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ASHRAE TC 4.5: Fenestration; Handbook Subcommittee

Meeting: Chicago, IL – January 28, 2003; 10:00 a.m. - 12:00 p.m.

MINUTES:

Attendance:

No.	Name	Affiliation	Mem.	No.	Name	Affiliation	Mem.
1	Charlie Curcija	Umass	✓	11	David Tait	Tait Solar	✓
2	William duPont	LBNL	✓	12	Joe Deringer	Deringer Group	
3	Joe Klems	LBNL	✓	13	François Dubrous	NRC/Canada	
4	Hakim Elmahdy	NRC/Canada	✓	14	Howdy Goudey	LBNL	
5	Mike Collins	Univ. of Waterloo	✓	15	Christian Kohler	LBNL	✓
6	Bill Fleming	Jacwill Services		16	Marc LaFrance	U.S. DOE	
7	Brian Crooks	Cardinal Glass	✓	17	Chris Mathis	MC ²	
8.	John Hogan	City of Seattle	✓	18	Anil Parekh	NRC/Canada	✓
9	Carol Gardner	Energy Trust of Oregon		19	John Wright	Univ. of Waterloo	✓
10	Stephen Carpenter	Enermodal Engr.					

- I. Introductions, and William duPont agreed to be secretary
- II. William duPont moved, and Hakim Elmahdy seconded to approve the meeting minutes from the Handbook Subcommittee meeting in Honolulu, Hawaii last June with the following modifications:
 - 1) Change “Meeting: Cincinnati – June 26, 2001; 10:00 a.m. – 12:00 p.m.” to “Meeting: Honolulu, HI – June 25, 2002; 10:00 a.m. – 12:00 p.m.”
 - 2) Identify William duPont as being affiliated with LBNL in the attendance list.

The minutes were approved with revisions without descent.

- III. The chair read excerpts from a letter by Bill Flemming, the handbook representative on ASHRAE Staff, stating:
 - 1) TC 4.5 must approve next version of the handbook at their January 2004 committee meeting.
 - 2) The fenestration chapter is now Chapter 31.



- 3) ASHRAE has conducted a survey of the use and acceptance of the handbook, and has not received any negative comments specifically directed toward the fenestration chapter at this time.

IV. Charlie Curcija announced that he would distribute two WORD documents by e-mail or by posting them on a web site:

- 1) The revised chapter outline identifying the individuals assigned to each section
- 2) The final copy of the 2001 chapter that was submitted to ASHRAE for publication.

The chair explained that ASHRAE takes the final WORD file submitted by the TC, and reformats it for final publication using FrameMaker, or similar professional publishing software. Historically, ASHRAE has made editorial modifications to the originally submitted material, and therefore the chair asks that the subcommittee members compare their sections of the WORD file with the published text in the 2001 Handbook. Hopefully, each subcommittee member can directly modify the WORD file, and send it back to the chair. Therefore, any changes made to the next version can be accurately identified using the Revision Feature in WORD (i.e., redline/strikeout). These revised files are due before the next meeting.

V. The chair reviewed the section assignments identified on the Chapter Outline, which he handed out to the attendees.

- 1) The chair believes that the descriptions and equations describing the calculation of fenestration U-factor be modified to reflect that the new ISO 15099 methodology used. He asked that John Wright review the section on glazing cavities. In addition, the sections on edge-of-glass U-factors and frame U-factors need to be modified.
- 2) There was considerable discussion on the proposed modifications to Table 4 (U-factor), and Table 11 (SHGC) containing “generic” fenestration systems. Everyone agreed that the tables need to be modified based on the new sizes and calculation procedures adopted by NFRC and ISO 15099. There was considerable disagreement on whether this task could be performed before the upcoming deadline without a research project in place to fund that effort. A task group was formed to investigate methods of accomplishing this task without funding, which consists of the following people:
 - i) Bipin Shah
 - ii) Charlie Curcija (chair)
 - iii) Joe Deringer
 - iv) Chris Mathis
 - v) John Hogan
 - vi) Peter Lyons

One method suggested was to perform statistical analysis of representative products in the NFRC database, and average the U-factors and SHG Coefficients for publication in the handbook. Another method would be to recalculate the center of glass numbers, and use those results to modify the old area weighting spreadsheet. Another idea was to rerun just the frame and edge-of-glass calculations based on a percentage change. If the tables cannot be modified in time for the next edition of the handbook, then most expressed the need to submit an RTAR to initiate a research project so that these modifications can be included in the next version of the handbook.



- 3) The chair reminded the group that we need to come to an agreement with TC 4.4 as to where the U-factor table on doors will reside. Both groups have been publishing their own tables (Tables 6 in Chapters 25 and 30), and the U-factors for similar door types do not always agree. To complicate the issue, TC 4.5 currently is sponsoring a research project, WS-1236, to add additional door types to their table. If both Technical Committees cannot agree on a course of action, this decision will need to be made by officials higher up in ASHRAE. The chair agreed to send an e-mail to Bill Fleming, John Hogan, and the Chair of the TC 4.4 Handbook Subcommittee to initiate resolution of this issue.
- 4) Steve Carpenter requested that we add the thermal characteristics of spandrel panels to the chapter. Currently, Example 3 on page 30.5 references spandrel panels, but typical U-factors and SHGC are not listed. Steve Carpenter and John Hogan agreed to draft language or tables addressing spandrel panels for the next edition.
- 5) There was a suggestion to add diagrams to Examples 1-4.
- 6) Joe Klems reported that he did not anticipate that any of the material that he submitted for the previous edition on pages 30.20 through 30.42 will need revision, but he will review the material again for errors. After a quick review, he suggested that Table 13 may need to be revised.
- 7) David Tait and William duPont agreed to review and revise Tables 15 & 16 containing the SHGC of glass block and acrylic glazing.
- 8) Peter Lyons and John Hogan have agreed to modify occupant comfort and acceptance, which is currently located on page 30.62.
- 9) John Hogan also agreed to review the section on Codes and Standards currently on page 30.64.
- 10) A small task group was formed to review how to incorporate the results from the newly completed TC 4.5 research project, RP-947, into the next version of the handbook. RP-947 measured the SHGC of a number of interior shading systems such as Venetian Blinds at a range of incident angles. The following people agreed to serve on that task group:
 - i) William duPont (chair)
 - ii) David Tait
 - iii) Joe Klems
 - iv) Ross McCluney

V. Adjourned 12:07 p.m.

Respectively Submitted: William C. duPont/LBNL. Revised by Charlie Ćurĉija

