

1. Record Nr.	UNINA9910145900803321
Autore	Burgess William A. <1924->
Titolo	Ventilation for control of the work environment [[electronic resource] /] / William A. Burgess, Michael J. Ellenbecker, Robert D. Treitman
Pubbl/distr/stampa	Hoboken, N.J., : Wiley-Interscience, c2004
ISBN	1-280-34598-5 9786610345984 0-471-66704-8 0-471-66705-6
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (442 p.)
Altri autori (Persone)	EllenbeckerMichael J TreitmanRobert D
Disciplina	697.9/2
Soggetti	Factories - Heating and ventilation Industrial hygiene
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	VENTILATION FOR CONTROL OF THE WORK ENVIRONMENT; CONTENTS; List of Units; Preface; 1 Ventilation for Control; 1.1 Control Options; 1.2 Ventilation for Control of Air Contaminants; 1.3 Ventilation Applications; 1.4 Case Studies; 1.5 Summary; References; 2 Principles of Airflow; 2.1 Airflow; 2.2 Density; 2.3 Continuity Relation; 2.4 Pressure; 2.4.1 Pressure Units; 2.4.2 Types of Pressure; 2.5 Head; 2.6 Elevation; 2.7 Pressure Relationships; 2.7.1 Reynolds Number; 2.8 Losses; 2.8.1 Frictional Losses; 2.8.2 Shock Losses; 2.9 Losses in Fittings; 2.9.1 Expansions; 2.9.2 Contractions; 2.9.3 Elbows 2.9.4 Branch Entries (Junctions) 2.10 Summary; List of Symbols; Problems; 3 Airflow Measurement Techniques; 3.1 Measurement of Velocity by Pitot-Static Tube; 3.1.1 Pressure Measurements; 3.1.2 Velocity Profile in a Duct; 3.1.3 Pitot-Static Traverse; 3.1.4 Application of the Pitot-Static Tube and Potential Errors; 3.2 Mechanical Devices; 3.2.1 Rotating Vane Anemometers; 3.2.2 Deflecting Vane Anemometers (Velometer); 3.2.3 Bridled Vane Anemometers; 3.3 Heated-Element Anemometers; 3.4 Other Devices; 3.4.1 Vortex Shedding Anemometers; 3.4.2 Orifice Meters; 3.4.3 Venturi Meters

3.5 Hood Static Pressure Method3.6 Calibration of Instruments; 3.7 Observation of Airflow Patterns with Visible Tracers; 3.7.1 Tracer Design; 3.7.2 Application of Visible Tracers; List of Symbols; References; Manufacturers of Airflow Measuring Instruments; Manufacturers of Smoke Tubes; Problems; 4 General Exhaust Ventilation; 4.1 Limitations of Application; 4.2 Equations for General Exhaust Ventilation; 4.3 Variations in Generation Rate; 4.4 Mixing; 4.5 Inlet/Outlet Locations; 4.6 Other Factors; 4.7 Comparison of General and Local Exhaust; List of Symbols; References; Problems; 5 Hood Design  
5.1 Classification of Hood Types5.1.1 Enclosures; 5.1.2 Exterior Hoods; 5.1.3 Receiving Hoods; 5.1.4 Summary; 5.2 Design of Enclosing Hoods; 5.3 Design of Exterior Hoods; 5.3.1 Determination of Capture Velocity; 5.3.2 Determination of Hood Airflow; 5.3.3 Exterior Hood Shape and Location; 5.4 Design of Receiving Hoods; 5.4.1 Canopy Hoods for Heated Processes; 5.4.2 Hoods for Grinding Operations; 5.5 Evaluation of Hood Performance; List of Symbols; References; Appendix: Exterior Hood Centerline Velocity Models; Problems; 6 Hood Designs for Specific Applications; 6.1 Electroplating  
6.1.1 Hood Design6.1.2 Airflow; 6.2 Spray Painting; 6.2.1 Hood Design; 6.2.2 Airflow; 6.3 Processing and Transfer of Granular Material; 6.4 Welding, Soldering, and Brazing; 6.5 Chemical Processing; 6.5.1 Chemical Processing Operations; 6.6 Semiconductor Gas Cabinets; 6.6.1 Entry Loss; 6.6.2 Optimum Exhaust Rate; 6.7 Low-Volume/High-Velocity Systems for Portable Tools; Example 6.1 Calculation of Exhaust Rate for Open-Surface Tanks; Example 6.2 Design of a Low-Volume/High-Velocity Exhaust System; List of Symbols; References; 7 Chemical Laboratory Ventilation  
7.1 Design of Chemical Laboratory Hoods

---

## Sommario/riassunto

The second edition of Ventilation Control of the Work Environment incorporates changes in the field of industrial hygiene since the first edition was published in 1982. Integrating feedback from students and professionals, the new edition includes problems sets for each chapter and updated information on the modeling of exhaust ventilation systems, and thus assures the continuation of the book's role as the primary industry textbook. This revised text includes a large amount of material on HVAC systems, and has been updated to reflect the changes in the Ventilation Manual published by ACGIH

---