

Construction Standards

| Accepted Industry Practices For Sheet Metal Lagging

Providing numerous examples of sheet metal lagging applications, this publication assists the designer, contractor and plant engineer in understanding and solving the complexities involved in the design, fabrication and installation of sheet metal lagging systems. It presents accepted industrial practices for the application of sheet metal lagging to industrial duct, pipe, tanks, boilers, furnaces and other accessories. Also illustrates the requirements of the most commonly encountered insulated surfaces, such as boiler walls, flues, ducts, precipitators, air heaters, economizers, tanks and fans.

128 pages. 1st Ed., 2002.

- Book Order #1806, Discounted Price: \$86 / List Price: \$124
- CD Order #1806-CD, Discounted Price: \$104 / List Price: \$150
- CD/Book Order #1806, Discounted Price: \$142 / List Price: \$205

| Architectural Sheet Metal Inspection Guide

An invaluable inspection resource for owners of standing seam, batten seam, or Bermuda-type roofs. Presents practical troubleshooting and corrective tips for typical problems of roof panels, gutters, downspouts, fascia, copings, flashing, ridges and hips, valleys, expansion joints, penetrations, fasteners and soldering. Also provides relevant information regarding construction of these architectural elements, the purpose of each, as well as what to look for during periodic inspections. Sealants, moisture transfer methods and air leakage are also covered. Emphasizes the importance of regular and appropriately timed inspections because a small problem discovered early can be fixed at a low cost, preventing minor damage from becoming a substantial problem until the cost of repair and remediation becomes excessive. Contractors will find this book a valuable resource to provide owners or facility managers along with the standard building completion documents. 52 pages. 1st Ed., 2004

- Book Order #1937, Discounted Price: \$59 / List Price: \$83
- CD Order #1937-CD, Discounted Price: \$70 / List Price: \$99
- CD/Book Order #1937, Discounted Price: \$97 / List Price: \$136

| Architectural Sheet Metal Manual

This completely updated publication contains the most comprehensive recommended practices available for proper design and installation of custom-fabricated architectural sheet metal including roof drainage system design for scuppers, gutters and downspouts. Features an expanded historical restoration section covering skylights, cornices, domes, and spires; new moisture and maintenance guide on underlayments; mechanical fasteners and soldering qualification guidance; and updated metals selection data. Offers new construction techniques and alternative methods of design and installation reflecting climatic conditions and rainfall rates. An upfront, fast “look-up” key speeds information retrieval. Also covers flashing, metal roofs, copings, gravel-stop fascia. Includes wind uplift pressure test reports confirming superior performance of custom-fabricated metal roofing. Applies to commercial, industrial, and residential buildings.

542 pages. 7th Ed. 2012.

- Book Order #1120, Discounted Price: \$242 / List Price: \$346
- CD Order #1120-CD, Discounted Price: \$291 / List Price: \$416
- CD/Book Order #1120, Discounted Price: \$401 / List Price: \$573

Standard Practice in Sheet Metal Work

Back by popular demand! This fascinating book stimulates the imagination, generating ideas for re-creating yesterday's designs with today's technology. More than a historical look at custom architectural sheet metal, this publication contains a graphic collection of system designs, including pattern layouts representing the Old World practices in the industry that have been developed over generations and proven over decades of use. With today's emphasis on

restoration, refurbishing, rebuilding, retro-designs and retrofitting, architects will find this publication more than of historical interest. Architectural sections include elaborate cornices, skylights, domes, spires, spun balusters, gargoyles, marquise, storefronts, metal buildings and metal roofs. A majority of drawings are to scale. Another section is on heating and ventilation systems including gravity furnaces. Blowpipe sections cover design, layout, construction and equipment. (Available on CD-ROM only.)

768 pages. Reprint of 1929 Ed.

• CD Order #1175-CD, Discounted Price: \$199 / List Price: \$283

I Fire, Smoke And Radiation Damper Installation Guide For HVAC Systems

An application and installation study guide for architects, engineers, code officials, manufacturers and contractors outlining their respective responsibilities mandated by the model codes. Covers fire dampers, breakaway connections, combination fire and smoke dampers, framing of structural openings, contract plan marking, installation instructions and special applications. Also contains information on active and passive smoke control systems and smoke detectors, plus soft metrics. The appendices on smoke control and smoke detectors have been revised to reflect the current technology and requirements for those applications.

142 pages. 5th Ed., 2002.

• Book Order #1819, Discounted Price: \$79 / List Price: \$113

• CD Order #1819-CD, Discounted Price: \$95 / List Price: \$136

• CD/Book Order #1819, Discounted Price: \$131 / List Price: \$186

Guidelines For Roof Mounted Outdoor Air-Conditioner Installations

Contains guidelines for the installation of roof-mounted outdoor air-conditioner equipment as developed by SMACNA and the Air-Conditioning & Refrigeration Institute (ARI). To be used as a supplement to the unit manufacturer's specific installation instructions. This booklet of waterproofing illustrations and reminders covers curb and roof penetrations and sealings, as well as the interface between the roof and the location at which the unit, piping, electrical wiring or sheet metal ductwork pass through the roof. This guideline supersedes ARI Guideline B-1986. (Not available on CD-ROM.) 28 pages. 2nd Ed., 1997.

• PDF Only #1715, Discounted Price: \$9 / List Price: \$9

CADD Drawings Architectural Sheet Metal Manual

CADD drawings of the illustrations in SMACNA's 7th edition of the *Architectural Sheet Metal Manual* are available for download and use in CAD programs. These drawings illustrate the best practices in custom architectural sheet metal work. Purchase individual files in DWG format for immediate download or get all 188 figures in DWG format on an individual CD-ROM. Architects and designers are encouraged to use this invaluable resource to assure that their specifications reflect professionally vetted design details.

DWG CADD drawing \$20 each.

(Download from www.smacna.org)

• CD Order #1190-CD, Discounted Price: \$207/List Price: \$295

I Guide For Free Standing Steel Stack Construction

Contractors, designers, and engineers will find this guide a very valuable resource, as tables containing hundreds of stacks are detailed and ready to go. This new publication updates the 1996 *Guide for Steel Stack Construction*, second edition, incorporating text and tables. New are design considerations for free standing stacks under resonant vibration, established limits on stacks fitted with testing platforms, larger stack selection diameters, and consideration of custom designed anchoring systems instead of a standardized schedule. Includes tables for selection of free standing stacks from 20 feet to 120 feet high, and diameters to 120 inches, companion flange, stiffener sizes and stacks with access ladders and platforms.

93 pages. 3rd Ed., 2011.

• Book Order #1167, Discounted Price: \$86 / List Price: \$124

• CD Order #1167-CD, Discounted Price: \$104 / List Price: \$150

- CD/Book Order #1167, Discounted Price: \$142 / List Price: \$205

| Guyed Steel Stacks

A standard of practices for the design, fabrication and installation of guyed steel stacks intended for use by contractors, fabricators, and designers of heating equipment and industrial process facilities, among others. Devoted exclusively to vertical, uniform diameter, guyed stacks either founded at ground level or through-the-roof installations. Tables provide for stacks of heights ranging from 20 ft. to 80 ft; for specific wind velocities of 100, 125, and 150 miles per hour; and diameters of 12 in. to 72 in. Stacks are listed for either longseam welded or spiral lockseam fabrication. 66 pages. 1st Ed., 2011.

- Book Order # 1127, Discounted Price: \$75 / List Price: \$108
- CD Order # 1127-CD, Discounted Price: \$90 / List Price: \$130
- CD/Book Order # 1127, Discounted Price: \$120 / List Price: \$173

| HVAC Duct Systems Inspection Guide

Contains guidelines for inspection of commercial HVAC duct systems for compliance with *SMACNA/ANSI HVAC Duct Construction Standards—Metal and Flexible*, (3rd Ed.) and *Fibrous Glass Duct Construction Standards* (7th Ed.). It reviews materials and reinforcement of duct systems, as well as assembly and supports of ducts. The *Fire, Smoke and Radiation Damper Guide* (5th Ed.) also summarizes installation details. Checklists are included for ductwork and fire dampers. Valuable as a study guide for the HVAC Duct Construction Standards manual and for learning inspection procedures in general. Includes soft metrics. - 158 pages. 3rd Ed., 2006.

- Book Order #1987, Discounted Price: \$113 / List Price: \$161
- CD Order #1987-CD, Discounted Price: \$136 / List Price: \$193
- CD/Book Order #1987, Discounted Price: \$186 / List Price: \$266

| HVAC Duct Construction Standards—Metal & Flexible

The third edition of the *HVAC Duct Construction Standards – Metal and Flexible* is intended primarily for commercial and institutional duct construction. The standard contains tables and details for constructing ductwork for ½” to 10” wg positive and negative pressures. This edition improves upon the second edition with expanded pressure class tables, separate tables for TDC/TDF construction and expanded tables for round duct construction including 6” wg positive and negative pressure and sizes up to 96”. New in this edition is an engineering and design chapter to provide additional information to design professionals, double-wall construction details, new casing construction details and additional accessory items. The standard is applicable for construction using uncoated steel, galvanized and stainless steels and a limited range of aluminum ducts. This standard has been adopted in the ICC International Mechanical Code. Includes soft metrics.

390 pages. 3rd Ed., 2005.

- Book Order #1966, Discounted Price: \$174 / List Price: \$247
- CD Order #1966-CD, Discounted Price: \$205 / List Price: \$293
- CD/Book Order #1966, Discounted Price: \$284 / List Price: \$405

HVAC Duct Construction App

SMACNA's new app for its flagship manual *HVAC Duct Construction Standards—Metal & Flexible* greatly simplifies finding construction options for rectangular duct with dimensions up to 120 inches for applications from negative to positive 10-inch water gage.

The scenarios for the app are limited to joint lengths of 4, 5, and 6 feet. The transverse connections are limited to T1 (flat drive), T5 (flat slip), T10, 11, and 12 (standing slips) and T25 a or b (TDC/TDF). Where appropriate, the app will also provide options for intermediate reinforcement. The full range of reinforcement spacing options is 6, 5, 4, 3, 2-1/2, and 2 feet.

Plus, it provides the most commonly used options, but does not provide every possible solution and is no substitute for the book. While a terrific tool to enhance field productivity, it is intended to be used in conjunction with *HVAC Duct Construction Standard—Metal & Flexible*, an American

National Standard (ANSI).

Available for \$12.99 from the Apple and Google app stores

| Kitchen Ventilation Systems And Food Service Equipment Fabrication Installation Guidelines

A basic reference guide to industry-accepted practices for fabrication and installation of commercial kitchen ventilation systems and custom-built food preparation equipment. Assists the designer, contractor and code officials in understanding the complexities of designing, installing, constructing and balancing both the exhaust and make-up air systems required in commercial kitchen ventilation. The food service equipment section offers practical guidelines for designing, fabricating, evaluating and installing a wide range of custom-built food service equipment. Includes tables, shelves and wall lining details as well as minimum dimension and metal thickness standards for constructing light, medium and heavy-duty kitchen equipment that should provide owners with years of trouble-free usage. Developed in accordance with ANSI/NSF-2-1996. Also included is an appendix that provides application details for the seismic bracing of food service equipment. 199 pages. 1st Ed., 2001.

- Book Order #1767, Discounted Price: \$86 / List Price: \$124
- CD Order #1767-CD, Discounted Price: \$104 / List Price: \$150
- CD/Book Order #1767, Discounted Price: \$142 / List Price: \$205

| Residential Sheet Metal Guidelines

The first edition of SMACNA's *Residential Sheet Metal Guidelines* offers contractors, designers, builders and homeowners a source of expert information on the proper fabrication and installation of exterior sheet metal in residential buildings. Covering topics that include roof drainage systems, decks, chimneys, windows, doors and ledges, the new manual presents details and explanations based on and designed for low-rise residential buildings, up to three stories, that are used as single-family and multi-family dwellings. The guide also highlights details commonly used in residential sheet metal work throughout the industry. In addition to generic detail drawings, design data and the appendixes will help users adapt the drawings to local climate and project conditions. Carefully examining the information along with the local climate conditions will enable users to select the proper details for practically any residential architectural sheet metal application. 130 pages. 1st Ed., 2001.

- Book Order #1754, Discounted Price: \$113 / List Price: \$161
- CD Order #1754-CD, Discounted Price: \$136 / List Price: \$193
- CD/Book Order #1754, Discounted Price: \$186 / List Price: \$266

| Seismic Restraint Manual: Guidelines for Mechanical Systems

The *Seismic Restraint Manual: Guidelines for Mechanical Systems*, 3rd edition 2008, ANSI/SMACNA 001-2008, is an updated set of guidelines that shows designers and contractors how to determine the correct restraints for sheet metal ducts, piping and conduit, so that they are more likely to remain attached to the building during an earthquake. The manual shows how very low- and very high-risk areas of the country can be accommodated. Includes a more extensive list of bracing options and complies with current building codes all within a single document for user convenience. 202 pages. 3rd Ed., 2008.

- Book Order #1981, Discounted Price: \$152 / List Price: \$230
- CD Order #1981-CD, Discounted Price: \$182 / List Price: \$259
- CD/Book Order #1981, Discounted Price: \$250 / List Price: \$367

| Seismic Restraint Manual OSHPD Edition

This special edition has been developed to meet the specific requirements of the California Office of Statewide Health Planning and Development (OSHPD) for hospital and health care facilities construction. The seismic hazard tables with this special edition are limited to the SHL A ($g = 0.67$) and SHL AA ($g = 1.0$) applicable to the hospital and health care facilities outlined in the use of the manual. The manual is not intended to cover the ordinary supports for ducts and pipes required for gravity loads. The only restraints shown in the tables and figures are those needed to

provide the extra support for seismic loads. 146 pages. 1st Ed., 2009

- CD Order #1995-CD, Discounted Price: \$182 / List Price \$288
- Order PDF at www.smacna.org/store

| Sheet Metal Welding Guide

This publication and the wealth of information it contains are intended to assist contractors, estimators and shop supervisors in profitably managing the welding activity in a sheet metal shop. Updated coverage of welding processes; flux-cored wire guidelines; and the latest equipment. The safety chapter covers such items as health effects, hazard controls and safety procedures. Other chapters include guidelines for developing welding procedures, controlling weld quality, estimating, hiring and training welders and welder certification.

174 pages. 3rd Ed. 2007.

- Book Order #1999, Discounted Price: \$86 / List Price \$124
- CD Order #1999-CD, Discounted Price: \$104 / List Price \$150
- CD/Book Order #1999, Discounted Price: \$142 / List Price \$205

Design Guides

| Ducted Electric Heat Guide For Air Handling Systems

A comprehensive application and installation guide of ducted electric heaters and important factors relating to application, selection, location, installation and control. 42 pages. 2nd Ed., 1994.

- Book Order #1079, Discounted Price: \$30 / List Price: \$41
- CD Order #1079-CD, Discounted Price: \$36 / List Price: \$49
- CD/Book Order #1079, Discounted Price: \$49 / List Price: \$68

Duct System Calculator

This calculator, complete with detailed instructions, enables HVAC system designers to design an average duct system without additional references. The only calculator in the industry to include the 0.0003 roughness factor duct friction loss data for designing straight, round or rectangular sheet metal ducts. Also available in metric. Circular slide rule. 1988.

- Imperial: Order #1052, Metric: Order #1065
- Discounted Price: \$39 / List Price: \$39

| HVAC Systems—Duct Design

Presents the basic methods and procedures required to design HVAC air distribution systems. Offers the HVAC system designer and installer detailed information on duct design, materials and construction methods. In addition to the basic engineering guidelines for the sizing of HVAC ductwork systems, the manual also provides related information on economics of duct systems, duct system layout, pressure losses, fan selection, duct leakage, acoustic considerations, and Testing, Adjusting and Balancing (TAB). Both U.S. and metric units are provided in all examples, calculations, and tables. 392 pages. 4th Ed., 2006.

- Book Order #1958, Discounted Price \$148 / List Price \$213
- CD Order #1958-CD, Discounted Price \$178 / List Price \$254
- CD/Book Order #1958, Discounted Price \$245 / List Price \$350

Duct Standards

| Accepted Industry Practice For Industrial Duct Construction

This guide is a compilation of accepted industry practices and construction techniques having received wide acceptance for the fabrication and installation of industrial duct systems. Covers round (long-seam and spiral) duct from 4 in. to 60 in. in diameter, reinforced or unreinforced, for operation from 4 in. to 20 in. wg positive or negative pressure, and from ambient to 650° F for carbon or stainless steel, 400° F for galvanized steel, and 120° F for aluminum. Also rectangular

duct fabricated from panels from a few inches up to 5 ft wide, all welded, Pittsburgh, grooved seam pipe lock or standing seam joined duct, for operation from 4 in. to 20 in. wg positive or negative pressure, and for the same materials and temperature limits as round duct. Also includes chapters on industrial applications, material properties, hangers and supports, fittings, vents, doors, discharge ducts (small stacks) and surface preparation of metals.

210 pages. 2nd Ed., 2008.

- Book Order #1108, Discounted Price: \$110 / List Price: \$159
- CD Order #1108-CD, Discounted Price: \$132 / List Price: \$191
- CD/Book Order #1108, Discounted Price: \$182 / List Price: \$262

I Fibrous Glass Duct Construction Standards

Provides the performance characteristics for fibrous glass board as determined by the North American Insulation Manufacturers' Association (NAIMA) and Underwriters Laboratories (UL) as well as specifications for closures and illustrations of how to construct the full range of fittings. Also covers details for connections to equipment and air terminals, hanger schedules, reinforcement requirements, fabrication of rectangular duct and fittings, closures of seams and joints, channel and tie rod reinforcements, plus hangers and supports. For 2" wg or less. Metric units have been provided in a more convenient format, as well as an updated inspection checklist.

88 pages. 7th Ed., 2003.

- Book Order #1884, Discounted Price \$110 / List Price \$159
- CD Order #1884-CD, Discounted Price \$132 / List Price \$191
- CD/Book Order #1884, Discounted Price: \$182 / List Price: \$262

I HVAC Air Duct Leakage Test Manual

This American National Standard, ANSI/SMACNA 016-2012, covers revised leakage criteria and builds on the proven methods for testing ductwork for air leaks from the first edition. Contains updates to the expected leakage rates for ductwork constructed to the SMACNA *HVAC Duct Construction Standards—Metal & Flexible*, duct leakage test procedures, recommendations on use of leakage testing, types of test apparatus and test setup and sample leakage analysis. Includes a new educational chapter for designers and specifiers, to aid in the specification and implementation of duct leakage and testing methods. 122 pages. 2nd Ed., 2012

- Book Order #1972, Discounted Price: \$73 / List Price: \$104
- CD Order #1972-CD, Discounted Price: \$87 / List Price: \$124
- CD/Book Order #1972, Discounted Price: \$116 / List Price: \$166

Duct Air Leakage Calculator App *FREE*

This simple to use, but effective, application allows engineers, architects, designers, and contractors to easily and accurately estimate the leakage of air from ductwork. Also allows a quick and easy way to determine the pass/fail mark for properly specified Duct Air Leakage Tests (DALT). Users can combine multiple sections of ductwork that vary by size and shape to calculate a total allowable leakage. Uses the method outlined in SMACNA's *HVAC Air Duct Leakage Test Manual*, and provides suggested leakage classes. Method used is compliant with ASHRAE 90.1, IECC, IGCC Version 2, IMC and the UMC. Compatible with Apple iPhone/iPad/iPod Touch, Android. Version 1.1. 2011. **To download, visit the Apple iTunes Store and search for "SMACNA" or DALC. Or scan this mobile tag with your smartphone.**

I Rectangular Industrial Duct Construction Standards (Inch Pound)

The second edition of the *Rectangular Industrial Duct Construction Standards* expands the scope of the 1980 version, updating original text to incorporate a revised theory of design, new materials and more "user friendly" tables. Included are new tables for stainless steels and aluminum, plus expanded chapters on materials, welding practices, and a guide specification. It covers the simple, low or moderate temperature and pressure (or vacuum) indoor systems as well as the more complex outdoor systems that operate at moderate to high temperature and pressure (or

vacuum), and are subject to higher and more complex external loading. 448 pages. 2nd Ed., 2004

- Book Order #1922, Discounted Price: \$244 / List Price: \$339
- CD Order #1922-CD, Discounted Price: \$292 / List Price: \$407
- CD/Book Order #1922, Discounted Price: \$402 / List Price: \$560

| Rectangular Industrial Duct Construction Standards, SI (Metric) Version

Written specifically for the international market, the *Rectangular Industrial Duct Construction Standards, SI* (Metric—le Système International d'Unités) version is based on the same theoretical work and scope of the Inch Pound (I-P) version, 2nd edition, published 2004. The difference between the two publications is that the data in the SI version is expressed in metric units and the ratings are based on using materials produced under and to ISO standards, in both strength and physical dimensions—Hard Metric. Refer to the *Rectangular Industrial Duct Construction Standards I-P* version for publication description.

444 pages. 2nd Ed., 2007.

- CD Order #1943-CD, Discounted Price \$292 / List Price \$407

| Residential Comfort System Installation Standards Manual

This publication incorporates complete and comprehensive installation standards for conventional heating and cooling systems. The manual incorporates the current technology available for contractors and designers to provide a state-of-the-art system. Sections include load calculations, duct design, duct construction, insulation, vents, air terminals, control applications, system specifications and other updated industry equipment and methods for residential systems. Also covered are forced air heating, heat pumps, automatic control thermostats, flues and sound and vibration. Includes soft metrics.

150 pages. 7th Ed., 1998.

- Book Order #1689, Discounted Price: \$75 / List Price: \$108
- CD Order #1689-CD, Discounted Price: \$90 / List Price: \$130
- CD/Book Order #1689, Discounted Price: \$120 / List Price: \$173

| Round Industrial Duct Construction Standards

This edition expands the scope of the 1977 version, updating original text to incorporate a revised theory of design, new materials and more “user friendly” tables. Offers a standardized, engineered basis for design and construction of industrial ducts of Classes 1 to 5. Includes a spiral duct chapter for Classes 1 and 2, covers design pressures ranging from 30” wg negative to 50” wg positive, plus carbon and galvanized steel tables. Changes to the manual include expanded tables for stainless steel and aluminum, expanded tables for duct sizes up to 96 inches in diameter, introduction of a new Duct Class 5 for systems handling corrosives, and spiral lockseam pipe. As alternatives to table use, the publication has a manual calculation procedure using equations and fully developed examples, and offers optional calculation software. Includes soft metrics.

648 pages. 2nd Ed., 1999.

- Book Order #1520, Discounted Price: \$244 / List Price: \$339
- CD Order #1520-CD, Discounted Price: \$292 / List Price: \$407
- CD/Book Order #1520, Discounted Price: \$402 / List Price: \$560

| Thermoplastic Duct (PVC) Construction Manual

Contains the latest and most useful information from manufacturers, fabricators, and corrosion specialists on the use and application of thermoplastic materials. This fully illustrated manual provides full construction details and standards for PVC ducts of 2”, 4”, 6” and 10” wg positive and negative. It gives guidance in understanding these synthetic materials, as well as assistance in determining their strengths, corrosion resistance and advantages over other materials. A model specification enables one to easily prepare custom project documents for installation of PVC air handling systems. Also covered are polypropylene and polyethylene, CPVC, LDPE, HDPE, UHMW,

ABS, acrylics, and PVDF. Includes soft metrics. 146 pages. 2nd Ed., 1995.

- Book Order #1378, Discounted Price: \$98 / List Price: \$140
- CD Order #1378-CD, Discounted Price: \$117 / List Price: \$168
- CD/Book Order #1378, Discounted Price: \$161 / List Price: \$231

I Thermoset FRP Duct Construction Manual

SMACNA contractors researched the current and future potential use of fiberglass reinforced plastic (FRP) duct as well as its physical properties, to provide contractors, architects, engineers, managers, and plant owners with this authoritative resource that can be relied upon for the proper selection, manufacture, and installation of FRP duct systems. Covers design procedures for the manufacture and installation of round duct systems ranging from 4 to 72 inches in diameter, and rectangular duct systems ranging from 12 to 96 inches in width and depth, operating at a static pressure within a range from -30 to +30 in. wg and within a temperature range from ambient to 180° F. Includes soft metrics.

208 pages. 1st Ed., 1997.

- Book Order #1546, Discounted Price: \$110 / List Price: \$159
- CD Order #1546-CD, Discounted Price: \$132 / List Price: \$191
- CD/Book Order #1546, Discounted Price: \$182 / List Price: \$262

Other

SMACNA Bubble DVD Destroys Design Myths

Formerly known as SMACNA's "Bubble Video," this updated educational tool for designers, engineers and contractors illustrates how good duct design and careful planning to avoid conflicts can be used to improve airflow and reduce HVAC system fan power. The HVAC fan is one of the largest energy users in commercial-class buildings. The video presentation employs helium-filled bubbles to visually illustrate airflow through a duct system fitted with a clear plastic side. A number of duct fittings are used to illustrate airflow movement variations through a duct system. It references both SMACNA manuals, *HVAC Systems—Duct Design and HVAC Duct Construction Standard—Metal & Flexible*, tying actual airflow performance to the "flat" drawings and commentary within both publications. 15 minutes. DVD. 2009.

- Order # 1085, Discounted Price: \$115 / List Price: \$144

Business

Guidelines for Change Orders

This manual presents the reasons for change orders, describes the type of change orders, assesses the risk of change orders and provides guidelines for pricing and selling change orders. CD-ROM is interactive.

96 pages. 3rd Ed., 2003.

- Book Order #5254, Discounted Price: \$100 / List Price: \$100
- CD Order #5254-CD, Discounted Price: \$125 / List Price: \$125
- CD/Book Order #5254, Discounted Price: \$165 / List Price: \$165

Financial Tools For SMACNA Contractors

Bridging the gap between construction operations and business functions, this practical guide shows how to manage a construction firm effectively. Teaching fundamental financial concepts and providing information to apply the concepts in today's business world, it covers interpreting financial statements, accounting practices, work in process, job cost accounting, financial analysis and indicators, projections and budgets, effective use of credit, protecting company, assets and information, and making decisions in volatile conditions. Breaks the financial and management processes for a sheet metal company into three sections: 1) the foundation - getting the basics right and on time, 2) the structure - understanding where you are and looking at the road ahead and 3) the process - making decisions and overcoming roadblocks.

105 pages. 1st Ed., 2004.

- Book Order #5267, Discounted Price: \$250 / List Price: \$250
- Order PDF at www.smacna.org/store

HVAC Bid Specification Reference Manual

Designed to help contractors interested in preparing accurate and competitive bids, the manual also guides owners and designers in the preparation of a complete bid package. Organized around the Construction Specifications Institute Master Format™, the publication consists of 18 sections divided into two parts. Part one covers administrative requirements associated with bidding and contracting for the installation of HVAC systems for commercial and institutional (CII) facilities. Part two covers the technical requirements associated with specifying materials and equipment for HVAC systems –the basis for HVAC system procurement and installation. 167 pages. 1st Ed., 2007.

- CD Order #5280, Discounted Price: \$129 / List Price: \$185
- Order PDF at www.smacna.org/store

HVAC Contractors Guide To Bidding Green Building Projects

HVAC contracting firms interested in successfully bidding green building construction projects must be aware of additional requirements if the project is design-build, construction, commissioning, closeout and warranty period. This guide introduces HVAC contracting firm personnel to green building construction and provides information that will help them successfully bid green building construction projects. Updated to comply with LEED™ Version 3 (v3) green building rating systems. 40 pages. PDF, 2nd Ed., 2009.

- PDF Order #5319, Discounted Price: \$85 / List Price: \$85
- Order PDF at www.smacna.org/store

HVAC Systems: Understanding the Basics

This comprehensive non-technical manual provides an overview of HVAC systems used in residential, commercial, and institutional buildings. Addresses HVAC system basics, central heating and central cooling equipment, hydronic and air distribution systems, central HVAC systems, HVAC system controls and the components that comprise these systems. Can be used for self-study, group training, or reference. Complements SMACNA's *HVAC Bid Specification Reference Manual* that helps HVAC contractors prepare bids and proposals for HVAC systems.

230 pages. 1st Ed., 2009.

- CD Order #5306, Discounted Price: \$129 / List Price: \$185
- Order PDF at www.smacna.org/store

Sheet Metal Made Lean And Clean

This guide is an introduction to owners, managers and workers in sheet metal fabrication and manufacturing shops to the principles and methods of lean production. It defines the application of lean production to sheet metal shop operations and provides an assortment of tools to make shop operations more efficient.

28 pages. 1st Ed., 1999.

- Book Order #5202, Discounted Price: \$70 / List Price: \$70
- Order PDF at www.smacna.org/store

Successful Building Project Coordination

Provides a basic orientation on the key role HVAC contractors play in project coordination. Covering coordination and project delivery as well as coordination methods, the document concludes with an introduction to Building Information Modeling (BIM) as it impacts the construction team plus a short treatment on the problematic topic of data file transfer. The guide explains the critical importance of project coordination on commercial and institutional construction projects.

27 pages. PDF, 1st Ed., 2009.

- PDF Order #5332, Discounted Price: \$85 / List Price: \$85

• Order PDF at www.smacna.org/store

Safety

Construction Safety Checklist

This handy safety tool provides supervisors and foremen with an easy-to-use overview of construction safety and health issues that should be inspected regularly. Checklists come in booklets of 20 three-part “carbon copy” forms enabling one person to keep the original, give a copy to others (GC, mechanical contractor, client, etc.) and also keep a “file” copy. 20 pages. 1st Ed., 2007.

• Book Order #3570, Discounted Price: \$40 / List Price: \$40

SMACNA Guide To Fall Protection

This comprehensive compliance manual covers OSHA’s fall protection standard for the construction industry. Contains a complete overview of the regulation, training checklist and certification form, a glossary of terms, and a reprint of the OSHA regulation from the Federal Register. Also includes 20 Fall Protection Toolbox Talks. 104 pages. 1st Ed., 1995.

• Book Order #3219, Discounted Price: \$52 / List Price: \$72

• Order PDF at www.smacna.org/store

SMACNA Personal Protective Equipment Manual

Contractors interested in complying with OSHA’s standard on personal protection equipment will find this valuable. The guide provides information on current OSHA requirements and various types of PPE. Training requirements are covered and more than 30 toolbox talks are provided.

90 pages. 1st Ed., 1998.

• Book Order # 3388, Discounted Price: \$25 / List Price: \$25

• Order PDF at www.smacna.org/store

SMACNA Respiratory Protection Compliance Guide

Assists contractors in complying with the OSHA respiratory protection standard. Contains a sample program, training information, and compliance checklists. Contains informative toolbox talks to assist with refresher training.

116 pages. 1st Ed., 1998.

• Book Order #3401, Discounted Price: \$65 / List Price: \$65

• Order PDF at www.smacna.org/store

SMACNA Scaffold Compliance Manual

Covers the OSHA Standards for Scaffolds—Subpart L of the 1926 Standards for Construction. Provides contractors with a basic overview of the regulation, contains specifics on some of the common scaffolds used in the sheet metal and air conditioning industry, and includes compliance checklists that can be used as jobsite inspection forms.

88 pages. 1st Ed., 1997.

• Book Order # 3362, Discounted Price: \$72 / List Price: \$72

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Environmental Publications

| Building Systems Analysis and Retrofit Manual

Provides methods to assess the major energy using elements of an existing building— HVAC&R, plus electrical (lighting and motors). Contains detailed guidance on how to develop a plan to reduce energy and water usage, beginning with a walk-through audit, with expansion to total building commissioning. Methods discussed include using automation systems and controls, envelope improvements for roof and exterior wall systems, strategies to control energy demand

including thermal energy storage and HVAC system selection. Contractors developing new business strategies targeting the renovation of existing buildings will find the content quite useful; as will owners interested in urban redevelopment and low-cost entry into green building.

144 pages. 2nd Ed., 2011.

- *Book Order # 1156, Discounted Price: \$86 / List Price: \$124*
- *CD Order # 1156-CD, Discounted Price: \$104 / List Price: \$150*
- *CD/Book Order #1156, Discounted Price: \$177 /List Price: \$205*

| IAQ Guidelines For Occupied Buildings Under Construction

An authoritative source of project management guidance in maintaining satisfactory indoor air quality (IAQ) of occupied buildings undergoing renovation or construction. Covers how to manage the source of air pollutants, control measures, quality control and documentation, as well as communication with occupants. Includes example projects, tables, references, resources, and checklists; plus more extensive appendices, references, resources, planning and inspection checklists, and model specifications. Offers guidance on HVAC equipment early start-up and duct cleanliness for new construction. Methods to identify and remediate lead, asbestos, or other materials that are classified as hazardous materials are not intended to be within the scope of this standard.

131 pages. 2nd Ed., 2007. ANSI/SMACNA 008-2008.

- *Book Order #1072, Discounted Price: \$104 / List Price: \$150*
- *CD Order #1072-CD, Discounted Price: \$124 / List Price: \$179*
- *CD/Book Order #1072, Discounted Price: \$171 / List Price: \$247*

| Indoor Air Quality – A Systems Approach

This manual provides for a system-type approach to identifying and solving indoor air quality (IAQ) concerns, while introducing the fundamentals of IAQ. The manual also updates the technical aspects of IAQ with regard to typical contaminants found in today's facilities. Other topics covered are testing and identification and source mitigation. Time-saving IAQ tracking forms can be modified to meet specific contractor needs.

170 pages. 3rd Ed., 1998.

- *Book Order #1637, Discounted Price: \$98 / List Price: \$140*
- *CD Order #1637-CD, Discounted Price: \$117 / List Price: \$168*
- *CD/Book Order #1637, Discounted Price: \$161 / List Price: \$231*

| Energy Systems Analysis And Management

Presents an updated level of technical information necessary for energy conservation and retrofits of today's commercial facilities. Provides building owners, facility managers, contractors, and system designers with the tools needed to evaluate an existing facility for energy savings potential. Items of special interest include performance contracting, CFC refrigeration regulation, and new automation system open protocols. Other topics covered include HVAC heat recovery, energy auditing, operation and maintenance, and indoor air quality. 344 pages. 1st Ed., 1997.

- *Book Order #1624, Discounted Price: \$103 / List Price: \$147*
- *CD Order #1624-CD, Discounted Price: \$124 / List Price: \$176*
- *CD/Book Order #1624, Discounted Price: \$165 / List Price: \$235*

| TAB Procedural Guide

This guide is intended for trained TAB technicians to assure that the appropriate procedures are employed in an effective manner. Includes general as well as specific guidance for both air- and water-side HVAC system adjusting and balancing. Variable air volume, multi-zone, dual duct and exhaust air systems are examples of the systems specifically covered and time-saving forms are included for precise record keeping during the conduct of a TAB project. Assists TAB technicians with preplanning and establishing teams so that energy use is minimized whether the work is done in new or existing buildings.

116 pages. 1st Ed., 2003.

- Book Order #1910, Discounted Price: \$77 / List Price: \$109
- CD Order #1910-CD, Discounted Price: \$89 / List Price \$127
- CD/Book Order \$1910, Member Price \$124 / List Price: \$177

| HVAC Sound And Vibration Manual

Contractors charged with resolving complaints related to sound and vibration will find the first edition of SMACNA's *HVAC Sound and Vibration Manual* an in-depth HVAC-specific guide in the art of sound and vibration measurement and mitigation. This comprehensive book covers mechanical vibration, acoustical design of mechanical systems, sound generation and attenuations associated with ducts and fittings, mechanical equipment sound and vibration specifications and inspections, plus sound and vibration instrumentation and measurements.

222 pages. 1st Ed., 2004. (Available on CD only)

- CD Order #1858-CD, Discounted Price: \$184 / List Price \$263

| HVAC Systems Sound and Vibration Procedural Guide

This guide details methods and processes that, when followed, provide repeatable measurement and verification of sound and vibration (S&V) levels, as required by new and emerging building codes. Instrumentation standards, sound measurement procedures, vibration inspection methods, and vibration measurement procedures are included in the guide. Written for trained sound and vibration testing supervisors and technicians, this publication also is a useful aid to assist designers developing project specifications for sound and vibration testing requirements.

56 pages. 1st Ed., 2013

- Book Order #1068, Discounted Price: \$59 / List Price: \$83
- CD Order #1068-CD, Discounted Price: \$70 / List Price: \$99
- CD/Book Order #1068, Discounted Price: \$97 / List Price: \$136

| HVAC Systems — Testing, Adjusting and Balancing

This new version has been extensively updated from the 1993 version and includes all of the many changes that have taken place in the HVAC industry. New sections covering VFD, DDC, lab hood exhaust balancing, and the latest changes in balancing equipment and procedures are included. 407 pages. 3rd Ed., 2002.

- Book Order #1780, Discounted Price: \$153 / List Price: \$220
- CD Order #1780-CD, Discounted Price: \$184 / List Price: \$263
- CD/Book Order #1780, Discounted Price: \$253 / List Price: \$362

| HVAC Systems — Applications

Focuses primarily on the advancement of HVAC systems' technology, with increasing emphasis on energy efficiency and the emergence of green and sustainable building. Provides guidance for HVAC system selection, operation, and design. Covers the fundamentals of space condition requirements and explains how the various types of air, hydronic and refrigeration HVAC system designs can be applied to buildings. Individual chapters detail system information for controls, multi-zone, dual duct, terminal reheat, variable air volume, induction and special applications such as dedicated outside air and thermal energy storage.

442 pages. 2nd Ed., 2010.

- Book Order #1099, Discounted Price: \$110 / List Price: \$160
- CD Order #1099-CD, Discounted Price: \$133 / List Price: \$189
- CD/Book Order #1099, Discounted Price: \$177 / List Price: \$262

| HVAC Systems – Commissioning Manual

Commissioning is the process of ensuring the HVAC system meets the owner's operational requirements. This American National Standard, ANSI/SMACNA 014-2013, expands on this and also includes LEED project information, current terminology for commissioning of existing buildings as well as other updates to resources and technologies. The commissioning process works effectively for projects large and small, simple as well as complex and applies to the commercial, industrial and institutional markets. This practical how-to guide is for contractors,

owners and engineers interested in learning about commissioning for new buildings and re-commissioning for existing buildings. Separate chapters are devoted to the different levels of commissioning, including basic, comprehensive and critical system commissioning. A thorough explanation of re-commissioning leads one through the preliminary investigation, survey and documentation phase, the design and installation of system modifications and the actual re-commissioning test. The appendix contains a sample HVAC Systems Commissioning Specification, complete from the planning to the final execution stage. Additionally, the topic's functional performance testing, operator training, MSDS forms and equipment data sheets and O&M manuals are covered. It also includes sample reports and timesaving pre-start and start-up checklists. Use of these tested and proven sample forms and specification will save hours of valuable time.

200 pages. 2nd Ed., 2013.

- *Book Order #1059, Discounted Price: \$64 / List Price: \$90*
- *CD Order #1059-CD, Discounted Price: \$77 / List Price: \$108*
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