

Smoke Control Course II: Design Fires, Atrium Control and Tenability Systems

Course Description

This one-day course includes design fires, smoke plume mechanics, and types of atrium smoke control systems. The special topics of make-up air, minimum smoke layer depth, plug holing and pre-stratification are addressed. Methods of analysis, including algebraic equations, zone fire models, scale modeling and computational fluid dynamics (CFD) are discussed. Tenability analysis is addressed. A case study of atrium smoke control is included.

Learning Objectives

Upon completion the participant should be able to:

- Understand the benefits of performance-based smoke evacuation
- Demonstrate how computational fluid dynamics (CFD) can be used in performance-based fire protection designs to more accurately predict tenability and exhaust in atria.
- Review a prescriptive smoke exhaust calculation and identify shortcomings.
- Understand the design criteria and specific design objectives that must be met by smoke management systems and develop suitable criteria.

Pre-requisite:

Who Will Benefit: Experience level: Intermediate

FPEs, Code Officials, Plan Reviewers,

This seminar is intended for fire protection engineers and mechanical engineers who design smoke control systems. This seminar is for both beginning engineers and experienced engineers who need to be up to date with the advances in this technology. The seminar will also be of benefit to design project managers, manufacturers of equipment for air moving systems and code officials who need an understanding of this technology.

Materials Needed

Participants should bring with them the *Handbook of Smoke Control Engineering* (2012).

Course assessment

Participants will be assessed via a written test. A passing score of 70% is required to obtain a Certificate of Completion.

Professional Development Hours

Upon completion each participant qualifies for 7 PDHs or .7 CEUs. A Certificate of Attendance will be awarded.