

**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 30, 2014

Seattle, Washington

***These minutes were approved at the ASHRAE Winter Meeting in Chicago 2015
on January 26th 2015***

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

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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 30, 2014. Meeting convened at 2:15 pm.

Location: Room 618, Washington State Convention Center, Seattle, Washington

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

Monday, June 30, 2014 – Seattle, Washington

Building Materials and Building Envelope Performance

1. Introductions/Roll Call/Attendance

The Chair, Marcus Bianchi, called the meeting to order at 2:15pm. Roll call and introductions. A total of 32 committee members and guests were present. A quorum was present (8/12). Attendance is shown below.

Voting Members and Officers Present:

<u>Name</u>	<u>Affiliation</u>	<u>Role</u>
Marcus V Bianchi	Owens Corning	Chair
Peter J Adams	Morrison Hershfield Ltd	Vice Chair
Steven M Cornick	National Research Council Canada	Secretary/Webmaster
Fiona Aldous	WJE	
Charles C Cottrell	NAIMA	
Diana Fisler	Johns Manville	
Stanley D Gatland, II	CertainTeed Corporation	
Alexander G McGowan	Levelton Consultants Ltd	

Number of voting members present: 8 (0 non-quorum)

Voting Members and Officers Absent

<u>Name</u>	<u>Affiliation</u>	<u>Role</u>	<u>Notes</u>
Mr Larry Elkin	Law Engineering	ALI Coordinator	Corresponding Member
Sean M O'Brien	Simpson Gumpertz & Heger Inc	Program Chair	Corresponding Member
Theresa A Weston	Dupont	Standards Chair	Corresponding Member
Hollace S Bailey	Bailey Engineering Corporation		Voting Member
Laverne E Dalgleish	Air Barrier Assoc. Of America Inc.		Voting Member
Samuel Glass	USDA Forest Products Laboratory	Research Chair	Voting Member
Andreas H Holm	Fraunhofer IBP		Non quorum
Carsten Rode	Technical University of Denmark		Non quorum
Paul H Shipp	USG Corporation	Handbook Chair	Voting Member

Corresponding Members Present

<u>Name</u>	<u>Affiliation</u>
Michael D Blanford	U.S Dept. Of Housing & Urban Development
Andre O Desjarlais	Oak Ridge National Lab
Hugo SLC Hens	BPh Consult bvba
Roderick Jackson	Oak Ridge National Laboratory
Manfred Kehrer	ORNL
Jan Kosny	Fraunhofer USA
Hartwig M Kuenzel	Fraunhofer IBP
Wei Lam	WJE
Richard E Peters	TBS Engineering
Thomas E Ponder	Certainteed Corporation
Fitsum Tariku	BCIT
Paulo Cesar Tabares Velasco	National Renewable Energy Lab

Visitors Present

<u>Name</u>	<u>Affiliation</u>
Mike Beamer	WJE
Eduardo Carranza	Aquatect Consulting
Kristen Cetin	University of Texas at Austin
Ali Fallani	Fraunhofer CSE
Anthony Fontanini	Fraunhofer CSE
Robin Garber-Slaght	CCHRC
Wesley Hall	Reflectiv
Alejandro Neito	Roxul
Charlie Petty	Lamtec Corp
George Phelps	Knauf
Aj Rad	USG Corp
David Yarbrough	R&D Services

2. Review of Agenda/Approval of January 20, 2014 New York Minutes

There were no changes to the agenda (attached).

The draft minutes from the January 20, 2014 meeting in New York were posted on the TC Google Site in March and the ASHRAE TC site for review. Marcus Bianchi and Sam Glass made note of a few minor editorial changes. Steve Cornick moved to approve the New York minutes as amended. Alex McGowan seconded.

VOTE: For 7, Against 0, Abstaining 0, CNV; MOTION CARRIED

3. Report From the Chair/Membership/Roll-on, Roll-off

Report was presented by Chair, Marcus Bianchi

ANNOUNCEMENTS:

2014-2015 14-15 Rosters were distributed. Remember, the current 2013-2014 roster for your TC, TG or MTG is in effect until after the June meeting this year – through Wednesday, July 2nd. 2013-2014.

Reminder of the new award, the Outstanding Technical Committee Award. The purpose of the award is to recognize, annually, a single Technical Committee within each TAC Section that has the highest measured performance based on a set of weighted criteria as compared to other TCs within that same Section.

Chair's Training Workshop Reminder Training is now available as webinar before the ASHRAE meetings. Chairs and Vice-chairs are expected to attend.

The Chair reminded everyone that there was free Wi-Fi at the conference.

TAC approved the formation of the following new Multidisciplinary Task Group (MTG):

MTG.BD, Building Dampness

Scope: MTG.BD will develop a definition of a damp building and an assessment protocol to assess building dampness in accordance with Recommendation #3 of the ASHRAE Board of Directors' 2013 position document titled Limiting Indoor Mold and Dampness in Buildings. The group will also propose research to test the practicality, utility and cost-effectiveness of the protocol, and oversee that research if such is approved. The MTG will publish the protocol in ASHRAE transactions for use as appropriate by the building professions, the public health community and by the public at large.

The chair of the MTG is Lew Harriman. For more information on this MTG and the six other MTGs, please go to the MTG section on the following web page: <http://www.ashrae.org/tcs>. If your TC would like to have a voting representative on a particular MTG, please contact the ASHRAE Manager of Research and Technical Services, Mike Vaughn, at MORTS@ashrae.net.

There was reminder to update your bios. Employment Discipline added to ASHRAE BIO Online Input Form. A new input field titled Employment Discipline has been added to the ASHRAE online member (BIO) graphical input form and TAC would like ALL TC members to self-declare their employment discipline prior to the start of the new Society year on July 1, 2014 by going to the Members Only section (<https://eweb.ashrae.org/eweb/DynamicPage.aspx?Site=ASHRAE&WebKey=8396a37a-9fc2-4f50-9332-5eebebe73494>) and enter their employment discipline information.

Option for TC Subcommittee Meetings via Conference Calls and Web Meetings. More and more TCs are taking advantage of a new Society service that allows TCs to hold subcommittee meetings by phone and/or web. Many TCs are finding this to be a more efficient way for them to conduct subcommittee business and it also allows TC members that can't travel to meetings on a regular basis a way to still contribute to the TC. Such a change can also eliminate potential conflicts with the TC's program sessions at Society meetings. Please pass your conference call/web meeting/webinar

requests on to the Manager of Research and Technical Services, Mike Vaughn, at mvaughn@ashrae.org or MORTS@ashrae.net

There was a reminder for members to review the code of ethics. See the following link for the latest version of the ASHRAE Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.

IT was noted that according to the MOP all TC members, voting, corresponding, and provisional members are allowed to attend executive sessions as well as those invited by the Chair. Persons with a conflict of interest shall not attend.

The Chair noted that the TC Google Site is private to TC members and not publically searchable. Posting to the Google Group and on the Google Site is moderated.

Upcoming Workshops and Conferences: 2014

- **13th International Conference on Indoor Air Quality and Climate (Indoor Air 2014)** – July 7 - 12, 2014 – Hong Kong, China. Contact: <http://www.indoorair2014.org/>
- **Purdue University International Compressor Engineering, Refrigeration and Air Conditioning, and High Performance Buildings Conference** - Jul 14 - Jul 17, 2014 - Herrick Labs Purdue University West Lafayette, IN, USA, Contact: <https://engineering.purdue.edu/Herrick/Events/2014Conf>
- **CATAAR 2014** - September 10-12, 2014 – Centro Miguelete, Buenos Aires, ARGENTINA. Contact: <http://www.aafrio.org.ar/>
- **2014 ASHRAE/IBPSA-USA Building Simulation Conference** – September 10-12, 2014 – Atlanta, GA USA. Contact: www.ashrae.org/Simulation2014.
- **ICEBO 2014 (Int'l Conference for Enhanced Building Operations)** - September 14 – 17, 2014 - Tsinghua University; Beijing, CHINA. Contact: <http://icebo.tamu.edu/home>
- **AHR Expo-Mexico 2014** - September 23 – 25, 2014 - Mexico City, Mexico. Contact: <http://www.ahrexpomexico.com/eng/>
- **International Conference on Efficient Building Design: Materials and HVAC Equipment Technologies** — October 02 - 03, 2014 | Beirut, Lebanon. Contact: <https://www.ashrae.org/Beirut2014>
- **ROOMVENT 2014** - October 19 - Oct 22 , 2014 - São Paulo, Brazil — Contact: <http://www.roomvent2014.com.br/>

MEMBERSHIP: ROLL-ON/ROLL-OFF

Rolling off as VM's after the June meeting in Seattle (July 3rd, 2014).

Steve Cornick

Peter Adams

The chair has added the following VM's after the June meeting in Seattle (July 3rd, 2014).

Manfred Kehrer

Jan Kony

Fitsum Tariku

Theresa Weston

(Note: The Chair has added Pat Noonan and Rick Peters as voting members and they should appear on an updated roster after the Seattle meeting)

4. Research Subcommittee

Update was presented by Committee Chair, Marcus Bianchi on behalf of Sam Glass, Research Subcommittee Chair

Note TC 4.4 Google site: <https://sites.google.com/site/ashraetc44/home/research-page>

The Current Section 4 Research Liaison is Xudong Yang from Tsinghua University.

There is a new RTAR form, a fillable pdf. Brevity and clarity are stressed; the form has word limits and radio buttons. Please use it. <https://www.ashrae.org/standards-research--technology/research> (near bottom of page under "Information for TCs/TGs/MTGs Sponsoring Research")

Status updates:

1561-RP: Procedures to Adjust Observed Climatic Data for Regional or Mesoscale Climatic Variations (TC 4.2 lead, TC 4.4 co-sponsor). PMS meeting was held on Sunday June 29th with the contractor. The project is on track and on time. The contractor expects a draft report for the September 2014. Hartwig Künzel is the liaison. PMS will likely meet in Chicago to close the contract.

1696-WS: Thermal, Moisture and Air Transport Property Values for New Building and Insulating Materials (Alex McGowan, Steve Cornick). RAC reportedly has returned the WS with comments.

LETTER BALLOT: Work statement approved by letter ballot May 14, 2014: For 9, Against 0, Abstaining 0, Absent 4, Chair not voting. Submitted to RAC May 15, 2014.

1700-WS (TC 4.2): A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings (Steve Cornick). TC 4.4 voted to cosponsor 2014-1-20. Andre Desjarlais and Hartwig Künzel volunteered to represent TC 4.4 on PES/PMS if WS accepted. TC 4.2 has the work statement on hold pending disposition of 1325-RP results/incorporation into Standard 160.

1718-RTAR: Development of a Method to Determine the Moisture Transport Properties of a Roof Shingle System under Real Conditions (Manfred Kehrer). TC voted to accept RTAR at Denver meeting 2013-6-24. RAC returned RTAR with comments 2013-11-19. Kehrer revised RTAR and provided point-by-point responses to RAC comments. TC 4.4 voted to accept 2014-1-20 as revised. Cosponsored by TC 1.12 and SSPC 160. RL suggested finding co-funding or reducing budget and scope. Kehrer reduced budget from \$220k to \$160k and duration from 36 months to 24 months and eliminated aging effects from scope. Submitted to RAC May 15, 2014. RAC reportedly has returned the RTAR with some comments.

1730-RTAR: Research to Determine the Pressure Coefficients and Pressure Drop for Standard Venting Strategies and Components in Attic Spaces with Sloped Roofs (Anthony Fontanini, Dave Roodvoets). In Feb. 2014 RL suggested re-vote because RAC is unlikely to act on RTAR given current tally. Circulated to TC 4.4 for comments. Authors addressed comments and revised RTAR. RAC has returned reportedly with comments – too many deliverables and tasks should be more realistic. TC 4.10 will support this RTAR as well when it is next sent up to RAC.

LETTER BALLOT: Approved by letter ballot May 14, 2014: For 9, Against 0, Abstaining 0, Absent 4, Chair not voting. Seeking cosponsorship from TC 4.3 and 4.7. Submitted to RAC May 15, 2014.

Draft RTAR (TC 1.8): Performance of Vapor Retarder Systems Used on Mechanical Insulation (Charles Petty). TC 4.4 voted to cosponsor 2014-1-20. Andre Desjarlais volunteered to represent TC 4.4 on PES/PMS if RTAR/WS accepted. RTAR also co-sponsored by TC 10.3. TC 1.8 intends to discuss revisions in Seattle, vote, and submit to RAC.

Draft RTAR: Evaluating the Accuracy of Whole Building Energy Simulations by Comparison with Field Measurement Data (Sean O'Brien). Research subcommittee discussed 2014-1-19. Will be revised and posted on Google site for comments. Also seeking input from TC 4.7. No further action. There was discussion as to whether or not this RTAR belonged in TC 4.4 as well as what previous work has been done in this area; IEA Annex 58 (Responses of Building) and Annex 63 (User Behavior) and Best Test and te Best Test example suite.

Draft RTAR: Hygrothermal Properties of Aged Construction Materials (Steve Cornick). Revised based on input from Andre Desjarlais and posted on Google site prior to NY meeting. Research subcommittee discussed 2014-1-19. Comments requested. No further action.

Draft RTAR: Moisture Transfer in Building Materials at High Temperatures (Sam Glass). Posted on Google site 2014-1-7. Distributed at research subcommittee and discussed 2014-1-19. Comments requested. No further action.

Draft RTAR: Impact of Air-Flow on Thermal Performance of Airspaces behind Cladding (Drafted by SSPC 90.1 envelope subcommittee). SSPC 90.1 approached TC 4.4 with request for TC 4.4 to sponsor RTAR and SSPC 90.1 to cosponsor. Brief presentation at research subcommittee 2014-1-19 by Jonathan Humble, Jay Crandell, David Yarbrough. Draft RTAR posted on TC Google site. Comments received from Peter Adams and Marcus Bianchi. Currently the RTAR is a combined RTAR/Work Statement. The decision was to split the components out and have something to present in Chicago in January 2015.

[Old Business]

1670-RTAR: Research to Determine Energy and Moisture Impacts of Attic Ventilation (Dave Roodvoets, Mikael Salonvaara). TC voted by letter ballot 2013-8-14: For 2, Against 5, Abstaining 0, Not

returning ballot 6. RTAR not accepted. Reason for negative votes: proposed work seems to be dependent on results from another project that has not been accepted yet. No further action.

5. Handbook Subcommittee

Update was presented by Peter Adams interim Handbook Subcommittee Chair

Paul Shipp has stepped down as Handbook Chair. Laverne Dalgleish has volunteered to take his place. Chair Marcus Bianchi will arrange for ASHRAE to make the change official. For Handbook issues go to the following website:

<https://www.ashrae.org/resources--publications/ashrae-handbook-central>

The Handbook – Fundamentals is to be revised for 2017. The names of Handbook team are:

Laverne Dalgleish Handbook Chair

Handbook – Fundamentals revisers

- Chapter 25 – Marcus Bianchi
- Chapter 26 – Alex McGowan
- Chapter 27 – Charles Cottrell

Handbook – Applications revisers

- Chapter 44 – Peter J. Adams

Handbook – Applications: Chapter 44 of the 2015 Handbook – Applications is in the final phase. ASHRAE's Handbook Committee had some proposed changes. The manuscript is now posted for review on the TC Google site. Comments are welcome but a limited to the new changes. Deadline for comments is July 15, 2014.

Handbook – Fundamentals: All chapters will be uploaded to the TC Google site during the revision process.

Ch. 25: Marcus Bianchi is looking for help in revising the chapter. The coverage of heat transfer is adequate however there needs to be an improvement on the moisture transfer side.

Ch. 26: Alex McGowan said that the results of 1696-WS (material properties update) will not be ready for the 2017 Handbook. Proposal to update Table 3 in Chapter deferred until the Chicago 2015 meeting. Some improvements might be to make better use of the tables and perhaps to include some European data.

Ch. 27: Charles Cottrell asked for people to send more examples and he also requested a publication schedule.

ACTION ITEM: Revisers of the Handbook – Fundamentals chapters should prepare a chapter outline for Chicago 2015.

6. Program Subcommittee

Update was presented by Marcus Bianchi Chair on behalf of Program Subcommittee Chair, Sean O'Brien

Three programs were submitted for Seattle and 2 were accepted.

WORKSHOP 1 (INTERMEDIATE): Development of an ASHRAE Energy Guideline for Historical Buildings Recovery, Sponsor: GPC 34P (TC 01.12, TC 4.4 Co-sponsor), Chair: David Arnold.

TECHNICAL PAPER SESSION 3 (INTERMEDIATE): Super Insulated Retrofit Strategies, Climatic Design Conditions and Convection Enhancements, Sponsor: TC 4.4, TC 4.1 co-sponsor, Chair: Juan-Carlos Baltazar.

CEC deadlines for Chicago and Atlanta.

Chicago Meeting - January 24 - 28, 2015

- Chicago Seminar and Forum Session Proposals are due August 11, 2014
- Revised conference papers / Final Technical Papers due August 18, 2014
- Conf. and Tech. Paper Final Accept/Reject Notifications sent August 25, 2014
- Seminar, Forum, Workshop Accept/Reject Notifications sent September 8, 2014
- All presentation files (PPT) due online – January 2, 2015
- Conference Website: <http://www.ashrae.org/chicago/>

Seminar and Forum proposals for Chicago are due by Monday, August 11, 2014. Please visit the following site to submit your proposal:

<http://ashraem.confex.com/ashraem/w15/cfp.cgi>

Atlanta Meeting - June 27 – July 1, 2015

- Conference Paper Abstracts Due are due September 22, 2014
- Technical Papers initial drafts due September 22, 2014
- Conference Paper Abstract Accept/Reject Notifications sent October 6, 2014
- Website Opens for Seminar, Forum and Workshop Proposals on January 5, 2015
- Final Conference Papers Submitted for Review due January 5, 2015
- Conference Website: <http://www.ashrae.org/atlanta/>

Program Focus at Atlanta Annual Conference

- Track 1: HVAC&R Systems and Equipment
- Track 2: HVAC&R Fundamentals and Applications
- Track 3: Research Summit
- Track 4: Refrigeration
- Track 5: Building Operation, Maintenance and Optimization/Commissioning
- Track 6: Indoor Air Quality
- Track 7: Modeling throughout the Building Life Cycle

- Track 8: High Performance Buildings
- Track 9: Moving Advanced Energy Design Guidance to the Mainstream

For more information, go to: www.ashrae.org/atlanta

Also of note: 2014 ASHRAE/IBPSA-USA Building Simulation Conference – September 10-12, 2014 – Atlanta, GA USA. Contact: www.ashrae.org/Simulation2014.

7. Standards Subcommittee

Update was presented by Marcus Bianchi on the behalf of the Standards Subcommittee Chair, Theresa Weston.

The Standards liaisons for the following standards are below. Letter ballots were returned on Feb. 14th 2014.

Std.90.1: Jonathan Humble (11 for, 0 against, 0 abstention, CNV)

Std 90.2 Theresa Weston (11 for, 0 against, 0 abstention, CNV)

Std 160: Stan Gatland (10 for, 0 against, 1 abstention, CNV)

Stds 90.1 & 90.2: Theresa and Jonathan were absent for the meeting.

Std 160: Stan Gatland reported that Std. 160 was given a 2-year extension on the reaffirmation of the standard – a new edition was due this year. The first major task is a major change to the air-flow extension. There was considerable debate regarding the air flow extension. The next major task is to change the mold growth criteria. The plan is to use something like Viitanen’s latest model or Sedelbauer’s. There is to be a change in the language of the Standard to accommodate other standards such as Std. 189.1.

Other standards to monitor are: Std 189.1 and Std 189.2/IECC 700 (voted to be folded into IECC 700).

Steve Cornick moved that Diana Fisler be appointed as liaison to Std. 189.1. Alex McGowan seconded.

VOTE: (6, 0, 1, CNV)

Peter Adams moved that Theresa Weston be appointed as liaison to Std. 189.2/IECC 700. Diana Fisler seconded.

VOTE: (7, 0, 0, CNV)

8. Old Business

Nothing to report.

9. New Business

Nothing to report.

10. Adjournment

Alex McGowan moved to adjourn the meeting at 15:30

Steve Cornick – Secretary, TC 4.4

Action items

From the Seattle meeting, June 30, 2014

Person	Item	Date
Bianchi, Cottrell, and McGowan	Revisers of the Handbook – Fundamentals chapters should prepare a chapter outline for Chicago 2015.	January 1, 2015
Petty	Performance of Vapor Retarder Systems Communicate to TC 1.8 the result of the TC vote	January 1, 2015
Sean O'Brien;	Evaluating the Accuracy of Whole Building Energy Simulations by Comparison with Field Measurement Data; Revise and post on Google site;	-
All	High temperature materials properties RTAR , Members provide comments to Sam Glass	-
Humble, Yarbrough, and Crandell	Draft RTAR Impact of Air-Flow on Thermal Performance of Airspaces behind Cladding; task group review draft RTAR and revise.	January 1, 2015
Cornick	Prepare a proposal to update Chapter 26 Table 3	January 1 2015.

Summary of Research Projects

ID	Title	Champion	Status
1561-RP (TC 4.2)	Procedures to Adjust Observed Climatic Data for Regional or Mesoscale Climatic Variations	Steve Cornick	Künzel TC 4.4 PMS rep; draft report expected by Seattle; On time and on budget. Draft report expected in Sept. 2014
1670-RTAR	Research to Determine Energy and Moisture Impacts of Attic Ventilation	Dave Roodvoets, Mikael Salonvaara	On hold.
1696-WS	Thermal, Moisture and Air Transport Property Values for New Building and Insulating Materials	Alex McGowan, Steve Cornick	Returned from RAC with comments. Waiting for official response.
1700-WS (TC 4.2)	A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings	Steve Cornick	On hold pending disposition of results of 1325-RP.
1718-RTAR	Development of a Method to Determine the Moisture Transport Properties of a Roof Shingle System under Real Conditions	Manfred Kehrer	Returned from RAC with comments. Waiting for official response..
1730-RTAR	Research to Determine the Pressure Coefficients and Pressure Drop for Standard Venting Strategies and Components in Attic Spaces with Sloped Roofs	Anthony Fontanini, David Roodvoets	Returned from RAC with comments. Waiting for official response.
Draft RTAR (TC 1.8)	Performance of Vapor Retarder Systems Used on Mechanical Insulation	Charles Petty	Intended to vote out to RAC in Seattle.
Draft RTAR	Evaluating the Accuracy of Whole Building Energy Simulations by Comparison with Field Measurement Data	Sean O'Brien	Under revision; seeking input from TC 4.7; needs a review of previous and current work..
Draft RTAR	Hygrothermal Properties of Aged Construction Materials	Steve Cornick	Under revision.
Draft RTAR	Moisture Transfer in Building Materials at High Temperatures	Sam Glass	Under revision.
Draft RTAR	Impact of Air-Flow on Thermal Performance of Airspaces Behind Cladding	Task group: Manfred Kehrer, Theresa Weston, Marcus Bianchi, Jay Crandell	RTAR/WS to be split into an RTAR and WS and posted to the TC Google site..

ASHRAE Technical Committee 4.4
Building Materials and Building Envelope Performance

Main Committee Agenda

Date: Monday, June 30, 2014

Time: 2:15 pm – 4:15 pm

Location: Level 6, Room 618
Washington State Convention Center
Seattle, Washington

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| 1. | Introductions/Roll call/Attendance | 2:15 |
| 2. | Agenda/Approval of minutes – Steve Cornick [cornicksm@gmail.com] | 2:20 |
| 3. | Report from the Chair.Membership/Roll-on roll-off – Marcus Bianchi [Marcus.Bianchi@owenscorning.com] | 2:25 |
| 4. | Research Subcommittee – Sam Glass [svglass@fs.fed.us] | 2:35 |
| 5. | Handbook Subcommittee – Peter Adams [PAdams@morrisonhershfield.com] | 2:50 |
| 6. | Program Subcommittee – Sean O’Brien [smobrien@sgh.com] | 3:35 |
| 7. | Standards Subcommittee – Theresa Weston [theresa.a.weston@usa.dupont.com] | 3:45 |
| 8. | Old business | 4:05 |
| 9. | New business | 4:10 |
| 10. | Adjournment | 4:15 |

(End)