

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS,
INC.

1791 Tullie Circle, N.E.

Atlanta, GA 30329

404-636-8400

TC MINUTES COVER SHEET

TC/TG/TRG NO TC 5.2 DATE June 25, 2019

TC/TG/TRG TITLE Duct Design

DATE OF MEETING June 25, 2019 LOCATION Kansas City, MO

MEMBERS PRESENT	TERM TO	MEMBERS ABSENT	Y E A	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Tim Eorgan, Chair	6/30/19			Larry Smith, Section Head
Chris Van Rite, Vice Chair	6/30/21			Micah Dawson, 2021 Handbook Chair
John Constantinide, Sec.	6/30/21		X	Ralph Koerber, Codes & Standards Interaction Chair
Pat Brooks, ALI Coord.	6/30/19			Bob Reid, 2019 Handbook Chair
David Dias	6/30/19			Patrick Brooks, ALI Liaison
John Hamilton	6/30/19			Akshay Bhargava, Membership Chair
Cindy Bittel, Webmaster	6/30/20		X	Vikram Murthy, CM
	6/30/20	Bill Smith		Billy Prewitt, CM
	6/30/20	Neal Walsh		Randy Young, CM
Wes Davis	6/30/21			Robert Hassler, CM
John Gierzak	6/30/21			Tim Morris, CM
Ralph Koerber	6/30/21			Bass Abushakra, CM
	6/30/22	Scott Hobbs		Charles Culp, CM
				Kartik Patel, PCM
				Allison Bailes III, PCM
				Shawn O'Hara, G
				Todd Einck, G
				Jennifer Kane, G

* Member Non-Quorum

CM = Corresponding Member

PCM = Provisional Corresponding Member

G = Guest

DISTRIBUTION

All Members of TC plus the following:	
TAC Section Head	Larry Smith
TAC Chair	Kelley P Cramm
2021 Handbook Liaison (Fundamentals)	Dr. Bass Abushakra
2020 Handbook Liaison (Systems & Equipment)	To be determined.
Research Liaison	Dennis L. Loveday
Standards Liaison	Dr. Arsen Melikov
ALI/PDC Liaison	James Bochat
Chapter Technology Transfer Liaison	Somasundaram Natarajan
Staff Liaison	Mike Vaughn

**AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR-CONDITIONING
ENGINEERS**

**1791 Tullie Circle, N.E.
Atlanta, GA 30329**

ASHRAE Annual Conference, Kansas City, MO

TC 5.2 Duct Design

Tuesday, June 25, 2019

Time: 3:30-6:00 PM

Kansas City Convention Center (KCCC), Rm 2214

1) Call to Order

2) ASHRAE Code of Ethics Commitment (Tim Eorgan)

“In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interest. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.)”

3) Introductions and Attendance

- a) Introduction of people present
- b) Quorum was reached with 10 members
- c) Quorum requires 7 members present
- d) Corrections/additions and approve agenda

4) Atlanta (January 2019) Meeting Minutes

The Atlanta minutes were approved 8-0-0-5 CNV on Friday, March 8, at 5:00 pm Eastern Time. The approved minutes were uploaded to Basecamp.

5) Special Announcements (Tim Eorgan)

- a) ASHRAE Mission – To serve humanity by advancing the arts and science of heating, ventilation, air conditioning, refrigeration and their allied fields.
- b) ASHRAE Vision - A healthy and sustainable built environmental for all.
- c) TC 5.2 Scope - TC 5.2 is concerned with the design, characteristics and construction of all types of ductwork for the handling of air and other gases, but does not include chimneys.

6) Section Head Report (Tim Eorgan for Larry Smith)

- a) Section Head 5.0 Highlights --- *The Section 5.0 Chairman's breakfast was held 6:30 AM to 8:00 AM, KCCC 2215B&C on Sunday, June 23, 2019.*
 - i) New format with all TC chairs and Vice Chairs attending. We have 94 active TCs with 11 MTGs.
 - ii) Larry Smith, Craig Wray, Steve Idem, Pat Brooks and Bob Reid got special recognition for reviewing and categorizing 50 boxes of research papers that belonged to Herman Behls.
 - 1. Herman Behls Research Archive – Larry Smith, Pat Brooks, Steve Idem, and others reviewed research data, documents, and

paperwork that belonged to Herman Behls and was acquired by to ASHRAE Headquarters for sorting and cataloging.

b) Please update your online ASHRAE bio.

7) Handbook Liaison Report (Dr. Steve Idem for Dr. Bass Abushakra)

a) Deadline to submit the revised and approved chapter is June 7, 2020.

b) By now, the following should be complete.

- i) Handbook Subcommittee Chair and members appointed;
- ii) Reviewed current chapter for any revisions;
- iii) Extent of revisions to be known;
- iv) Appointed revisers;
- v) Revisions about to be completed;
- vi) Have a tentative date for completing the revision (i.e. timeline); and
- vii) Send the revised chapter to the Liaison.

8) TC 5.2 Items (Tim Eorgan)

a) Consulting Engineers & Contractor involvement – *Always looking for more involvement*

b) Update on the Honors and Awards for the “*The Herman and Dorothy Behls Travel Award and the Herman and Dorothy Behls HVAC Designer Certification Award*” (Steve Idem/Larry Smith)

- i) The fundraising is almost complete. Many thanks to the Behls family for their contributions.
- ii) As of today, the endowment has \$24,900, with commitment funding from the ASHRAE Illinois Chapter.
- iii) Donations can be made online at the ASHRAE Foundation website. The link to the Foundation website is posted on Basecamp.
- iv) The hope is to have the inaugural recipients attend the ASHRAE 2021 Chicago Winter Meeting from the Illinois Chapter.

9) Subcommittee Reports (See [Attachment A.](#))

a) Handbook

i) We have two chapters — portal is available for 5.2 members can go on line to review and make changes to the Handbook in a collaborative effort

ii) 2020 Handbook: HVAC Systems & Equipment, Duct Construction – Bob Reid (Chair), David Dias, Ralph Koerber

1. The proposed revisions for the chapter have been uploaded to Basecamp. The most substantive additions were including references to Standard 215 and dates of referenced codes.

2. The revisions were collected from two review periods: the first was from 30 days after the Atlanta Winter Conference; the second was provided subsequently until April 19.

3. John Constantinide moves, with second by Cindy Bittel, to approve the proposed revisions for the Handbook chapter. Concerns noted on Basecamp were addressed. **Vote: 7-1-1 CNV. Motion passes.**

4. **Action Item:** Bob Reid and Ralph Koerber will take the approved handbook chapter to publications.

iii) 2021 Handbook: Fundamentals, Duct Design – Micah Dawson (Chair), Vikram Murthy, Wes Davis, John Constantinide, Jeff Boldt

b) Membership (Randy Young for Akshay Bhargava)

i) A complete list can be found at

<https://tc0502.ashraetcs.org/membership.php>.

ii) *Mentorship — We can help new members latch on to an experienced member to get better acquainted with the TC and industry.*

- iii) Acknowledge our PCMs: New members over the past 6 months are as follows.
 - 1. Mr. Christopher Ruch
 - 2. Mr. George Games
 - 3. Mr. Mohammad Daoud
 - 4. Mr. Vinod Venugopal
 - 5. Mr. Joseph Chin
- iv) PCMs who want to be upgraded to CMs should contact Randy Young at randy@smw104.org.
- v) Voting Members rolling off on July 1, 2019, are as follows.
 - 1. Tim Eorgan
 - 2. Pat Brooks
 - 3. David Dias
 - 4. John Hamilton
- vi) Voting Members rolling on July 1, 2019, are as follows.
 - 1. Dr. Stephen Idem
 - 2. Akshay Bhargava
 - 3. Bob Reid
 - 4. Kevin Gebke
 - 5. Randy Young
- vii) New individuals joining the committee must go to the website at www.ashrae.org/joinatc. By joining online, you are instantly placed on the committee and gives you immediate access to committee information.
- viii) If you join the TC, please provide your e-mail address to Randy Young to be added to the Basecamp for access to additional committee information and opportunities.
- c) Programs (Steve Idem)
 - i) In response to the 2020 Challenge, two programs have been submitted. A third program is being developed. This is noted in [Attachment B](#).
- d) Duct Design Guide (DDG) (Pat Brooks)
 - i) Committee met last Sunday. Chapter 10 was finished. All chapters are posted on Basecamp.
 - ii) Projected date to sell the DDG by the Orlando Winter Conference.
 - iii) Pat Brooks moves to publish the Duct Design Guide, with a second from Wes Davis. Only editorial changes will be addressed from here on, if passed. **Vote: 9-0-0 CNV. Motion passes unanimously.**
 - iv) Contact was made with Sidney Michaels with publications to submit chapters for publishing. **Action Item:** Pat Brooks will continue to work with Cindy Michaels on DDG publication.
- e) Duct Fitting Database (DFDB) (Pat Brooks)
 - i) A meeting with Mark Owen was made to have a change of contractors due to the lack of progress on updating the database. Steve Idem representing Tennessee Tech will create a proposal to submit to Mark Owen.
 - ii) Mark Owen has agreed to send the code to the next contractor. The intent is to have the code updated to work with other programs with no issues.
 - iii) DFDB will be joined with DDG.
 - iv) Several documents owned by Herman Behls and cataloged at ASHRAE HQ relate to the work for the DFDB.
- f) Codes & Standards Interaction (Ralph Koerber)
 - i) The report is in [Attachment C](#).

- ii) I-Codes are in their 2021 revision cycle addressing energy and mechanical portions. All proposals were published May 22, with comment periods ending July 19.
 - iii) IAPMO is in 2021 revision cycle and in second round, with a published report of comments as of March 22. The TC met to consider comments and had final vote on June 7. Assembly hearings will be held in September.
 - iv) NFPA 90A and 90B are in the 2021 revision cycle. TC will meet on August 13 to review comments and develop second draft report for final vote to be the 2021 version.
- g) ASHRAE Learning Institute (ALI) (Pat Brooks)
- i) Mark Owen will have learning programs created through ALI for the DDG and DFDB.
- h) Webmaster (Cindy Bittel)
- i) TC 5.2 Website: <https://TC0502.ashraetcs.org/>
 - ii) Website is up-to-date.
 - iii) Akshay Bhargava will be the new webmaster. The transition is complete.
- i) Liaison Reports
- i) 90.1 (Mark Smith/Jeff Boldt): No report.
 - ii) 189.1: Public review of summer 2020, with release of fall 2021. Addendum AD is of interest, with language of duct insulation conflicting with 90.1. That language was removed. TC 5.2 will not have a liaison to attend 189.1 meetings, until further notice.
 - iii) IMC ASHRAE Code Interaction of Standard Committee (John Hamilton): No meetings to attend.
- j) Research (Kevin Gebke/Stephen Idem)
- i) Duct Design Guide (1180-RP): DDG is approved per the TC's vote on publishing the guide. **Action Item:** Pat Brooks will contact Mark Owen about how to address providing a research report to RAC, since the DDG is intended to be the research report. The Research Liaison and Research Subcommittee Chair will be included in the correspondence.
 - ii) RTAR for Textile Fittings in Ducts: The proposed project will look at friction loss for fabric fittings and straight duct fabric fittings. Aim for submission in the fall. **Action Item:** Kevin Gebke will complete the RTAR for the proposed project.
- k) Standards (Kevin Gebke)
- i) No action on Standard 120.
 - ii) Standard 126 was reaffirmed by the TC on Monday, May 27, 2019, at 5:00 pm Eastern Time, by letter ballot with a vote of 8-0-1-4 CV.
- l) Historian (Bob Reid): Three boxes of copyrighted publications were found in the cataloged boxes that were owned by Herman Behls with relevance to the TC. The titles of the reference materials will be placed on Basecamp, but they will not be placed on the TC website. A reference library will be formed, and references will be mailed out upon a TC member's request. **Action Item:** Bob Reid will get the list of references for the Herman and Dorothy Behls Reference Library.
- m) Duct Sealants Chair (Larry Smith): Industry feedback was not in favor of a guideline but, at the time, to incorporate updates to the Handbook chapters. Ultimately, a Basecamp will be set up to address this topic. John Constantinide will help with the Basecamp logistics.
- n) TAC Liaison Report (Larry Smith): TAC will address the complexity of the TC MOP and enforce the MOP. They will progressively address TC consolidation and disbandment. They approved the block schedule approach to meetings.

10) Deadlines

Deadlines for the 2020 Winter Conference, which will be held in Orlando, FL, February 2020 are:

Monday, July 8, 2019: Final Conference Papers Due - Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment); Request for Conference Paper Sessions Due

Friday, July 26, 2019: Conference Paper Accept/Revise/Reject Notifications

Friday, August 2, 2019: Seminar, Workshop, Forum, Debate, and Panel Proposals Due

Friday, August 9, 2019: Revised Conference Papers/Final Technical Papers Due

Friday, August 26, 2019: Conference and Technical Paper Final Accept/Reject Notifications

Friday, October 4, 2019: Seminar, Workshop, Forum, Debate, and Panel Accept/Reject Notifications

11) Old Business

a) Action Items (Note: All Action Items will be placed on Basecamp.)

TC 5.2 Duct Design Action Items			
#	Description	Assigned to	Status
1a	TC 5.2 will reach out to the following market segments for additional engagement and representation: a. Practicing Engineers and Commissioning Agents; b. Code Authorities/Authorities Having Jurisdiction; c. Building Owners and Managers via BOMA, IFMA, USGBC; d. SMACNA; and e. General Contractors and Mechanical Contractors, including Testing and Balancing Contractors, through organizations such as ACCA and SPIDA.	TC Leadership	Active & Placed in Agenda, Remove from Action Items
1b	Duct Design Guide: a. Complete and publish the Duct Design Guide. b. Develop and promote educational and training material based on the Duct Design Guide for the practicing engineer, through the ASHRAE Learning Institute (ALI), and with engineering students at the college level.	Larry Smith & Pat Brooks. Refer to 1180-RP progress.	DDG is published. On way to completion. Remove.
1c	Present seminars and publish papers in response to publication and research based off of SPC 215 Method of Test to Determine Leakage of Operating HVAC Air-Distribution Systems.	Larry Smith, with Bob Reid assisting	Remove from Action Items.
1d	Develop long-range and maintenance plans for the Duct Fitting Database, including incorporation of research.	Pat Brooks and Larry Smith. Refer to Agenda Item 8e for DFDB Subcommittee Report.	In progress with subcommittee. Can remove from action items.
3	Write content for the Duct Design chapter of the Fundamentals Handbook related to gypsum board.	Larry Smith, Ralph Koerber, and John Hamilton	Complete
4	Write a paragraph of content that can be published in the Duct Design chapter of the Fundamentals Handbook, to be reviewed by the former PMS of 1764-RP.	Dr. Steve Idem	Complete
5	TC must approve Duct Construction chapter of the HVAC Systems Handbook at the Annual Conference.	Bob Reid to provide Content to John Constantidine for VM distribution.	Complete
6	Pending ADI's approval, a trip will be planned for TC 5.2 to Florida Solar Energy Center in Cocoa, FL to the 2 lab houses on Friday before the AHR Expo.	Chris Van Rite	In progress
7	Find a speaker for the TC 5.10-sponsored program session for the 2020 Orlando Winter Conference. This speaker will provide a contractor's perspective on prefab vs constructed on-site supply duct for this session.	Randy Young	Complete

12) New Business

- a) Textile Air Dispersion Systems Design Guide
 - i) A chapter about textile air dispersion systems was removed from the DDG. This chapter can turn into an ASHRAE special publication, with sponsorship from the TC. Pat Brooks moves to for TC 5.2 to be the sponsoring committee for the Textile Air Dispersion Systems Design Guide, with a second from John Constantine. **Vote: 9-0-0 CNV. Motion passes.**
 - ii) **Action Item:** Kevin Gebke will write the PTAR for the guide.

13) Adjournment

Upcoming Meetings:

2020 ASHRAE Winter Conference --- Orlando, FL --- February 1-5, 2020

2020 ASHRAE Annual Conference --- Austin, TX --- June 27-July 1, 2020

2021 ASHRAE Winter Conference --- Chicago, IL --- February 23-27, 2021

2021 ASHRAE Annual Conference --- Phoenix, AZ --- June 27-July 1, 2021

2022 ASHRAE Winter Conference --- Las Vegas, NV --- January 29-February 2, 2022

ATTACHMENT A

Sub-committee meeting notes

Monday – June 24, 2019: 8:00 – 10:00 AM

Location: Kansas City Convention Center (KCCC)

Room: 2215C

1. **TC Consolidation:** Moving ahead slowly. We are waiting for updates from TAC
2. **Programs:**
 - a. Orlando Winter Conference, Track 7, Larry Smith: We need to submit items ASAP to get the programs ready
 - b. Steve Idem: We are getting speakers ready for the track.
3. **DDG,** Pat Brooks: Had subcommittee meeting yesterday. Discussed Ch. 10, Acoustics. Draft was presented and updated. Updated document is on Basecamp. ASHRAE Publishing Staff came to the meeting and talked about method of how to publish. Staff is directed to TC 5.2 Basecamp to get chapters. Kevin Gebke will consolidate chapters to create a workbook. DDG needs to be voted on Tuesday. Turnaround time by ASHRAE is 2-3 months.
4. **DFDB,** Pat Brooks: Continuing to be developed. Steve Idem is overseeing development of loss coefficients and other design factors. The subcommittee would like to change contractors to Tennessee Tech. Mark Owen, ASHRAE Staff, agrees with approach. Steve Idem will provide a proposal for the contractor change.
5. **Duct Construction Handbook Chapter,** Bob Reid: All changes made will be uploaded to Basecamp for review.
 - a. **Action Item:** Bob will provide John Constantinide with the revised Handbook Chapter by noon today for him to disseminate to Voting Members.
 - b. **Handbook Chapter revisions will be brought to full committee for a vote.**
6. **Duct Sealant,** Larry Smith: Teleconference held, with concerns addressed by Larry Smith. Based on concerns addressed, content should not lead to a guideline but to include that content in the Handbook chapter for Duct Construction. Additional content can be added to the chapter after publication submission via Handbook Online. White paper is a possibility, which can be done by the TC.
7. **Research:** RP 1180 DDG is ongoing. RP 1764 was voted on and approved. Document was sent to ASHRAE on 18 January. Kevin is writing an RTAR on textile duct fittings.
8. **ADI Research Project at FSEC:** 2 lab houses have completed testing. Old flex duct system was replaced with new flex duct system. However, installation was not done as intended, so adjustments to the intended system were made. Changes made on one house were duplicated in the other house. 3D modeling points were plotted, with the hope of creating a predictive model for performance.
 - a. **Action Item:** Pending ADI's approval, Chris Van Rite will plan a trip for TC 5.2 to FSEC in Cocoa, FL to the 2 lab houses on Friday before the AHR Expo.
9. **TC 5.10 Commercial Kitchens/Exhaust:** Looking into forming a program session in Orlando for Track 7 for ductwork testing for commercial kitchens, including kitchen exhaust. Issues with condensation, air leakage into the space, and ventilation should be addressed. A co-sponsorship of a program session and partnership on pursuing speakers would be appreciated. So far, two speakers are identified who can present.
 - a. **Action Item:** Randy Young will find a speaker who can provide a contractor's perspective on prefab vs constructed on-site supply duct for this session.
 - b. **Program session co-sponsorship request will be brought to full committee to vote.**

10. **Basecamp Introduction**, John

11. **Adjournment**

ATTACHMENT B

Viewing Submission

Title:

Designing Energy Efficient Duct Systems

Track:

HVAC&R Fundamentals and Applications

Session Abstract:

The equal friction and static regain duct design methods employ an initial velocity selected to meet acoustical requirements. The equal friction method calculates the duct size based on the initial friction loss rate. For the static regain design approach, main ducts and branches are then sized to achieve a balanced pressure loss from section to section. Both duct design approaches use the ASHRAE Duct Fitting Database (DFDB) to calculate fitting loss coefficients. A numerical model to predict the pressure and flow distribution in a multi-branch duct system comprised of wire-wound flexible duct and rigid sheet metal duct is described.

Learning Objectives:

1. Become familiar with fundamental duct design methods.
2. Understand the advantages and limitations of each design approach.
3. Realize the benefits of design a duct system that is well balanced.
4. Recognize that flexible duct systems must be designed and installed properly.

Technical Committee:

5.2 Duct Design

Expected Attendance:

50

Submitted to Last Meeting:

No

Program Level:

Intermediate

Program Type:

Seminar

Length:

90

Methods of Assessment:

1. Equal friction, static regain, and constant velocity are the three most common duct design methods.
 - **True**
 - False
2. Using the ASHRAE Fitting Database facilitates the design of energy efficient duct systems.
 - **True**
 - False
3. The equal friction method calculates each duct diameter based on a chosen friction loss rate.
 - False
 - **True**
4. Rectangular or flat oval duct systems can't be designed using these methods.
 - True
 - **False**
5. The static regain method sizes ducts so that the static pressure throughout the system is approximately equal.
 - **True**
 - False

6. Two advantages of the equal friction method are that it is easy to use and is good for designing small supply/return systems.
 - **True**
 - False
7. Large duct systems designed by the static regain method use less material than an equal friction design at the same operating pressure, but sizing ducts may require the use of a computer program.
 - **True**
 - False
8. Flexible duct systems can be designed to exhibit equivalent performance to rigid duct systems, provided they are sized appropriately.
 - **True**
 - False
9. In a multi-branch duct system it is possible for the static pressure to increase in the overall flow direction.
 - **True**
 - False
10. The air flow in each branch be predicted using an iterative numerical modeling technique.
 - **True**
 - False

Chair

Stephen Idem, Ph.D.

Tennessee Tech University

Cookeville, TN

Alternate Phone: 9317875537

Email: sidem@tntech.edu -- Will not be published

Member Grade(s):Member

Presentations

Contact Presenter	Presentation	Speakers	Presentation Review Status
pbrooks@smacna.org	26387 - Comparing the Equal Friction and Static Regain Duct Design Methods	Pat Brooks, P.E., Member, SMACNA, Chantilly, VA	
jvrpelle@msn.com	26388 - Computer Modeling Required for Accurate Duct Sizing Using TP=VP+SP	John Reints, P.E., Member, www.staticregain.net, DeKalb, IL	
sidem@tntech.edu	26389 - Analysis of Pressure Loss and Flow Distribution in Multi-Branch Duct Systems	Stephen Idem, Ph.D., Member, Tennessee Tech University, Cookeville, TN	

Conclude Seminar Submission

Please **PROOF** what you have entered.

If all of the information looks OK, then click 'Conclude Submission'. What you see is what we have in our database for this session.

To change anything, click on a link in the Session control panel.

Click to print this page now.

Title:

Duct System Materials and Construction

Track:

Ventilation, IAQ and Air Distribution Systems

Session Abstract:

There are many choices of materials that can be used to meet the owner's project requirements. A duct system has a primary function (aesthetic and architectural) of conveying air and a broad range of secondary functions and conditions. The secondary functions usually dictate the specifics of materials and method of fabrication. A variety of topics will be covered that will provide a good understanding of what is required for the design and specifying a variety of duct systems.

Learning Objectives:

1. Explain the various engineering design requirements for the proper design of ductwork systems.
2. Distinguish what is required in the engineers specifications and what is covered by a delegated design.
3. Distinguish the variety of materials (metallic and non-metallic) that are available for the proper design of ductwork systems and the required reference standards.
4. Explain the scope and limitations of the reference standards for delegated design and functional requirements.

Technical Committee:

5.2 Duct Design

Expected Attendance:

50

Submitted to Last Meeting:

No

Program Level:

Intermediate

Program Type:

Seminar

Length:

60

Methods of Assessment:

1. Is paintgrip required to successfully field paint metal ductwork?
 - True
 - **False**
2. Does flexible ductwork exhibit the same pressure loss as a comparable diameter metal duct?
 - True
 - **False**
3. Does a 90 degree elbow using flexible duct have the same pressure drop as a metal elbow?
 - True
 - **False**
4. You can use gypsum board to fabricate an air duct system?
 - True
 - **False**
5. Do Air Duct and Air Duct Connectors have to meet the same 16 separate UL Standard 181 tests?
 - True
 - **False**
6. Can you successfully design duct systems to 1,000 degf?
 - **True**
 - False
7. Are non-rigid ducts sound attenuating?
 - True
 - **False**
8. Does ANSI/ASHRAE 62.1 Ventilation for Acceptable Indoor Air Quality require surfaces to be resistant to mold growth with a standardized test method?
 - **True**
 - False
9. Do antimicrobial agents used in air duct systems have to be EPA registered for specific use in HVAC systems?
 - **True**
 - False
10. Delegated designs can cause conflicts with the specifications and drawing notes and/or details. It is very important to specify which portion of a reference standard applies to the project as the references usually covers a broad range of applications.
 - **True**
 - False

Chair

Steve Idem, Ph.D.

Tennessee Tech University

Cookeville, TN

Alternate Phone: 9313723607

Email: SIdem@tntech.edu -- Will not be published

Member Grade(s):Member

Presentations

Contact Presenter	Presentation	Speakers	Presentation Review Status
larrys@li-hvac.com	26386 - Duct System Materials and Construction	Larry Smith, P.E. , Linx Industries, Portsmouth, VA	

Conclude Submission

Acoustics Effects, Air Leakage, and Flow Measurements in Duct Systems

Proposed ASHRAE Seminar

Sponsored by TC 5.2

Orlando Winter Conference, 2020

ABSTRACT: (Will be published in the final program)

This seminar...

SPEAKERS:

Presentation #1: “Acoustics Considerations in Duct Design”, Jeff Boldt.

- Acoustics considerations in duct design

Provide a further brief description here.

Presentation #2: “A Novel Duct Leakage Measurement Technique Based on Relative Humidity Measurement”, Mark Modera.

ASHRAE Standard 215 was recently published as a new method of test for duct leakage in commercial buildings. Although this standard improves upon standard fan pressurization testing by providing leakage flows under operating conditions, the time, labor, and disruption of the method limits its applicability. This presentation describes an alternative method for duct leakage testing that is less invasive, and is based upon MEMS sensor technologies. The methodology uses water mass balances, and sometimes pressure measurements, to estimate duct leakage under normal operating conditions. By measuring temperature and relative humidity to determine absolute humidity (relative humidities in this application are close to 50%, thereby avoiding sensor issues at high and low relative humidities), water mass balances are used to determine flow ratios in mixed-air streams. One application is leakage from supply ductwork into a ceiling plenum return, where any dry air leaking from supply ductwork into the plenum is mixed with the air entering the plenum from the room, resulting in a lower absolute humidity in the air exiting the ceiling plenum into the return shaft. The theory behind the methodology, as well as field testing results, and comparisons with fan-pressurization results, will be presented.

Presentation #3: “Accuracy of Residential Capture Hoods”, Steve Rogers,

Research was conducted using a laboratory duct system comprised of a supply fan, a main plenum and four branches to supply registers, similar to a residential home. Data is presented for measurements with 5 different capture hoods and multiple styles of residential supply registers. Flow accuracy and insertion loss is discussed along with how they each affect air flow measurements at supply registers.

Presentation #4: “Capture Hood Errors Associated with Commercial Diffuser Types” Robert Moss

This presentation reviews test data revealing significant errors associated with many commercial diffuser types on capture hoods as measured using a precision calibration station. Information on the effect of entrance size and elbow direction is presented on several specific diffuser types. Computational Fluid Dynamic models are presented for some of the diffuser types to help in understanding the origin of these errors. This study also includes a composite graph that depicts errors, in percent, by diffuser type, over the normal velocity range. This information can be used to correct capture hood readings on the job site.

CONTACT INFORMATION:

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Bob Moss
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Dwyer, Michigan City, IN, USA
Email: rmoss@dwyermail.com

LEARNING OBJECTIVES: (Need four learning objectives)

METHOD OF ASSESSMENT: (Need 10 assessment questions; short answer, true/false, etc.)

ATTACHMENT C

Code Interaction Sub-Committee Update (6-24-19)

ICC 2021 IMC, IRC, IECC Code Revision Cycle - Group B

- TC met April 28 to May 8, 2019 to consider proposals
- ROP published May 22, 2019
- Comment period ends July 24th, 2019

IAPMO 2021 UMC Code Revision Cycle

- IAPMO publish the Report on Comments on March 22, 2019
- UMC TC met on May 1st & 2nd, 2019 to consider the public comments
- TC final vote date was June 7th.
 - Notable - metallic straps required for non-metallic flex duct.
- Assembly Hearings to be held in September.

NFPA 90A & 90B Standards 2021 Revision Cycle

- First Draft Report was posted on February 27, 2019
- 90A & 90B TC will meet on August 13th, 2019 to review comments and develop Second Draft Report