

ASHRAE TC 4.5 Fenestration

Scope: TC 4.5 is concerned with the identification and evaluation of all physical properties of: 1) Glasses and other glazing materials, 2) Shading and shielding materials and devices, and 3) Control devices and strategies which influence the radiant, conduction, and convection transfer of both heat and light through fenestration systems. It is also concerned with the development of procedures for calculating and measuring solar heat gain, daylight admission, and heat transfer through fenestration systems.

TC Web Site: <http://tc45.ashraetcs.org>

| TC/TG/TRG NO.: | 4.5 | TC/TG/TRG TITLE: | Fenestration | | |
|--|-------------------------|------------------|----------------------|---------|--|
| DATE OF MEETING: | January 31, 2011 | LOCATION: | Las Vegas, NV | | |
| DATE ISSUED: | June 23, 2011 | RECORDED BY: | Anil Parekh | | |
| MEMBERS | VOTING | TERM | | PRESENT | |
| | | On | Off | | |
| <i>Christian Kohler / LBNL (Chair)</i> | ✓ | | 2012 | ✓ | |
| <i>Aziz Laoudi / NRC</i> | ✓ | | 2015 | ✓ | |
| <i>John Hogan / Seattle DPD</i> | ✓ | | 2013 | ✓ | |
| <i>Bipin Shah / WinBuild</i> | ✓ | | 2014 | ✓ | |
| <i>Ray McGowan</i> | ✓ | | 2013 | ✓ | |
| <i>Athanasios Tzempelikos / Purdue</i> | ✓ | | 2015 | ✓ | |
| <i>Brian Crooks / Cardinal</i> | ✓ | | 2011 | ✓ | |
| <i>Hakim Elmahdy / NRC</i> | | | | | |
| <i>Anil Parekh / NRCan (VC/Secretary/Research)</i> | | | | ✓ | |
| <i>Charlie Curcija /LBNL</i> | | | | ✓ | |
| <i>Willie duPont / Sunergy (Conf & Expo)</i> | | | | ✓ | |
| <i>Mike Collins / U of Waterloo</i> | | | | ✓ | |
| <i>John Wright / U of Waterloo</i> | | | | ✓ | |
| <i>Roger LeBrun / Velux</i> | | | | ✓ | |
| <i>James Krahn / Marvin</i> | | | | ✓ | |
| <i>Graham Parker / PNNL</i> | | | | ✓ | |
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| Total voting members: 7 Non-quorum: 2 | | | | | |
| Voting members present: 7 of 7 | | | | | |

INTRODUCTIONS

- Everyone introduced.
- Quorum reached for today's meeting. 7 voting members.
- New roster will be in place on July 1 with 7 regular voting members and 2 no-quorum members.

APPROVE AGENDA

- Agenda for the meeting was approved with show of hands.

APPROVE MINUTES FROM PREVIOUS MEETING

- Minutes of June 2010 (Albuquerque, NM) were approved (John moved and Ray seconded).

ANNOUNCEMENTS (TC Chair)

- TCs should use Google Groups and Sites => Obtain a gmail account for easier access to Google sites
- Update your bios
- Montreal => Bring your passport
- ASHRAE has a subscription for web conferences, and encourages TCs to use this functionality. Contact mvaughn@ashrae.org
- There is a "Help Wanted" section on the ASHRAE website, where TC's can post requests for help (such as handbook chapter review help)
- Thank You letters are available.
- HVAC&R papers or Technical papers can be deliverables for Research projects. Conference papers are not acceptable.

LIAISON REPORTS

Technical Activities Committee (TAC)

n/a

Standards

n/a

Research Administration Council (RAC) (Agami Reddy)

- \$1.3 million funding available for new research projects
- About 18 TRPs out for bids in the Spring 2011
- Provided an update on status of RTARs and WS 1414.

Conferences and Expositions Committee (CEC)

See Willie Dupont's report later

Handbook Committee

June 2012 to vote to approve revisions to Chapter.

Chapter Technology Transfer Committee

n/a

ASHRAE Learning Institute (ALI) / Professional Development Committee (PDC) –

n/a

SUBCOMMITTEE REPORTS

Research (Anil Parekh)

Research Subcommittee Meeting Chairs Report

Attached.

Active Research

1415 – Thermal and Optical Analysis of Tubular Daylighting Devices – Aziz Laouadi of NRC Canada is the Principal Investigator. Contract was signed on May 1, 2010 with an eighteen months total duration of project. First task is literature review. At the PMS meeting, Aziz provided more details.

Long Range Research Plan

Dropped: 1367-RTAR (E95) “Determination of Long Term Performance of Fenestration Products Exposed to Specified Environmental Exposure” – (Primary Authors: Hakim Elmahdy and Charlie Curcija) –It was decided to have this RTAR dropped from the list.

1414-RTAR (A04) “Update of U-Factors, Solar Heat Gain Coefficients and Visible Transmittance of Standard Fenestration Units Made from Representative Fenestration Frame and Glazing Systems in the Fenestration Chapter of the Handbook of Fundamentals” – (Primary Authors: Jon McHugh, Tom Culp, William duPont and Ray McGowan) – Charlie Curcija and Bipin Shah revised the work statement with substantive edits and modifications and also addressed RAC’s comments. This work statement will be submitted for the ballot approval at the TC main meeting. Charlie Curcija will prepare a covering letter for the final submission of SOW to RAC. [At the TC 4.5 meeting, PES was formed with Mike Collins and Ray McGowan. Ray will provide the bidders’ list to Charlie to complete the covering letter.]

1368-RTAR (F95) “Develop Convective Heat Transfer Coefficients for Indoor and Outdoor Surfaces of Fenestration Systems” – (Primary Authors: Anil Parekh, William duPont, Hakim Elmahdy, John Wright and Charlie Curcija) – Although this RTAR has been approved by the RAC, there are a list of questions and issues identified in the RAC acceptance letter that need to be addressed in the development of the Work Statement. This RTAR is for the local heat transfer coefficients for both interior and exterior surfaces.

RTAR 1588 Joe Huang, TC 4.7 “Procedure to create hypothetical layer-by-layer....”, the RTAR has been returned to TC 4.7. TC 4.5 will await the revised version. No further update.

WS 1610 “Development of a Transposition Model for Clear-sky Irradiance”. TC 4.5 supported this project and accepted to participate in the PMS. WD volunteered to be the liaison for TC 4.5. No further update.

New Ideas

Participants discussed the need for short and long term research plan. We need RTAR’s and project ideas from interested researchers who can follow through the process. It was suggested that during the Montreal Meeting in June 2011, sub-committee should spend at least 30 min to discuss.

Conferences and Expositions (Willie duPont)

Las Vegas – Winter 2011

Seminar 53 – Windows for Net-Zero Homes” on Wednesday morning.

Montreal – Annual 2011

Seminar - Performance of Shading Devices in Commercial Buildings

Chair – Charlie Curcija, with four presentations – Kohler, Wright, Tzempelikos, Laouadi

Chicago Program – Winter 2012

Transactions Session: “Predicting the Performance of Complex Fenestration Systems,” Chair: Anil Parekh/NRCan

Deadlines: Program Proposals, Seminar & Forums are due on February 14, 2011;

Technical & Conference Papers, Seminar & Forums are due on March 14 2011;

All Presentations are due to ASHRAE on June 6, 2011.

Handbook (Mike Collins)

2013 Fundamentals

Revisions to the chapter to be approved by June 2012.

Plan to go through line by line by June 2011 meeting in Montreal.

Revisions to daylighting section, additions of windows for net-zero homes and buildings...

Assigned list for revisions.

Standards

JH reported.

Standard 90.1 is in public review. Reduced (water down) U-factor/SHGC requirements. update: building envelope tables were changed. Minimum VT/SHGC ratio for whole windows is 1.1. Can use glass only LSG=1.25 as alternative. Limit of 40% Window-to-Wall-Ratio (WWR) and automatic lighting control installed. Also new requirements for minimum skylight area for big box retailers.

Standard 90.2 and Standard 189 – better than Std 90.1

TC Projects

a. GPC-25

The list of test methods and descriptions is 75% complete. The frontend document needs to be revised to reflect the current list of procedures. WD and MC will coordinate before the next meeting. Plan to continue this meeting.

ALI coordinator

None.

WEBSITE

BC has trouble uploading new versions, he will check with ASHRAE staff.

OLD BUSINESS

None.

NEW BUSINESS

None.

ADJOURN:

The meeting was adjourned at 4:15pm