

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND
AIR-CONDITIONING ENGINEERS, INC.
1791 Tullie Circle, NE, Atlanta, GA
404-636-8400**

**Technical Committee 4.4
Building Materials and Building Envelope Performance**

Minutes

Monday, June 25, 2012

These draft minutes were approved by this Committee in Dallas on January 28, 2013

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

1791 Tullie Circle, NE, Atlanta, GA

404-636-8400

TC/TG/TRG MINUTES COVER SHEET

(Minutes of all TC/TG/TRG Meetings are to be distributed to the individuals listed below within 60 days following the meeting.)

TC/TG/SSPC: TC 4.4
TC Title: Building Materials and Building Envelope Performance
Date of Meeting: Monday, June 25, 2012. Meeting convened at 2:15 pm.
Location: Room (CC) 008B (R), San Antonio, Texas

DISTRIBUTION

All members of TC 4.4 plus the following:

TAC Chair

Committee Liaisons

ADDITIONAL DISTRIBUTION

Manager of Standards

Manager of Technical Services and Research

ASHRAE TC 4.4 MINUTES

San Antonio, TX, USA

June 25, 2012

Technical Committee 4.4

Building Materials and Building Envelope Performance

1. Introduction and Attendance

The Chair, Garth Hall, called the meeting to order at 2:19 pm with 37 members and guests present. A quorum was present.

Voting Members and Officers Present:

<u>Name</u>	<u>Affiliation</u>	<u>Role</u>	<u>Notes</u>
Garth Hall	Raths, Raths & Johnson, Inc.	Chair	
Marcus Bianchi	NREL	Vice-Chair	Non-voting
Peter Adams	Morrison Hershfield Ltd.	Secretary	
Therese Stovall	ORNL	Handbook	
Sam Glass	USDA Forest Products Lab	Research	
Steve Cornick	NRC/IRC	Website	
Stan Gatland	CertainTeed Corporation		
Hugo Hens	K.U. Leuven		Non-quorum
Hartwig Kunzel	Fraunhofer Institut Bauphysik		Non-quorum
Anton TenWolde			
Achilles Karagiozis	Owens-Corning		

Number of voting members present: 9 (2 non-quorum)

Voting Members and Officers Absent

<u>Name</u>	<u>Affiliation</u>	<u>Role</u>	<u>Notes</u>
Theresa Weston	DuPont	Standards	
Larry Elkin	Applied Building Sciences	ALI/Honors & Awards	
Sean O'Brien	Simpson Gumpertz & Heger, Inc.	Program	
Mikael Salonvaara	Huber Engineered Woods LLC		
Holly Bailey	Bailey Engineering Corporation		

Corresponding Members Present

<u>Name</u>	<u>Affiliation</u>
Charles Cottrell	NAIMA
Paul Berry	DOW
William Rose	Univ of Illinois at Urbana-Champaign
Raoul A Webb	ENVIRON International Corporation
Andre Desjarlais	ORNL
Fiona Aldous	WJE
Lixing Gu	Florida Solar Energy Center
David Roodvoets	DLR Consultants
Elena Enache-Pommer	DOW
Pat Noonan	Knauf Insulation

Visitors Present

<u>Name</u>	<u>Affiliation</u>
Kurt Roth	Fraunhofer CSE
Ricardo Gamboa	IIG
Jeff Smith	Georgian Power Corp.
Bert Phillips	
Mike Bilderbeck	TAC SH
Rockford Boyer	ROXUL Inc.
Mike Moore	Newport Ventures Inc.
Zach Merrin	Univ. of Illinois
Manfred Kehrler	ORNL
Ali Fallahi	Fraunhofer CSE
Paulo Tabares	NREL

2. Approval of Previous Minutes

The minutes from the June 27, 2011 meeting in Chicago had been posted on the Google site and ASHRAE site for review.

Motion 1

Steve Cornick moved to accept minutes as posted on Google Site			SECOND: Sam Glass
FOR: 9	AGAINST: 0	ABSTAIN: 0	Notes: Chair not voting

DISCUSSION: None

MOTION CARRIES

3. Report From the Chair

Chair, Garth Hall, made general announcements:

- New 2012-2013 rosters
 - Check to make sure your personal information is correct
 - www.ashrae.org go to <Update your bio>
 - Current officers for 2012 – 2013:
 - Garth Hall, Chair
 - Marcus Bianchi, Vice Chair
 - Peter Adams, Secretary
 - Theresa Stovall, Handbook Subcommittee Chair
 - Sam Glass, Research Subcommittee Chair
 - Sean O’Brien, Program Subcommittee Chair
 - Theresa Weston, Standards Subcommittee Chair
 - Steve Cornick, Webmaster
 - Four new voting members starting at the conclusion of this meeting
 - Fiona Aldous
 - Diana Fisler
 - Alex McGowan
 - Sam Glass

- TC Chair Breakfast Summary
 - ASHRAE acknowledges there is a disconnect between Programs and TC’s.
 - Individual TC’s have been expressed frustration in not being involved in programs that appear to fall directly into their area of expertise and not getting programs with similar topics and outside individuals.
 - CEC recommends reaching out directly to the Track Chairs to coordinate topics, abstracts, etc. Additionally, reach out to CEC directly
 - CEC is now taking recommendations for tracks and programs.
 - Hugo Hens recommended an “Envelope” track.
 - If other people have ideas, we can summarize and submit on behalf of TC 4.4
 - Starting in Denver there will be a Research track. ASHRAE and non-ASHRAE research
 - ASHRAE BRANDING – ASHRAE no longer only an acronym. New logos, etc. Still can use the long form to describe the association.
 - ASHRAE is working to accommodate web-based attendance at TC level. Details to come, but there is a possibility that video or conference calls will be possible.

4. Research Subcommittee

Research Subcommittee chair: Sam Glass.

General

Attended the research subcommittee chairs’ breakfast 2012-6-25. Notes:

- Research Liaison for Section 4 is Srinivas Garimella (RL4@ashrae.net)
- 19 new projects have been awarded
- 28 projects have been completed

- Currently 62 active projects of which 11 are in a closing phase
- Six conditionally-approved Tentative Research Proposals possibly ready for bid fall 2012
- TCs are encouraged to produce more projects; current number of RTARs (5) and WSs (4) for RAC to evaluate is quite low
- New Research Manual and RTAR cover sheet on ASHRAE website, <http://ashrae.org/standards-research--technology/research>
- 5 proposals for Innovative Research Grants (IRGs) were reviewed this spring; all were declined (not considered innovative, too product development oriented, limited value for ASHRAE community); new call for proposals and guidance expected by Nov 2012
- Denver program: contributions on research will be given special attention; special new track dedicated to research

Future Research

Work Statement 1561-WS, "Procedures to Adjust Observed Climatic Data for Regional or Mesoscale Climatic Variations"

- Original RTAR title/author: Characterization of Climate Conditions in Near Ocean Environments/Larry Elkin
- Committee decided that TC 4.2 should take the lead
- WS written by Steve Cornick, TC 4.4's liaison with 4.2
- TC 4.4 voted to cosponsor WS at 2011 annual conference
- During their fall 2011 meeting, RAC voted to accept this WS for bid
- Went out for bid Spring 2012; Proposal Evaluation Subcommittee is going to make a recommendation to TC 4.2 to accept the bidder and send it up to ASHRAE here in San Antonio
- Hartwig Künzel volunteered to represent TC 4.4 on the Project Monitoring Subcommittee

RTAR (TC 4.2): Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings: 1325-RP Update

- Author: Steve Cornick; TC 4.2 taking the lead, looking for TC 4.4 to co-sponsor
- Posted on Google site; updated 2011-12-9
- Revised version (v3) posted on TC google site (2012-5-1)
- Discussed at subcommittee meeting; SC recommends that TC 4.4 vote to co-sponsor

Motion 2

Sam Glass moved that TC 4.4 co-sponsor 1325 RP Update			SECOND: Hugo Hens
FOR: 9	AGAINST: 0	ABSTAIN: 0	Notes: Chair not voting

DISCUSSION: None

MOTION CARRIES

- Andre Desjarlais volunteered to represent TC 4.4 when it comes time for PES/PMS

RTAR 1670: Research to Determine Energy and Moisture Impacts of Attic Ventilation

- Author: Dave Roodvoets
- Posted on Google site 2012-1-20
- Committee voted in Chicago to submit RTAR to RAC pending comments from research liaison; submitted to MORTS 2012-02-15; assigned number 1670
- Returned by RAC with comments
- Task group was to develop work statement in the meantime; group includes David Roodvoets, Andre Desjarlais, Holly Bailey, Bill Rose, Anton TenWolde, Achilles Karagiozis, Sam Glass. Dave looking for input to move forward.
- Task group changed direction of the RTAR to parametric modeling study
- TC 1.12 asked to co-sponsor; did not vote but general sense was not to support it in its current form
- Long discussion in subcommittee; no decision on which direction to go
- Task group will continue developing the RTAR
- Additional volunteers for task group: Stan Gatland and Wahid Maref (by email to Dave Roodvoets)

New RTAR: Updating the Thermal and Moisture Transport Property Values for Common Building and Insulating Materials

- Authors: Steve Cornick and Alex McGowan
- Posted on Google site; updated 2012-1-9
- TC recommended previously to combine two previous RTARs: "Updating Thermal Property Values in the Handbook of Fundamentals" (McGowan) and "A Thermal and

Moisture Transport Property Database for Common Building and Insulating Materials:
Update of RP 1018” (Cornick)

- Discussed at research subcommittee meeting in Chicago
- Revised version sent out by email and posted on TC Google site 6/24/12
- Comments: test new materials not repeats; use correct ASTM material air permeance test
- Comments are to be sent to Steve by July 15, 2012
- Steve will revise RTAR so that TC can vote by letter ballot prior to the Aug 15 submission deadline

RTAR: Hygrothermal Properties of Aged (in situ) Construction Materials

- Author: Steve Cornick
- Posted on Google site; updated 2012-1-9
- Discussed at research subcommittee meetings in Chicago and San Antonio
- Recommended that it address thermal properties only, not hygrothermal.
- Bill Rose stated that we update to improve values in tables. Steve Cornick suggested we have a committee to determine which values need the most attention, and to look at existing data and keep track of incoming new data. There was discussion that Alex McGowan would be well suited for this. Achilles stated that we need to be very specific about the materials, and that it is difficult to differentiate between new and aged values.
- Comments to be sent to Steve Cornick by August 1, 2012

RTAR (TC 1.8): Testing the Water Vapor Transfer of Materials and Systems Used in Chilled Water Mechanical Insulation Systems

- Author: Gordon Hart; TC 1.8 taking the lead, looking for TC 4.4 to co-sponsor
- Posted on Google site 2011-6-13
- Being rewritten by TC 1.8; stay tuned

RTAR: Evaluating the Accuracy of Whole Building Energy Simulations by Comparison with Field Measurement Data

- Author: Sean O’Brien

- Working with TC 4.7 and others to further define the scope of this project

RTAR: Investigation of the Long-Term Performance of Sheathing Membranes due to the Effects of Surfactants, Chemicals, and Aging

- Author: Garth Hall
- Draft has been circulated; received comments from liaison
- Co-sponsored by TC 1.12
- RTAR needs to be revised to include more information on existing methodologies and other references
- Will be revised by Garth Hall and Theresa Stovall

5. Handbook Subcommittee

Handbook Subcommittee Chair: Therese Stovall

Chapters Currently Under Revision

Chapters 26, 27, and 28 were submitted on time, but there was an omission.

- Manufacture wanted to add to table, info was submitted some time ago. Proposing a new footnote “XXXXXX” and expand table in future.
- A motion was discussed that the TC support the proposed changes to Chapter 26 into the most recent version of the Chapter possible. This motion was amended by Bill Rose

- **Motion 3**

Bill Rose moved that the TC approve the inclusion of 5.5” numbers in Table 3 of 2013 print version if possible, otherwise include footnote that referees earliest possible electronic version, and approve to include in 2013 version			SECOND: Anton TenWolde
FOR: 9	AGAINST: 0	ABSTAIN: 0	Notes: Chair not voting

DISCUSSION: Bill Rose was concerned that 3.5 inch air space under highest R-value 12.98, likely wrong but may want to run with higher value, might add 17% to that 12.98. Therese Stovall commented that greater % went on the greater values and 5% less applied to smallest table values. Bert Phillips commented that including r-values was confusing. Marcus commented

can just say similar values to 3.5, unless we include the table now. Bill Rose stated we put in 5.5" numbers if we can, add 2nd footnote that refers to electronic version.

MOTION CARRIES

Possible Addition to Chapter 26

- Mike Moore (representing insulated vinyl siding institute) reported that *ASTM D7793 – Standard Specification for Insulated Vinyl Siding* was complete and would be published soon.
- There was discussion regarding ensure getting correct r-value. Want to see reference in HOF. Possibly add to Table 4 in Chapter 26. Asking to add 4th line, insulated backed vinyl siding.
- Straw vote was held on adding information now. None in favour for adding now for 2013 version of HOF. Data not submitted to entire committee and would need a chance to review and discuss.
- Can get in for 2014 electronic version. Mike reported they have updated data and additional info could be provided to the TC upon request. Committee agreed to review in coming months. Mike agreed to provide pre-print ASTM standard for TC review ASAP.

Late Change to Chapter 26

- Sam Glass reported that there was an error in Table 4 and 6 of Chapter 26. Values in tables are in permeability, although cited sources provided values in permeance for some materials. Was discussed that it would be preferable to report all values as permeance with thickness.
- This change was considered to be a correction of an error and should be priority.
- Stan Gatland to give Therese Stovall text regarding working changes. Sam to provide text.

Post Meeting Note:

- A letter ballot was held in August to vote on adding and modifying new content to Chapter 26.
- Content was included in a document emailed by Garth Hall to voting members on August 10, 2012
- 8 members responded prior to the deadline
- Voting Results: 8 in favour, 0 against
 - **The Chapter Changes were accepted.**

Applications Chapter 44

- Peter Adams is Principal Reviser and has started the review process. A copy of the current chapter was posted for review with comments requested before end of August, 2012.

Other Items

- The need for a more formal tracking system to manage incoming data was discussed.
- Thanks to Bill, Hartwig and Alex for their continued support on Handbook maintenance.

6. Program Subcommittee

Program Subcommittee Chair: Sean O'Brien (provided by Garth).

- Next conference is Dallas TX, Jan 26-30, 2013. Seminar and forum proposals are due August 13, online at: <http://ashraem.confex.com/ashraem/w13/cfp.cgi>
- If you submitted a conference paper, notifications for acceptance/rejection happens by Sept 14 Conference tracks are (program themes have been discontinued as of this conference):

Track 1: HVAC&R Systems & Equipment

Track 2: HVAC Fundamentals and Applications

Track 3: Standards, Guidelines and Codes

Track 4: Energy Conservation

Track 5: Refrigeration

Track 6: Large Building Design

Track 7: Facility Management; Operations, Technology and Energy Improvements

Track 8: Industrial & Transportation Ventilation

- Starting in Dallas, speakers will have to pay their way to the conference, whereas previously speakers got in for free. The cost is \$95.
- The following conference will be Denver, June 22-26, 2013. Conference Paper Abstracts due September 24, 2012. Upon acceptance, papers will be due January 14, 2013. Full Technical Papers due September 24, 2012. Seminar and forum abstracts are due between Jan 7 and Feb 11. Tracks are:

Track 1: Research- "Above & Beyond"

Track 2: Integrated Project Delivery

Track 3: Building Energy Modeling vs. Measurement & Verification- Closing the Gap

Track 4: Mile-High Efficiency & Equipment

Track 5: Renewable & Alternative Energy Sources

Track 6: HVAC&R Systems & Equipment

Track 7: HVAC&R Fundamentals & Applications

- The program on RP1365/thermal bridging/etc, which was rejected for Chicago, was also rejected for San Antonio despite having the 90.1 committee on board as a co-sponsor (this makes 2 conferences in a row without program items). Currently have no explanation for why ASHRAE would twice reject a seminar based on research they funded, especially with 90.1 is cosponsoring.
- Looking at program tracks for Dallas, energy conservation should be a focus, maybe also large building design. The impacts of envelope performance on whole building energy performance seems to be a hot topic, as well as anything related to validation of energy models (although 4.7-energy calcs should be involved for those issues).
- Organizing a full day building envelope seminar, at this point Denver is most likely/closest option. Hugo suggested a seminar to motivate people, followed by one day course. Look into coordinating a "Teaser" seminar, maybe with TC 1.12, for Dallas to gauge interest. I will check back with the original list of interested people to get something submitted. Fiona did .5 day sold out 140 attendees for envelope.
- New program ideas – get rolling for Denver if fresh idea? Brain storming session maybe for Dallas.

7. Standards Subcommittee

Standards Subcommittee Chair: Theresa Weston (presented by Garth Hall)

Proposed Retrofit of Existing Buildings Retrofit Guide:

Motion 4

Garth Hall moved that TC 4.4 pursues the development of a new Guideline on Retrofitting Building Envelopes with historical buildings included within its scope.			SECOND: Anton TenWolde
FOR: 9	AGAINST: 0	ABSTAIN: 0	Notes: Chair not voting

DISCUSSION: Bert Phillips stated that historic buildings are unique.

MOTION CARRIES

- Peter Adams stated that the guideline application would be posted on the Google site for review and comment before application is submitted.

Tech Council proposed Guide on Historic Buildings:

- **Motion 5**

<p>Garth Hall moved that TC 4.4 respond to Tech Council (Ross Montgomery) that TC 4.4 supports expanded guidance on energy retrofits on historic buildings but believes that it is best developed in the context of an existing buildings guideline, rather than as a stand-alone document. There for we would like to include guidance on historic buildings in the Existing Buildings Retrofit Guide that we have been considering for the last year and that we intend on submitting for authorization shortly. We would like to collaborate with other committees, including TC 9.8 (Large Bldgs), TC 9.5 (Small Bldgs) and TC1.12 (Moisture Control in Buildings), on the development of an inclusive existing buildings retrofit guideline</p>			<p>SECOND: Hugo Hens</p>
<p>FOR: 9</p>	<p>AGAINST: 0</p>	<p>ABSTAIN: 0</p>	<p>Notes: Chair not voting</p>

- **DISCUSSION:** Bert Phillips stated that historic buildings are unique.
- **MOTION CARRIES**

- Garth and Teresa to respond to Tech Council

Update on current Standards:

- SSPC 90.1: Appendix G completed public review with some comments which are still being reviewed.
- SSPC 90.2: The SSPC received recommendations from Tech Council concerning goals for the standard which are being used to guide the new draft of the standard.
- SSPC 160: A third addenda (on interior conditions) is approved. The committee is meeting Tuesday morning to continue its efforts to improve the standard.

8. Old Business

Nothing to report.

9. New Business

Nothing to report

Motion 6

Peter Adams voted to adjourn meeting.			SECOND: Hartwig Kounzel
FOR: 9	AGAINST: 0	ABSTAIN: 0	Note: Chair not voting

- **DISCUSSION:** None
MOTION CARRIES –Meeting Adjourned at 4:05

Peter J Adams - Secretary, TC 4.4