











#### **COMMERCIAL GLASS SCHOOL**

An overview of basic glass processes, glass history and fabrication techniques. We'll review the benefits of high-performance reflective and Low-e coatings on glass. We'll also discuss potential problems faced by the designer when using fabricated architectural glass products. The last topic for review will be the differences between soft (sputtered) coated glass products and their pyrolytic counterparts.



#### BEST PRACTICES FOR DEVELOPING A COMMERCIAL GLASS SPECIFICATION

Get your glass specification correct the first time!
Attendees will learn ways to properly write a glass specification. Concentrating on the glass schedule best practices will be shared and common mistakes will be addressed. Having a properly written specification will ensure design goals are met; keeping the project on budget and on schedule. Prerequisite Knowledge:

A general knowledge of commercial glass terms and components should be known prior to the course.



#### VIRACON PLANT TOUR, GLASS FABRICATION SITE VISIT

An interactive production plant tour covering cutting, tempering, silk-screening, coating, laminating, special fabrication and insulating glass processes. Please schedule this program at least one month in advance. Travel costs to the plant facility are the responsibility of each attendee.

(HSW) - 1.0 AIA/CES Learning Unit

(HSW) - 1.0 AIA/CES Learning Unit

(HSW) - 3.0 AIA/CES Learning Units





## WHEN TO USE STOREFRONT OR CURTAIN WALL CONSTRUCTION

This presentation takes a high-level look at common causes of failures that occur repeatedly. This is not intended to make all field experts but to illustrate conditions that if identified early could prevent a failure. All stakeholders in a commercial project want to see it completed successfully and last years. Identifications of potential problems early will assist in the health and welfare of the commercial building and those who utilize the faculty.

### CURTAIN WALL DESIGN & SELECTION

This presentation focuses on Curtain Wall frame options within Division 8: Glass & Glazing. The main categories of curtain wall: Unitized and Stick, are described and compared. Within Stick Systems, we distinguish between I-Beam and Tubular Systems than review the various types of Tubular Systems. What is required for a leak to occur? We describe the 6 forces that can move water through a system and show how each impacts a curtain wall. The design principle of Pressure Equalization is explained along with its components and how this feature is designed to defeat the forces that move water. Curtain wall must be anchored so that it allows for movement. We conclude by reviewing various anchoring options.

(HSW/LU) AIA/CES Learning Unit: 1



This session explores solutions for designing high-performance facades to support modular construction trends in commercial and multifamily segments.

Modular Construction is an alternative delivery method that successfully drives construction efficiencies. Modular Construction also addresses the demand to reduce construction time and improve coordination of trades. This along with Green Construction practice's goal of reducing construction site waste all have made Modular Construction a method of choice in today's commercial construction.

(HSW/LU) AIA/CES Learning Unit: 1

# UTILIZING WINDOW WALL GLAZING SOLUTIONS FOR PERFORMANCE AND VERSALITY

In this presentation we will discuss how Window Wall Systems are installed slab to slab. You will learn how they are similar to storefront yet have performance like a Curtain Wall system. Window Wall has been designed to fill this niche and offer options demanded by residences that are not required in offices. A proper understanding of the benefits and options available with Window Wall will reveal this to be a great solution to your next high-rise multi-family project.

(HSW/LU) AIA/CES Learning Unit: 1











### PUSHING THE DESIGN ENVELOPE WITH FIRE-RATED GLAZING

Fire-rated glazing, combined with fire-rated framing, provides the maximum fire protection of people and property. Modern fire-rated framing has several design elements that allow the product to blend harmoniously with other design details. Flush interrupted surfaces can be achieved with a system having fewer vertical or horizontal framing members. Discrete joint intersections can be utilized as well, allowing the product to work with popular corner details. This allows for expansive curtain wall systems in applications that require high-span, self-supporting construction. This course will explore how to push the design envelope with fire-rated glazing and framing systems.

(HSW) AIA/CES Learning Unit: 1

## INTRODUCTION TO ARCHITECTURAL FIRE RATED GLAZING

Health, safety, and welfare remain a fundamental aspect of building design practices. Incorporating fire-rated glass products provides creative design options while adhering to current model building codes. The new generation of fire-rated products is available in larger sizes that can withstand a fire for longer periods of time, and many fire-rated products can provide high impact safety rating, solar control, sound reduction, bullet resistance and hurricane impact safety, to name only a few multi-functional features. This course will define categories of fire-rated glass products, as well as the related test standards and current building code requirements for specifying architectural fire-rated glazing.

(HSW) AIA/CES Learning Unit: 1

## SUSTAINABLE SOLUTIONS WITH ARCHITECTURAL FIRE-RATED GLAZING

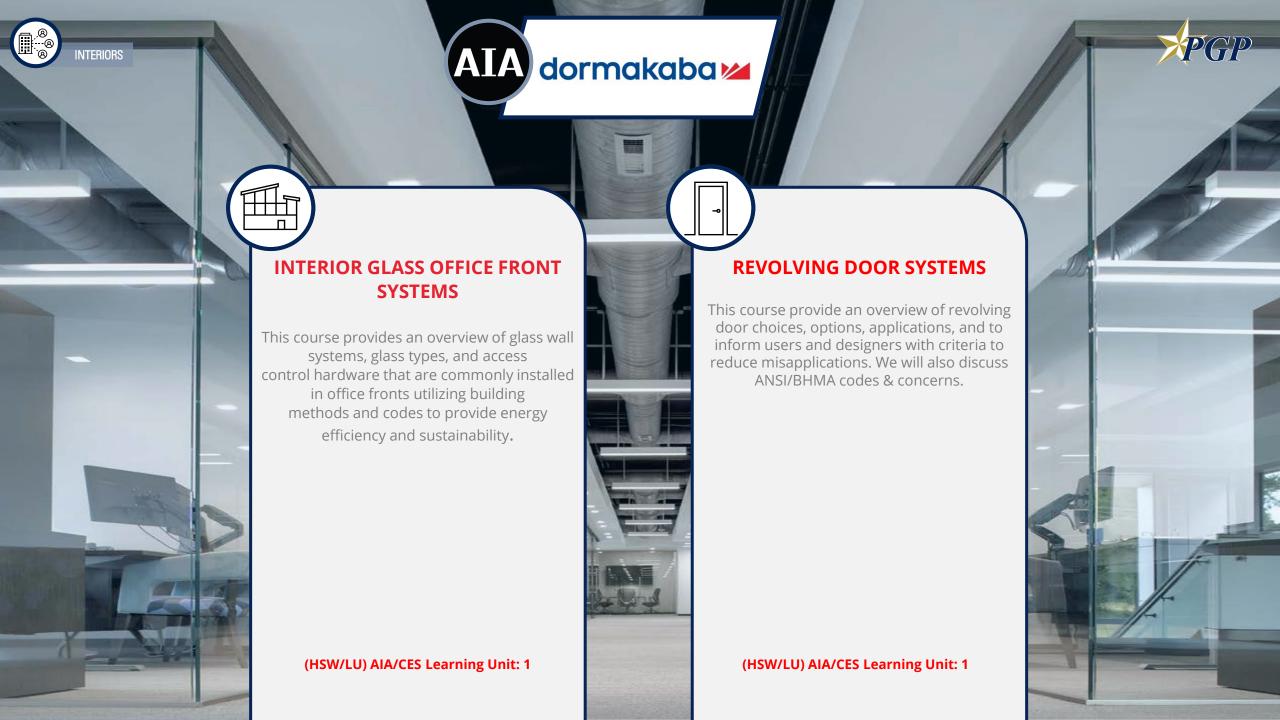
When considering integrated whole-building design and efficiency, choosing the proper glass products is critical. Fire-rated glass products can contribute to achieving points as environmentally preferable products in green building standards and codes. Architects, distributors, and contractors are demanding green products and services. This training will help to utilize and knowledgably discuss fire-rated glass and sustainability, including LEED, ENERGY STAR, Architecture 2030 Challenge, EPDs, and HPDs, to gain competitive advantage in the marketplace, help customers meet their green building and sustainability goals, and penetrate new markets.

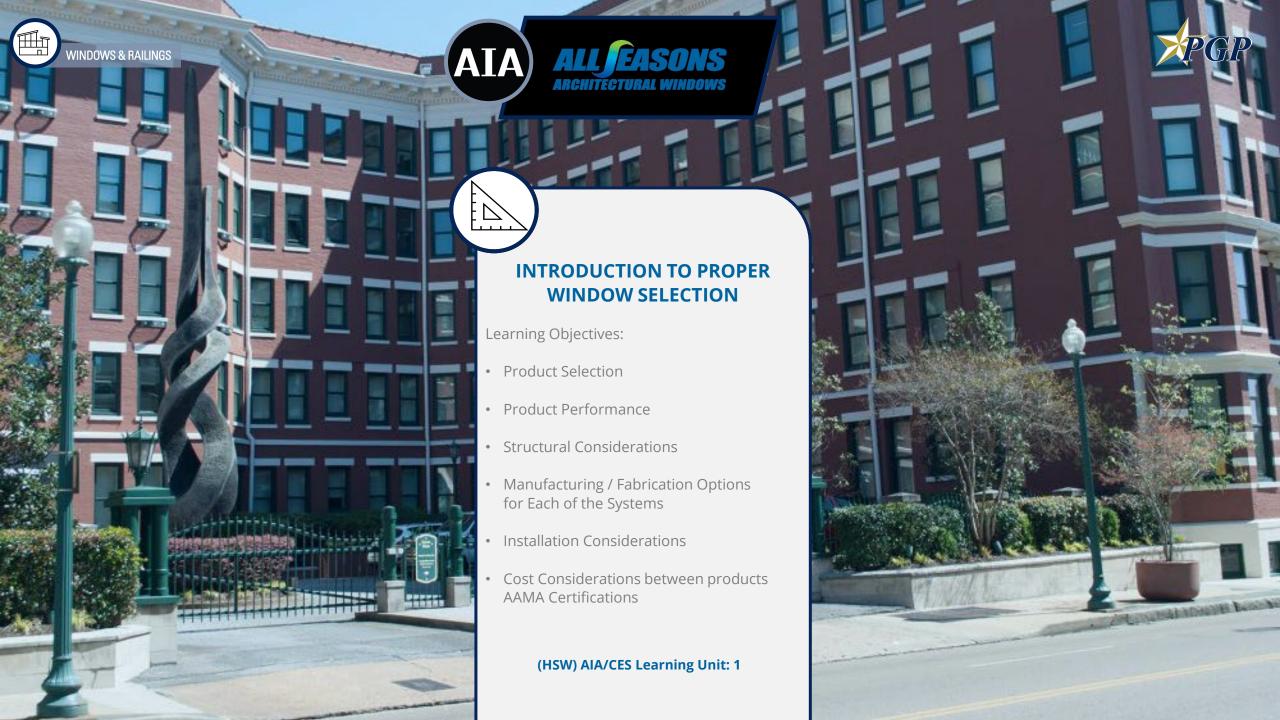


(HSW/LU) AIA/CES Learning Unit: 1

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### SPECIFYING THE RIGHT WINDOWS FOR YOUR PROJECT

Learning Objectives:

- Identify benefits and limitations of different window frame types
- Ensure products meet project energy performance and load requirements
- Evaluate glazing options and sound / impact / blast ratings to enhance building performance
- Ensure proper weatherproofing of projects by selecting the most effective installation method











### DETAILING RAILINGS FOR SAFETY + CONSTRUCTABILITY

In this course, we'll discuss what to expect and require from the architectural railing systems that you specify. This course covers all of the basics of architectural handrail and guardrail, from code and function to aesthetics, durability, installation and care.



## UNDERSTANDING AND SELECTING SECURITY WINDOW SCREENS

In this course, you will learn what a security screen is and how to select the appropriate security level for your project. The course will also touch on quality and safety issues and sustainable design at it applies to security screens.



## UNDERSTANDING WOVEN ROD BARRIERS + WIRE MESH SCREENS

This presentation discusses the purposes, fabrication practices, installation methods, thread levels and grades of woven rod barriers and security screens for correctional institutions.



#### DECONSTRUCTING ARCHITECTURAL RAILING SYSTEMS

In this course, we'll discuss what to expect and require from the architectural railing systems that you specify. This course covers all of the basics of architectural handrail and guardrail, from code and function to aesthetics, durability, installation and care.

(HSW/LU) AIA/CES Learning Unit: 1

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#### **SUN CONTROL SYSTEMS**

In this course one will be able to clarify the different types of sun control systems and their functions.

- You will know the Pros of using a sun control systems on your building
- Have confidence in what Industry metals are used for sun control systems
- You will have assurance in what industry finishes are used for each type of material
- You can design your systems to industry standard material widths and outrigger sizes
- Understand where to best utilized the different types of sun control systems on a building.

(LU) AIA/CES Learning Unit: 1



In this course one will be able to clarify the rain screen wall systems and their functions.

- One will be able to understanding how rain screens compare with barrier wall systems
- The difference between Pressure Equalized and Back Ventilated Systems
- Things to have in your rain screen specification
- Understanding NFPA 285
- Overview of AAMA 508, AAMA 509, ASTM 283, ASTM 330, ASTM 331
- Finishing options for Metal Wall Panels



