \underline{\text{https://tremco.learnupon.com/users/sign\_in}}$ 

CATEGORY	COURSE TITLE	COURSE NUMBER	CREDIT HRS/TYPE	DESCRIPTION
COATINGS	▶ PMMA/PUMA Technology	TRS090	1 AIA LU/HSW	This course is a discussion about the use of PMMA/PUMA technologies in the construction industry. This presentation exhibits key physical properties and the performance/benefits that they provide to the end user. Typical installation procedures recommended will be reviewed by for most common applications â€" vehicular coating and below-grade waterproofing.
DEEP ENERGY RETROFIT	The Deep Energy Retrofit Initiative: The ABCs of D.E.R.	TRS099	1 AIA LU	For facility managers, building owners, and contractors alike, adapting existing buildings to be more energy-efficient may seem like a daunting task. The Deep Energy Retrofit (DER) initiative is expanding across North America as a holistic building analysis and construction process to conserve the energy consumed by commercial and residential buildings. While the industry tackles this next wave construction innovation, the learning curve remains steep. Therefore, it is important that everyone takes on the task of learning about individual building inefficiencies and how they can be rectified. Join us for this informative presentation where we not only take you through the process that is needed, but also look at case studies where lessons have been learned and energy-efficient improvements have been made.
FIRE- STOPPING	Fire Stopping: History, Systems and Technology	TRS091	1 AIA LU/HSW	This course reviews the importance of firestopping, the history of and what technology is available. Review the system approach and testing
FLOORING	High Performance Industrial Flooring: Resinous Floors	TRS101	1.5 AIA LU	With so many industrial flooring technologies out there, how do you know which one is right for your project? This course will walk participants through common resinous flooring systems and applications and examine key considerations when choosing a system. At the end, participants will feel confident in their ability to select the correct system for their unique circumstances.
GLAZING	▶ Restoring Glazing System Performance without Sacrificing Aesthetics	TRS093	1 AIA LU/HSW	This course will look at restoring glazing system performance without sacrificing the aesthetics of your building. The course will discuss failed joints in vertical construction, enhancing the aesthetics of your building, restoring skylights, and maintaining the look of historic buildings.

 $\blacktriangleright \ \ \text{symbol indicates courses available on-demand through} \ \underline{\text{https://tremco.learnupon.com/users/sign\ in}}$ 



