

**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**

These DRAFT minutes have not been approved and are not the official, approved record until approved by this committee.

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, February 3, 2020. Meeting convened at 2:15 pm.

Location: Hilton Orlando, L, Lake Eola B – Orlando, FL

DISTRIBUTION

All members of TC 4.4 plus the following:

TAC Chair

Committee Liaisons

ADDITIONAL DISTRIBUTION

Manager of Standards

Manager of Research and Technical Services

ASHRAE TC 4.4 MINUTES

Building Materials and Building Envelope Performance

1. Introductions

The Chair, Diana Fisler, called the meeting to order at 2:15pm, which was followed by roll call by Membership Chair, Mehdi Ghobadi, and introductions.

2. Membership/Roll Call/Attendance (M. Ghobadi, Membership Chair)

Voting Members rolling off June 30, 2020 include Wahid Maref.

Voting Members rolling on starting July 1, 2020 TBD. Contact TC 4.4 Chair if interested – note, in order to be eligible for voting status you must be a Corresponding Member for min. 2 years.

Voting Members and Officers Attended:

<u>Name</u>	<u>Affiliation</u>	<u>Role</u>	<u>VM</u>
Diana Fisler	Johns Manville	Chair	Voting Member
Manfed Kehrer	WJE	Vice Chair	NVM
Alejandra Nieto	ROCKWOOL	Secretary	NVM
Leslie Scheppelmann	WJE	Webmaster	NVM
Mehdi Ghobadi	NRC	Membership Chair	NVM
Paulo Tabares	Colorado School of Mines	Program Chair	NVM
Laverne Dagleish		Handbook Chair	Voting Member
Theresa Weston	Dupont	Standards Chair	NVM
Peter Adams	Morrison Hershfield		Voting Member
Andre Desjarlais	ORNL		Voting Member
David Yarborough	R&D Services		Voting Member
Wahid Maref	Ecole de Technologie Superieure		Voting Member
Sam Glass	USDA Forest Products Laboratory		Voting Member
David Finley			Voting Member
Florian Antretter	Fraunhofer IBP		VM (Non Quorum)
Sam Taylor			Voting Member

Total Number of VM: 9 (1 non-quorum)

Voting Members and Officers Absent:

<u>Name</u>	<u>Affiliation</u>	<u>Role</u>	<u>VM</u>
Chris Schumacher	RDH Building Science	Research Chair	Voting Member
Theresa Weston	Dupont	Standards Chair	NVM
Roderick Jackson	NREL		Voting Member
Fitsum Tariku	BCIT		Voting Member

Corresponding/Provisional Members Attended:

<u>Name</u>	<u>Affiliation</u>
Marcus Bianchi	NREL
Achilles Karagiozis	NREL
Jan Kosny	UML
Simon Pallin	ORNL
Fiona Aldous	WJE
Paul Grahovac	Prosoco
Andre Desjarlais	ORNL
Alex McGowan	WSP Canada
Florian Antreter	Fraunhofer IBP
Guy Long	Prosoco
Shayne Spence	Lamtec
Charlie Petty	Lamtec
Pat Noonan	Knauf Insulation
Anthony Fontanini	NREL
Mike Blanford	HUD
Kristen Cetin	Michigan State
Keith Nelson	ECS Mid Atlantic
Craig Marden	Owens Corning
Charles Clark	Brick Industry Association
Alec Cusick	Owens Corning
Wahid Maref	ETS Montreal
Rick Peters	TBS Engineering
Christy Williamson	Christine Williamson LLC
Neil Freidberg	Owens Corning
Zain Anjum	SGH
Alamelu Brooks	Energy Solutions

Total number of CM, PCM: 26

Guests Attended

<u>Name</u>	<u>Affiliation</u>
Bert Phillips	UNIES Ltd.
Taz Gowtts	RWO
Charlie Haack	NAIMA
Nate Huygen	National Brick Researc Center
Ryan Asava	Smith Group
Rains Vickery	Stell

Total number of guests: 6

3. CEC Guest Topic

CEC recognized and awarded a plaque to Andre Desjarlais, Oak Ridge National Lab, for his work on the steering committee for 2019 Buildings XIV International Conference in Clearwater, FL.

3. Report from the Chair (D. Fisler, Chair)

Thanks to Rick Peters for his excellent service as Chair.

If you would like to join this TC please go to the ASHRAE website and choose “join TC”. This will add you as a provisional corresponding member.

<http://tc0404.ashraetcs.org/membership.php>

Presentations should follow ASHRAE guidelines and templates (found in the Speaker Resources area of the ASHRAE website). This is true even for presentations at the subcommittee. The standard ASHRAE disclaimer is required.

<https://www.ashrae.org/technical-resources/technical-committees/tc-training-and-presentations>

Reorg items: Parts of section 4 may need to decide on action. TC 4.4 should take a vote. This will be discussed under old business.

ASHRAE requests TC review the statement of purpose annually.

There is a new ASHRAE vision statement: “A healthy and sustainable built environment for all”.

Please be aware there are lots of training materials on the ASHRAE website.

4. Approval of Minutes (A. Nieto, Secretary)

The draft minutes from the June 24, 2019 meeting in Kansas City, MO were posted to the ASHRAE Website and Basecamp for review.

Action: Motion to approve the minutes with editorial changes as provided by Sam Glass.

Manfred Kehrer, seconded by Sam Glass.

VOTE: For 8, Against 0, Abstaining 0; CNV, MOTION CARRIED

5. Program Subcommittee Report (P. Tabares, Programs Chair)

Updates:

Programs submitted for Orlando were not accepted.

Upcoming ASHRAE Meetings Tracks:

Orlando (Winter 2020)	Austin (Annual 2020)	Chicago (Winter 2021)
Fundamental and App	Fundamental and App	Fundamental and App
Cutting Edge Approaches (water-energy nexus)	<i>Research Summit</i>	Systems and Equipment
<i>High Efficiency Design and Operation</i>	Grid-Interactive Efficient Built Environment	Building Performance and Commissioning for Operation and Management:
Big Data and Smart Controls	Multifamily and Residential Buildings	Energy Conservation
<i>Ventilation, IAQ and Air Distribution System</i>	Resilient Buildings and Communities	International Design
	Zero Energy Buildings and Communities: Opportunities and Challenges.	Standards, Guidelines and Code
	Building Myths	IEQ

Proposed Seminars for Austin:

1. Back to the future on High Efficiency Design and Operation

Track: Multifamily and Residential Buildings

Chair: Fitsum Tariku

1. Ron Judkoff NREL/DOE. broad view on building energy consumption over 20 years. Focus on large commercial (ICI, multi-family)., Craig Christensen, ex-DOE now in NREL
2. Wahid. Review of approaches of building envelope design; past, existing and new
3. Peter Adams: HVAC. Paulo to contact Co-sponsor with 9.1 (large building system) 9.8 (applications), 7.6 (building energy performance)? Peter to also reach out

2. Grid Interactive Building envelope (seminar or extended abstracts)

Track:

Chair: Paulo Tabares

1. ORNL (Mika)
2. NREL (Marcus)
3. TBD

3. Thermal Storage/PCMs (Title TBD)

Track: Research

Chair: Marcus Bianchi, Ravi

1. Paulo- PCM optimization
2. Kyle (ORNL)

4. Meet the real myth busters!!

Track: Building Myths

Chair: Mehdi Ghobadi

1. Joe/John (Alejandra to help contact)
2. Lew Harriman (Alejandra to help contact)
3. Christy Williamson (Alejandra to help contact)
4. Alison Bailes (Marcus)
5. Martin Holladay: Editor green building advisor
6. Steven Doggett: (Andi to contact)

5. Resilient Buildings: envelope-HVAC interaction considerations

Track: Resilient Buildings and Communities

Chair: Wahid Maref

1. Speaker: U Toronto (Alejandra to contact) Thermal Autonomy
2. Speaker: Lisa White (Passive House) relationship between grid and passive hous
3. Speaker: 2: recovering/resilience climate change (NRC) Mehdi to help find speaker
4. Speaker: Achilles whole building performance

6. Cross laminated buildings, the new kid on the block in High rise buildings

Track: Multi-family and residential buildings

Chair: Paulo Tabares/Sam Glass

1. Paulo/Sam Glass: hygrothermal
2. Graham Finch (RDH) present on CLT (Marcus can contact)
3. Stuart

7. Modular assembly for resilient community: getting the details right

Track: Resilient Buildings and Communities

Chair: Diana Fisler

1. DOW
2. Proset
3. NREL (Shanti)
4. Paul Grahovac (BuildSmart)

Action: Motion to move forward with proposed seminars for 2020 annual meeting in Austin, TX as discussed.

Manfred Kehrer, seconded by Wahid Maref

VOTE: For 8, Against 0, Abstaining 0; CNV, MOTION CARRIED

Proposed Seminars for Chicago:

1. Idle buildings are the devil's playground?

Track: Environmental health through IEQ

Chair: Diana Fisler

Co-sponsors: TC 1.12, TC 1.8

Action: Motion to support co-sponsor of described seminar as proposed by Diana Fisler.

Peter Adams, seconded by Sam Glass

VOTE: For 8, Against 0, Abstaining 0; CNV, MOTION CARRIED

2. Thermal performance of air permeable claddings

Track: Energy Conservation

Chair: Paulo Tabares

1. Dolaana PMS 1759
2. Nate: CFD+ experimental testing: R-value of ventilation brick veneer assembly
3. Mehdi (NRC): reflective insulation in air cavity
4. Wahid: thermal performance of building envelope using reflective materials

3. Building commissioning (TBD)

Track: Building Performance and Commissioning for Operation and Management

Chair: TBD

1. Fiona Aldous
2. Peter Adams
3. TBD

4. Reflective barriers (TBD)

Track: TBD

Chair: Dave Yarborough

1. Dr. Bill Miller
2. Mario Medina

5. VIP, integration of new materials for better performance?

Track: Energy Conservation

Chair: Mehdi Ghobadi

1. Jan and Dave have a paper
2. Prof. from Korea
3. ORNL (Mika Solanvaara)
4. Wahid Maref

6. Hygrothermal modeling: today, tomorrow and the future

Track: Fundamentals and Applications

Chair: Achilles Karagiozis

1. Wahid Maref
2. Simon Pallin: developing THERM to include moisture
3. Florian A.

7. Building envelope recovery from wind and floods

Track: TBD

Chair: Andre Desjarlais

1. Pete Consigli (Restoration Industry Association)
2. Baskaran (NRC): post disaster for roofing

3. TBD (Andre to find)

**Motion: Vote to move forward with proposed 6 seminars for 2020 annual meeting in Chicago.
Andre Desjarlais, second by Manfred Kehrer**

VOTE: For 8, Against 0, Abstaining 0; CNV, MOTION CARRIED

Additional Program Discussions:

- 1. Implementing thermal bridging in 90.1**

Co-sponsor with 90.1 – TBD

- 2. All paths lead to zero: toward zero energy building, initiatives**

Chair: Wahid Maref

1. Peter Adams: Everybody needs a TEDI bear
2. *Status of passive house*
3. *NRCan?*

- 3. Climate Change resilience: overheating**

Co-sponsor: TC 2.8 Sustainability, TC 2.4 to co-sponsor

- 4. Hygrothermal materials properties (symposium)**

Co-sponsor: TC 2.8 Sustainability, TC 2.4 to co-sponsor

1. Chris Schumacher
2. Florian
3. NRC

6. Handbook Subcommittee Report (L. Dalglish, Handbook Chair)

The ASHRAE 4.4 Technical Committee is currently responsible for revising Chapters 25, 26 and 27. The deadlines for the revisions are:

- Feb 1, 2020 Outline revisions
- May 15, 2020 Revise Chapters
- May 15, 2020 Revised chapter to TC for review
- July 1, 2020 TC approves chapter
- August 1, 2020 Chapter to HB Community liaison

Chapter 25 – Principal Revisor, Marcus Bianchi

A question was raised about the difference between Chapter 36 (1.12) and Chapters 25 (4.4). It was indicated that Chapter 36 has a lot of fundamentals which are like Chapter 25.

The title Chapter 36 is Moisture Management in Buildings. It is the moisture transport mechanisms that affect indoor humidity. It was suggested that 1.12 organize a joint WG with 4.4 to reorganize Chapter 36

with input from 4.4. The preference was to have 1.12 reference material in Chapters 25, 26 and 27 rather than duplicate information. It was unsure who the Principal Revisors of Chapter 36 currently is.

The difference seems to be that Chapter 36 deals with the whole building including the building systems and Chapter 25 deals with the building envelope only.

The title of Chapter 25 is Heat, Air, and Moisture Control in Building Assemblies (focusing on materials) whereas Chapter 36 is Moisture Management in Buildings focusing on the HVAC system and the overall performance of buildings. It was agreed that there is a need for discussion and to clarify the difference between the chapters and what should be included in the respective chapters.

Note: The scope of 4.4 is:

Technical Committee 4.4 is concerned with the requirements and overall performance of the building envelope as it relates to: 1) heat, air and moisture related properties of building materials 2) fundamental heat, air and moisture transport processes of assemblies; 3) interactions with interior conditions and HVAC systems. In addition, TC 4.4 is concerned with the properties of materials used in mechanical systems to control heat and moisture flows.

Chapter 25 is Heat, Air, and Moisture Control in Building Assemblies

Note: The scope of 1.12 is:

Technical Committee 1.12 - TC 1.12 is concerned with the interaction between the weather, the building envelope, its systems and its occupants which either lead to moisture accumulation or which prevent it. The committee performs cross-cutting research and collects and distributes information to help the public and the professions avoid problems associated with excessive moisture. These efforts are coordinated with other technical committees, industries and professions which are responsible for individual systems, building components and public health and safety.

Chapter 36 is Moisture Management in Buildings

It was agreed that the Chair of 4.4 will coordinate discussion between the two groups and at the ASHRAE summer meeting a presentation will be made on the background of the chapters and the difference between 4.4 chapters 25,26, 27 and 1.12 chapter 36. The presentation will include suggestions on how to separate the work between the two chapters.

A question was raised why Chapter 25 includes nomenclature and Chapters 26 and 27 does not. The Principal Revisors are asked to consider this as part of the revisions to Chapter 25 and 26.

Chapter 25 with revisions has been posted in BaseCamp.

Chapter 26 – Principal Revisor Hua Ge

It was stated that there will be data on material properties from RP 1696 available by the ASHRAE summer meeting. A concern was raised about the timeline and the need to review the data that comes from RP 1696 before being able to be inserted into Chapter 26.

The Principal Revisor has not received a lot of comments or proposed revisions. All 4.4 members are encouraged to review the Chapter and submit comments as quickly as they can.

The Subcommittee discussed Fig 1 and it was agreed that the figure provides good general information, but concern was raised when actual numbers are included. It was suggested that Figure 1 be used but the numbers are struck.

The Subcommittee used most of the time allotted for the Handbook Subcommittee meeting for Chapter 26 and only discussed Figure 1 which indicated that there may be many opportunities for improving Chapter 26.

The descriptions and values for different materials in Chapter 26 were obtained by the Principal Revisor reaching out to various industries and their members.

Chapter 27 – Principal Revisor, Mikael Salonvaara

During the last round of revising the Chapters, no comments were received, and Chapter 27 was published without revisions.

Mikael Salonvaara agreed to be the Principal Revisor for Chapter 27 and all 4.4 members are encouraged to provide their comments to him.

Additional discussions:

All 4.4 members were encouraged to provide input into the Chapters as there are new materials on the market, materials have been discontinued. Other materials have move to long term thermal resistance for any materials that contains a blowing agent that is retained in the material for 180 days or more.

The Chair of the Handbook Subcommittee reminded all members that ASHRAE is on continual maintenance for the Handbooks. That means that the Subcommittee does not need to wait for the next revision of the hard copies of the Handbooks. Modifications can be proposed and made to the electronic copies on an ongoing basis.

7. Research Subcommittee Report (M. Bianchi, acting Research Chair)

Announcements

- Chris Schumacher unable to attend Orlando meeting
 - o ending his role as RSC Chair in June
 - o Marcus Bianchi ran the meeting for Chris. Being nominated TC 4.4 RSC Chair
- Reminder that David Claridge is now Section 4 RL
- Research Chair Breakfast was held early morning, Monday February 3.

Active Research Project Status

1696-RP

“Thermal, Moisture and Air Transport Property Values for New Building and Insulating Materials”

PMS: Alex McGowan (Chair), Sam Glass, Theresa Weston, Achilles Karagiozis

PI: Chris Schumacher (RDH Building Science Laboratories)

- History:
 - o Contract awarded Fall 2015
 - o 2 no-cost extension granted
 - o Paper was accepted to Buildings XIV, Clearwater, Dec 2019
 - o Presentation was delivered to Buildings XIV, Clearwater, Dec 2019
- Status:
 - o Completion date of Feb 28, 2020
 - o PMS has reviewed 4 of 6 draft sections of report plus half appendices
 - o PI has provided PMS with plan to have final draft completed by end of Feb. with intention to include in Chapter 26 revisions; however, review by TC 4.4 will not happen until after that date
- Actions:
 - o Immediate: PI to request one last no-cost extension through to June 30, 2020
 - o Feb 17, 2020: Final Draft to be submitted to PMS for review and copied to RAC
 - o Mar 16, 2020: Final Report to TC 4.4 for review & post to Basecamp
 - o Mar 30, 2020: Deadline for feedback from TC 4.4
 - o April 13, 2020: Letter ballot out to TC 4.4 members
 - o April 27, 2020: Deadline for letter ballots returned
 - o May 11, 2020: Done

Motion: PMS recommend no cost 4-month extension.

Wahid Maref, second by Laverne Dalgleish

VOTE: For 8, Against 0, Abstaining 0; CNV, MOTION CARRIED

1759-RP

“Impact of Airflow on Thermal Performance of Airspaces behind Cladding (Phase 1 of 2)”

PMS: Paulo Tabares (Chair), Hua Ge, Jay Crandell, Marcus Bianchi

PI: Dolaana Khovalyg (EPFL)

- History:
 - o Contract awarded Spring 2018
 - o 1 no-cost extension granted
- Status:
 - o Work substantially complete
 - o PMS and PI working to settle on final recommendations for implementation in laboratory testing and for field practitioners
- Actions:
 - o A 6-month no-cost extension will be voted on at the TC 4.4 meeting.

Motion: PMS recommend no cost 6-month extension.

Dave Yarbrough, second by Manfred Kehrer

VOTE: For 8, Against 0, Abstaining 0; CNV, MOTION CARRIED

Pending Research Project Status

1718-WS

“Development of a method to determine the moisture transport properties through an asphalt shingle roof system under hot and humid conditions?”

Authors: Mika Salonvaara (took over from Manfred Kehrer)

- History:
 - o Summer 2014 – RTAR accepted
 - o Fall 2015 – WS 1 returned (not accepted)
 - o Fall 2018 – WS 2 returned with conditional acceptance
- Status:
 - o Accepted by RAC with minor changes
 - o RL says comments should be addressed before RAC’s spring 2020 mtg
- Actions:
 - o Confirm with RL: Do we resubmit to RAC or just get RL to approve changes? No submission.
 - o Confirm with Mika: is he on track for Mar 15, 2020 deadline? Need help? Mika recommended to let the Work Statement die. There was discussion if we needed to vote on this, but we agreed that a vote would not be needed.

1730-WS

“Research to determine the mass flow rate correlations across standard venting strategies and components in attic spaces with sloped roofs”

Authors: Anthony Fontanini and David Roodvoets

- History:
 - o W 2014 – RTAR accepted
 - o F 2019 – WS 1 returned (not accepted)
- Status:
 - o WS 1 not accepted but returned with comments from RAC
 - o RL says comments should be addressed and we should resubmit WS to RAC for their spring 2020 mtg
 - o Anthony to revise with support ORNL and others
- Actions:
 - o Confirm with Anthony: is he on track for Mar 15, 2020 deadline? Need help?
 - o Confirm who assisting TC 4.4 members are
 - Neil Freidberg volunteered.

- Anthony and David did not attend the meeting. Neil Freidberg was in the audience and will support it.

Additional Discussion

Short brainstorming sessions will be planned to be scheduled in Austin, TX.

Actions: Marcus Bianchi/Chris Schumacher to send out email to prepare for meeting (April/May)

Discussion around research funding in ASHRAE → How much is available, projects in queue?

ASHRAE seeking input to update the research strategic plan → Sam to send link to Basecamp for TC to review

8. Standards Subcommittee Report

Updates were presented by the individual Liaisons to the TC as the Standards Subcommittee Chair Theresa Weston was not present.

Standard 90.1 (a.k.a. Commercial minimum compliance energy standard) Energy Standard for Buildings Except Low-Rise Residential Buildings (Jonathan Humble - reporting)

Purpose: To establish the minimum energy efficiency requirements of buildings other than low rise residential buildings for

- a. design, construction, and a plan for operation and maintenance; and*
- b. utilization of on-site, renewable energy resources.*

Report:

- 2019 edition has been published,
- Committee preparing for 2020 edition by developing work plan (15 + aspirational goals),
- Addendum “av” (Thermal Bridging, related to RP-1365) will be going out for a 2nd public review,
- Mr. Humble continues to report on TC 4.4 activities.

Discussion → moisture in building warning to be further discussed next meeting

Standard 90.2 (a.k.a. Residential leadership energy performance code) Energy Efficient Design for Low-Rise Residential Buildings (Jonathan Humble reporting)

Purpose. The purpose of this standard is to establish the minimum whole-building energy performance requirements for energy efficient residential buildings.

Report:

- Published 2018 edition in 2019,
- Revising title purpose and scope to move from above code to high energy efficiency standard for all residential occupancies to read (Draft at this time) “1. PURPOSE - The purpose of this standard is to establish the minimum whole-building energy performance requirements for highly energy efficient residential buildings”,

- New categories being considered:” 8. renewable energy systems, 9. energy storage systems and their controls and control algorithms, and 10. internet connected control of the systems listed above, 11. energy management systems”.
- Revisiting energy metrics in preparation for the next edition.

Standard 160 Criteria for Moisture-Control Design Analysis in Buildings (Achilles Karagiozis reporting)

Purpose: The purpose of this standard is to specify performance-based design criteria for predicting, mitigating or reducing moisture damage to the building envelope, materials, components, systems and furnishings, depending on climate, construction type, and HVAC system operation. These criteria include the following:

- a) criteria for selecting analytic procedures*
- b) criteria for inputs*
- c) criteria for evaluation and use of outputs*

Report:

- Vote on public review of moisture reference year addendum
- Currently working on durability criteria: (1) Corrosion, (2) Freeze/Thaw
- There have been several roster changes

Standard 189.1 (a.k.a. Green and sustainable standard, not a minimum) Standard for the Design of High Performance Green Buildings, Except Low-Rise Residential Buildings (Jaya Dorsey & Jonathan Humble reporting)

Purpose: The purpose of this standard is to provide minimum requirements for the siting, design, construction, and plans for operation of high-performance green buildings to reduce emissions from buildings and building systems, enhance building occupant health and comfort, conserve water resources, protect local biodiversity and ecosystem services, promote sustainable and regenerative materials cycles, enhance building quality, and enhance resilience to natural, technological, and human-caused hazards; ...

Report:

- This is a joint venture project with ASHRAE, IES, AIA, ICC, and USGBC,
- Business agreement between ASHRAE and International Code Council to create one high performance green code for North America,
- Recently published 2018 document entitled the International Green Construction Code which combines the technical requirements of Standard 189.1 and the ICC International Green Construction Code,
- Continue to use ASHRAE Standard 90.1 as the benchmark with modifications for the green code, and

- Preparing to complete all proposals and publish a 2020 ASHRAE edition, and a 2021 International Green Construction Code edition.

New Standards Projects Initiated:

- **Standard 227P Passive Building Design**
Purpose: This standard provides requirements for the design of buildings that have exceptionally low energy usage and that are durable, resilient, comfortable, and healthy.10/3/19.
- **SPC 228P Standard Method of Evaluating Net-Zero Energy Building Performance**
Purpose: This standard sets requirements for evaluating whether a building or group of buildings meets a definition of “net-zero energy”. It provides a consistent method of expressing qualifications for net-zero energy buildings associated with the design of new buildings and the operation of existing buildings.

ASHRAE International Standards Participation – Fiona Aldous

Request by members of the ISO TAG US Committee to have TC 4.4 get involved by reviewing ISO proposed updates and reporting findings and recommendations to the US Committee. Currently under review is “Diagnosing Moisture Damage in Buildings and Implementing Countermeasures Part 1: Principles, Nomenclature and Moisture Transport Mechanisms”. The meeting is Tuesday 1- 3:30 in the Lake Lucerne room.

Stephanie to connect with Diana → upload document to basecamp and comment

9. Old Business

Re-org statement:

Rick Peters, previous TC 4.4 Chair, sent a position letter on behalf of the TC in 2019. The letter is uploaded on Basecamp. Based on discussions with ASHRAE, perception is that smaller TC’s will join and larger TC’s will be unaffected.

Action: Motion to formally review and revise TC 4.4 scope as needed to ensure clarity and differentiation from TC 1.12.

Andre Desjarlais, second by Manfred Kehrer.

VOTE: For 8, Against 0, Abstaining 0; CNV, MOTION CARRIED

10. New Business

Action: Diana to block out time next meeting for scope discussion.

TC to review document “Heat Transmission Coefficients for Walls, Roofs, Ceilings and Floors” that is uploaded on Basecamp. Request came from ASHRAE publications.

Action: Document and changes to be discussed during research subcommittee meeting in Austin, TX meeting

David Finley moved a motion to adjourn the meeting at 4:10. Second by Sam Glass.

Minutes by Alejandra Nieto – Secretary, TC 4.4. Next meeting: Austin, TX June 29, 2020