

About the *Handbook of Smoke Control Engineering*

John Klote headed a three-year effort that resulted in this handbook. He was fortunate to have the support of an outstanding group of coauthors and reviewers. The publisher is ASHRAE, and the ICC, SFPE and NFPA are copublishers. The handbook is in both SI and IP units. It can be purchased from ASHRAE at www.techstreet.com/ashrae/products/1832347.

This handbook provides authoritative, comprehensive guidance on smoke control practice and engineering approaches. With more than 500 pages of in-depth guidance, the handbook describes smoke control technology, including fundamental concepts, smoke control systems, and methods of analysis. The handbook contains the information needed for the analysis of design fires, including considerations of sprinklers, shielded fires, and transient fuels.

Systems discussed in the handbook include those for stairwell pressurization, elevator pressurization, zoned smoke control, and atrium smoke control. Fire and smoke control in transport tunnels is addressed in a chapter of its own. There is a chapter on commissioning and special inspections, and another chapter deals with periodic testing.

For those getting started with the complex computer models CONTAM and CFAST, there are simplified instructions with examples focused specifically on smoke control applications. These instructions can help users to learn which of many sophisticated features of these models are appropriate for smoke control. The instructions for CONTAM include a section about speeding up data input which is intended to save users time and result in better simulations.

This is the first smoke control book with climatic data so that users will have easy-to-use weather data specifically for smoke control design for 1663 weather stations in the U.S., Canada, and throughout the world. Scale modeling and full scale fire testing are included. To help make the handbook useful as a textbook, it has an appendix with derivations of equations. As an aid to readers, the handbook includes many example calculations.

CONTENTS

- Chapter 1 – Units and Properties
- Chapter 2 – Climatic Design Data
- Chapter 3 – Flow of Air and Smoke
- Chapter 4 – Timed Egress Analysis
- Chapter 5 – Fire Science and Design Fires
- Chapter 6 – Human Exposure to Smoke
- Chapter 7 – Air-Moving Systems and Equipment
- Chapter 8 – Controls
- Chapter 9 – Basics of Passive and Pressurization Systems
- Chapter 10 – Pressurized Stairwells
- Chapter 11 – Pressurized Elevators
- Chapter 12 – Elevator Evacuation Systems
- Chapter 13 – Zoned Smoke Control
- Chapter 14 – Network Modeling and CONTAM
- Chapter 15 – Basics of Atrium Smoke Control
- Chapter 16 – Equations for Steady Atrium Smoke Exhaust
- Chapter 17 – Fire and Smoke Control in Transport Tunnels
- Chapter 18 – Zone Fire Modeling
- Chapter 19 – Tenability Analysis and CONTAM
- Chapter 20 – Computational Fluid Dynamics
- Chapter 21 – Scale Modeling
- Chapter 22 – Full-Scale Fire Testing
- Chapter 23 – Commissioning and Special Inspections
- Chapter 24 – Periodic Testing
- Appendix A – Derivations of Equations

