

**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 September 2, 2013

TC/TG/TRG TITLE Duct Design

DATE OF MEETING January 29, 2013 LOCATION Dallas, TX

MEMBERS PRESENT	TERM TO	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Mark Terzigni	6/30/13			Herman Behls (CM)
Larry Smith	6/30/15			Tim Eorgan (CM)
Bob Reid	6/30/14			Kevin Gebke (CM)
Johnny Andersson	6/30/13			John Gierzak (CM}
Mark Smith	6/30/16			Vikram Murthy (CM)
Pat Brooks	6/30/13			Mike Resetar (CM)
John Hamilton	6/30/13			Bill Stout (CM)
Chris Van Rite	6/30/13			Craig Wray (CM)
Wes Davis	6/30/16			Bruce Meyer (CM)
Ralph Koerber	6/30/16			Mark Modera (CM)
Steve Idem	6/30/16			Alex Kouvolo
Gary Miller	6/30/16			Dennis Flores (Guest, McGill Airflow)
				Scott Hobbs (Guest, McGill Airflow)
				Rob Walton (Guest, McGill Airflow)
				Robert Hassler (CM)
				Ken Chappell (Guest, ARCOM)
				Tom Axley (Guest)
				Eileen Jensen (Guest, BPA)
				Laura Petrillo-Groh (Guest, AHRI)
				Deanna Gierzak (Guest)
				Ed Koop (Guest, Ruskin)

				Cindy Bittel (Guest, RCXBD)
				Steve Ford (Guest, Univ. of IL)
				Luis Escobar (Guest, ACCA)
				Bill Smith (Guest, Elite Software)
				Joshua Kading (Guest, TAMU REEL)
				Matthew Daugherty (Guest, TAMU REEL)
				Martha Hewett (Guest, MNCEE)
				Dave Diaz (Guest, SMW 104)

DISTRIBUTION

<i>All Members of TC plus the following:</i>	
TAC Section Head	Giustino Mastro
TAC Chair	William McQuade
2013 Handbook Liaison (Fundamentals)	James Aswegan
2016 Handbook Liaison (Systems)	Annette Dwyer
RAC Liaison	Piotr Domanski
Standards Liaison	Rick Larson
Special Pubs	Francis Mills
ALI/PDC	Donald Brandt
Chapter Tech Transfer	Robert Laneve
Manager of Research & Technical Services	Mike Vaughn

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ASHRAE Annual Meeting, Dallas, TX
TC 5.2 Duct Design

Tuesday, January 29, 2013

Location: Lone Star Ballroom A1 (CC2) -- Dallas Sheraton

Time: 3:30 – 6:00 pm

2011/2012 Roster:

Voting Members (12): Mark Terzigni (Chair), Larry Smith (Vice Chair), Bob Reid (Secretary), Johnny Andersson (non-quorum), Pat Brooks, John Hamilton, Chris VanRite, Mark Smith, Wes Davis, Ralph Koerber, Steve Idem, Gary Miller

Corresponding Members (CM): Kevin Gebke, Bass Abushakra, Herman Behls, Tom Ponder, Marcus Bianchi, Charlie Culp, Tim Eorgan, John Gierzak, Mark Hooks, Eli Howard, Norm Grusnick, Bruce Meyer, Mark Modera, Vikram Murthy, Mike Resetar, Donald Seibert, Bill Stout, Craig Wray, Robert Hassler

Provisional Corresponding Members: Jeff Boldt, Erik Emblem, Vishal Jadawala, Alex Kouvolov, Ahmed Sleiti

1. **Call to order:** Chairman Mark Terzigni called the meeting to order at 3:30 PM

2. **Introduction/Attendance**
 - a. Voting Members Present: Mark Terzigni, Bob Reid, Larry Smith, Chris Van Rite, Johnny Andersson, John Hamilton, Pat Brooks, Mark Smith, Wes Davis, Ralph Koerber, Steve Idem, Gary Miller -- all 12 voting members in attendance
 - b. Voting Members Not Present: none
 - c. Corresponding members: see cover sheet of attendees.
 - d. Provisional Members: see cover sheet of attendees.
 - e. Guests: see cover sheet of attendees.
 - f. There is a quorum for the meeting (12 of 12 voting members present).

3. **San Antonio (June 2012) Meeting Minutes**
 - Minutes are posted on the T.C. 5.2 Web site. Minutes approved by email vote ending 11/9/12. Approved 7-0-5 (12)

4. **Section Head Report (Gus Mastro- Section Head, Mark Terzigni TC 5.2 Chair)**
 - a. Some changes have been made to the TC MOP. Available for review online.
 - b. Please have members update their ASHRAE biographies
 - c. Next meetings are June 22-26 in Denver, CO
 - d. Deadlines for Denver seminar and form papers is February 11, 2013

- e. Deadline for Denver technical papers is April 19, 2013

5. Subcommittee Reports

a. Handbook (Kevin Gebke, Chair)

- Duct Design (Chapter 21) of the 2013 Fundamentals Handbook is at the editor. The next step is to review the galleys. There were 11 substantive comments, all approved. There were two negative comments. One was resolved. The other, by Ralph Koerber, was rejected (disputed recommended flexible duct length -- discussed later in the meeting and will be resolved editorially).
- There are three new sections -- The first covers location of mechanical rooms and the routing of ducts. The second covers HVAC system air leakage. The third addresses duct shape selection (round, rectangular, flat oval)
- All loss coefficient tables at the end of the chapter have been removed, along with the example problems.
- T-Method was removed entirely.

b. Membership (Mark Terzigni TC 5.2 Chair)

- See the TC 5.2 website (<http://tc5.2.ashraetcs.org>) for the official 2012-2013 roster.
- Chris Van Rite, Mark Terzigni, Pat Brooks and John Hamilton will roll off
- Larry Smith will become TC5.2 Chair in July 2013 and Bob Reid will become Vice Chair

c. Programs (Steve Idem, Chair)

- We intend to organize some form of program around the CFD Shootout

d. Special Publications

- ASHRAE Duct Fitting Database (Herman Behls, Administrator)
 1. Discussed adding a new position for the TC, something akin to Duct Fitting Database Manager
 2. Mark Terzigni appointed Herman Behls to the position
- ASHRAE Duct Design Guide: (Pat Brooks, Chair)
 1. We are a little behind schedule but hope to have it mostly done for review by the end of April and maybe a draft available for public review by Denver.
 2. We are adding a section on specifications (prepared by ARCOM/Masterspec)
 3. We are adding a section on computer duct design programs (with input provided by Elite Software and Trane)

e. Research (Herman Behls, Chair)

- RP 1493 "CFD Shootout Contest-Prediction of Duct Fitting losses" -- the project has been completed and the awards paid. Two papers will be ready for the Denver meetings and the other two will be worked on further

- RP 1606: Laboratory Testing of Flat Oval Transitions to Determine Loss Coefficients -- Herman introduced the lead researcher, Steve Ford. They are at the end of the contract and have asked for a 90-day extension. They will be correlating the data to a formula rather than a table.
- WS-1682: This was originally an unsolicited work statement, rejected by RAC, for “CFD and Experimental Study to Determine Loss Coefficients of Individual and Close Coupled Round Elbows”. RAC suggested the TC convert it to a work statement.

Work statement was prepared and approved 12-0-0 (12) August 4, 2013 by email ballot. The goal of this project would be to capitalize on the partial success of the CFD shootout contest by developing systematic CFD methods that can be used to generate loss coefficients for individual duct fittings, verify existing data, and analyze close-coupled fittings in duct systems. An important aspect of this project is that detailed pressure loss measurements will be performed in the laboratory on individual elbows and close coupled elbows in order to assist with the development of the CFD models, and to corroborate the numerical predictions. PMS (project monitoring subcommittee): Dr. Bass Abushakra, Dr. Yan Chen (Purdue Univ.), Larry Smith, Herman Behls.

- Possible Future Research
 - a. Herman introduced Bill Smith of Elite Software. There is a proposed work statement for a comparison of duct calculation programs
 - b. Discussed using CFD for developing prediction of the effect of close coupled fittings on duct system performance (please distribute copies of 2—3 Tennessee Tech University project on close coupled elbows)
 - c. Discussed interest in preparing an RTAR on adding residential fittings to the Duct Fitting Database
 - d. Discussed developing a work statement for duct component leakage. Bob Reid and Craig Wray will try to write before Denver

f. Standards (Tom Ponders, Chair)

- SPC 120 and SPC 126 -- Kevin Gebke reports there are no problems and the updates are proceeding after some good meetings.
- Standard 90.1 -- the system leakage test proposal is on hold pending development of the SMACNA Total System Air Leakage Standard.

g. Website (Mark Smith, Webmaster)

- Nothing to report

h. Awards (Dr. Steve Idem)

- Herman Behls received the “Certificate of Achievement” award in recognition for dedication to ASHRAE Research.

i. MTG.EAS (Multi-Disciplinary Task Group -- Energy Efficient Air-Handling Systems for Non-Residential Buildings) -- Herman Behls

- The MTG is a strategic collaborative body whose mission is to coordinate research, handbook, program and standards activities of various technical groups and organizations to facilitate the development of packages of tools, technology and guidelines related to the design, operation and retrofit of energy-efficient air-handling systems in new and existing non-residential buildings.
- 2 conference call meetings have been held. 19 people have returned ideas for consideration. The next conference call is planned for February 2013.
- Mark Terzigni represents TC5.2 with Larry Smith as alternate. We need ideas from TC5.2 and all committee participants are encouraged to give ideas to Mark or Larry.

6. New Business

- a. ADI Duct Calculator -- Chris Van Rite reports there will be a final product to vote on in a few weeks.

7. Adjournment

- Wes Davis moved to adjourn the meeting. Chris Van Rite seconded. Passed unanimously.

Next Meeting -- 2013 ASHRAE Annual Conference -- June 22-26 in Denver, CO