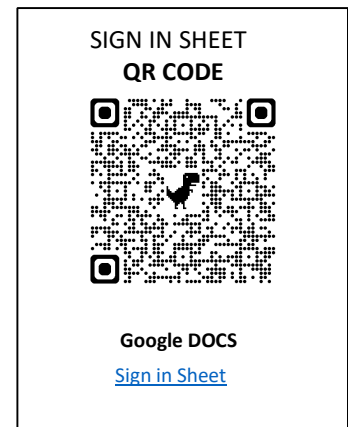


ASHRAE TC 2.7
Seismic, Wind and Flood Resistant Design
Main Committee Meeting Agenda
2024 ASHRAE Annual Conference
Hybrid Meeting
Tuesday 2/11/2024, 3:30 - 6:00 PM EDT
Hilton Orlando, Lake Sheen A (Lobby Level) & Virtual

Microsoft Teams meeting
[Click here to join the meeting](#)
Meeting ID: 215 397 104 076
Passcode: hG6xP73T



1. Opening

Harold Dubensky

i Review Scope

Technical Committee 2.7 is concerned with fundamental scientific and engineering design principles for the resilient design of HVACR equipment and building mechanical, electrical, and plumbing service systems for resistance to natural hazards including seismic, wind, and flooding.

ii ASHRAE Value Statement

Harold Dubensky

"In ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and shall avoid all real or perceived conflicts of interest. Our culture is one of inclusiveness, acknowledging the inherent value and dignity of each individual. We celebrate diverse and inclusive communities, understanding that doing so fuels better, more creative and more thoughtful ideas, solutions and strategies for the Society and the communities our Society serves. We respect and welcome all."

iii ASHRAE Code of Ethics Commitment

Harold Dubensky

"In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interests." See full ASHRAE Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.

2. Additions, modifications to the agenda

All

Practical Guide

3. Introductions of those present and virtual

All

4. Confirmation of Current Voting Members

Erika Spangler

7 of 15

VOTING MEMBERS FOR THIS MEETING (Need (?) or $\frac{1}{2}+1$ for a Quorum)

<u>TC 2.7 Voting Members</u>	<u>Non-Voting Subcommittee Chairs</u>
Harold Dubensky – Chairman – Yes	X
Paul Selman – Vice Chair, Webmaster – Yes	X
Erika Spangler – Secretary, Handbook – Yes	
Robert Simmons – Research – Yes	X
James Tauby – Standards -Yes	X
Wenchao Song – Yes	
Mohammed Basil Anbari – Yes International	X
Robert Haddock – Yes	
Matthew Hooti – Yes	X
Eli Howard – Yes	
Ganeson Kandasamy – Yes	
Prasad Naik – Yes	X
Camen Andrews – Yes	
Ashish Tripathi – Yes	
Donald Warick – Yes	X

5. Review and approval of minutes from June 25, 2024, Annual Meeting

Harold Dubensky

6. ASHRAE Liaisons

As they arrive.

Diana Fishner

7. Secretary's Report

Erika Spangler

Minutes from Indy will be posted to website.

8. TC Chair's Report

Harold Dubensky

i Announcements and Highlights from PC Chairs Breakfast Sunday 2/9.

Rundown of submitted seminars vs. accepted given by Chair.

9. Membership/Roster/Officers

Harold Dubensky

As of July 1, 2025: Voting members and/or subcommittee chairs.

Name	Role	Voting	
Harold Dubensky	Chair	Yes	
Paul Selman	Vice Chair	Yes	
Erika Spangler	Secretary	Yes	
Robert Simmons	Research Chair	Yes	
James Tauby	Standards Chair	Yes	
Harold Dubensky	Program Chair	Yes	
Paul Selman	Webmaster	Yes	
Erika Spangler	Handbook / Publications Chair	Yes	

a. Membership: 108 - Total Members

- a. 15 - Voting Members
- b. 83 - Corresponding Members
- c. 10 - Provisional Corresponding Member
- b. Voting approval is 50% plus 1.
- c. ASHRAE requires a TC Balance - See update FG MOP on basecamp.
- d. Term limits:
 - a. Chair = 2 years with a 1-year extension through the approval of the Section Head.
 - b. Vice Chair = 2 years.
- e. Chair and Vice Chair MUST BE ASHRAE members!
- f. The Chair should have served at least one one-year term as Vice Chair or Secretary.
- g. Corresponding Members can serve in all TC management positions except Chair.
- h. July 1, 2024: updates to voting members and/or subcommittee chairs. Email for the Roster Update Form will be sent on the first of February 2025.
- i. Provisional Corresponding Members are dropped or changed to a Corresponding Member after 2 years.
 - a. The TC chair will email you to see if you want to be a Corresponding Member.
- j. If Interest in becoming a voting member. Submit your request to the TC Chair by February 28, 2025.

10. Subcommittee reports (written reports to be given to Secretary).

i Standards Subcommittee

James Tauby

- i. ASHRAE 171 / SPC 171

ii Publications Subcommittee

- i. Applications Handbook Chapter 56

Erika Spangler

- ii. Other publications

- a Practical Guide 2nd Ed.

James TaubyHarold D.

Practical guide w/deadline of voting on changes in Phoenix

Revised info to be submitted to Harold D. who'll distribute to reviewing members.

Oversight committee members decided by Harold D. Chairman. Members decided Jim C. is Chairman.

- b Others – HPAC, ASHRAE Journal, Pocket Guide, etc.

SMACNA guide ref ASCE7-16. Next rev. should ref 7-22

Handbook chapter to be done by Las Vegas meeting

Flood Section – Jim C., Harold D.

Seismic Section – Robert S., Matthew H.

Wind Section – Robert S., Don W., John G.

- iii. Website report

Paul Selman

Site updated w/Agendas and last Minutes

Searchable from ASHRAE homepage.

iii Research Subcommittee

Robert Simmons

- i. Research Chair Report

Research Subcommittee Chair's breakfast meeting (2/10/2025) Highlights:

- Chris Gray is or Research Liaison
- RTAR, PTAR, WS now digital. Reference ASHRAE 2021Research Strategic Plan when developing research RTAR and WS.
- Budget at 3.9 million. They have plenty of room in current budget. OPEN for SUBMITALS. Current 37. Winter meeting – 0 RTAR, 5 Work Statements, 3 accepted, 8 projects out for bid
- See updates to the Research Manual. Add budgeting guide. Exploring co-funding, expanding bidders list and using social media for call for bids. Co-funded WS tend to go to the top of consideration.
- Since 1959. ASHRAE has awarded 1007 research projects. RP 2024 raised 2.7 mill. It was emphasized that a primary result was input into the ASHRAE Manuals
- Note to remember: must have TC vote for RTAR and WS. Milestones need to be added in WS.
- RAC can now approve up to 350K

- Discussed training webinar for Proposal Evaluation Subcommittee (PES) members to maintain the expertise and procedural requirements.
- Be aware of new forms for topic requests (PTAR – Publication Topic Acceptance Request) and work statements (WSP – Work Statement for Publications). These are now on-line
- **The next submission date for RTARs, PTARs and WSs is March 15, 2025**
- The standing RAC submission dates for new and revised RTARs and WSs are as follows each year:
- March 15 – RAC Spring meeting consideration in April
- May 15 – RAC Annual meeting consideration in June
- August 15 – RAC Fall meeting consideration in Sept. or Oct.
- December 15 – RAC Winter meeting consideration in January
- Copies of the RAC presentations from the breakfast meeting are included as attachments to this report. See preview of 2025-28 Strategic Plan

Update on ACI committee focused on anchors and foundations. Susan Izbai is the chair of this ACI committee.

- ii. Current research projects
 - None
- iii. Proposed research
 - a. A research project to investigate the basis of the seismic restraint exemption for components weighing less than or equal to 75 lb. that are in-line with a duct system was suggested by Karl Peterman. Mathew H., Prasad N. volunteered to help, Karl P. to provide rod sizes, etc. from SEAOC re: conduit.
 - b. Robert Simmons and Jim Tauby will prepare an RTAR for the 75 lb exemption investigation. TC5.2 and TC5.3 were suggested as possible partners in the research project. Develop RTAR as previously submitted by Prasad N. for ductwork. New RTAR on 75lb exemption for piping.
- iv. Outside research/testing
 - a. MCEER, PEER, EERI
 - b. Others
 - Insurance Institute for Business & Home Safety (IBHS) for additional testing from Murray Morrison, PhD.
- iv **Programs Subcommittee** **Harold Dubensky**
 - Submitted 4 programs for Orlando, 1 was accepted
 - i. Summary of Programs that were submitted for Orlando, FL.
 - a. Design of Non-Structural Systems for Extreme Weather Disasters (accepted) Chair: Harold Dubensky
 - b. ASCE 7-22, anchor requirements and housekeeping pads (previously submitted twice, not accepted. Submit for Vegas) Chair: Harold Dubensky
 - c. The Ethics of Delegated Design /Engineering - Seminar Chair: Harold Dubensky
 - d. The Ethics of Delegated Design /Engineering – Panel Chair: Harold Dubensky
 - ii. Current Issues/Hot Topics
 - iii. Possible Programs future
 - a. Seminar on testing
 - Non Structural components/ Equipment
 - Shake table testing – Erika S.
 - Wind/Product approval – Harold D.
 - ASHRAE 171 Testing – Matthew H.
 - b. Surviving Disasters
 - c. Wind program.
 - d. Possible session on Back to the Basics
 - e. Possible session on updates to ASCE 7

- f. Possible session on the results of shake table testing changing manufacturer behavior and design.
- iv. Next Meeting – Phoenix, AZ
 - 7 Tracks given by Harold D., deadline end of Feb 2025.
 - Resubmit “Ethics of Delegated Design /Engineering” and Delegated Design /Engineering

v **Long range planning**

Harold Dubensky

- i. Installation inspections
- ii. Testing and certification
- iii. System approach
- iv. Committee position on engineering disciplines appropriate for design of seismic/wind for nonstructural components such as HVAC

vi **Other Committees.**

- i. Codes and Specifications

Karl Peterman

ASCE7-22 current, voting on 7-28 coming soon.

NBC2020 to be revised soon, fewer exemptions expected.

- a. Hot Topics session

- b. NIBS (National Institute of Building Sciences)

Karl Peterman

- i. NIBS (National Institute of Building Sciences, <https://www.nibs.org>).

- ii. ASHRAE participant for their code development process. They are about to begin the process of updating the 2026 NEHRP (National Earthquake Hazards Reduction Program) provisions based on an amended ASCE/SEI 7-22.

- iii. Karl Peterman has agreed to be the TC 2.7 representative.

11. Liaisons

- i TAC Section Head.

Fisler

~~Lan Chi Nguyen-Weekes~~ **Diana**

- ii ASHRAE Handbook Liaison (if present)

- i. Wind

Jim Tauby

- ii. Seismic

Karl Peterman

- iii. Flooding

Open

- iv. Code reference in handbook chapter 56

Paul Selman

- iii NEMA- a new seismic guide on building code seismic qualification

Open

- iv ALI (ASHRAE Learning Institute)

Don Warick

Proposal form has been updated, course can be developed rapidly

- v ASHRAE TC 2.10 HVAC Security

Joel Walters

Cyber Security added to committee mission. The committee voted to continue without merging with others. Handbook hoping to have update by Vegas meeting.

- vi ASHRAE TC 2.6 Sound & Vibration

Paul Bauch

“Schaeffers Practical Guide” merge with “Application of Manufacturer’s Sound Data” to be combined, 80% done, will have chapter on vibr/iso. Prelim approval from RAK for technical writer. Planning to develop ALI course based on merged guide.

Research – resurrect method of test for isolators, kick-off in next year.

- vii ASCE

Robert Simmons, Prasad Naik

- viii ICC

Karl Peterman

Structural hearings are done for the current cycle.

- ix BSSC, FEMA, NEHRP

Karl Peterman

Karl commented on BSSC SDC determination

- x AHRI

Jaime Yeh

Standard 1270/1271 is no longer under sound technical committee. May not be supported much longer.

- xi VISCMA

Don Warick

Added Andre HVAC. New paper “Snow Load is Coming” approved. Newsletters going out on LinkedIn.

- xii SMACNA

~~Bob Reed~~ **Scott Barr**

New standard scheduled to come out soon.

xiii MSS (Manufacturers Standardization Society)

Prasad Naik

Working on changes based on 7-22.

xiv Others: ACI, INCE, NCAC, USGS, USGBC, MCEER, PEER, HCAI, etc.

Open

12. Operations Subcommittee

Harold Dubensky

i Honors and Awards

Pat Marks

Lily Wong awarded "Fellow". May nominate for distinguished service.

13. New Business / Old Business

Harold Dubensky

14. Next meeting date and location

Harold Dubensky

i Phoenix, AZ: 6/21/2025- 6/25/2025

15. Adjournment

Harold Dubensky

Addendum A – Program Subcommittee Chair – Harold Dubensky's Notes

2025 Winter Conference in Orlando, FL

Hybrid Live Technical Program

Five Day Event: Saturday February 8 – Wednesday February 12, 2025

Program Statistics for the 2025 Winter Conference:

The 2025 Winter Conference had a total of 113 sessions and events scheduled, comprised as follows:

Program	Proposals Submitted	Proposals Scheduled
Panel Sessions	9	3
Forum Sessions	18	3
Seminar Sessions:	158	63
Workshop Sessions	10	4
Debate Sessions	3	2
Total	198	75
Total with Paper Sessions		113

TC 2.7 submitted the following seminar for Orlando that was selected.

Design of Non-Structural Systems for Extreme Weather Disasters – (Chair: Harold Dubensky)

- Fukushima Daiichi Nuclear Disaster – Jim Carlson
- Design for Extreme Weather Lessons Learned from Recent Hurricane Seasons – Robert Simmons
- How Hurricanes Have Transformed Building Codes – Harold Dubensky

TC 2.7 submitted the following seminar for Orlando that was not selected.

ASCE 7-2022 revisions, anchor requirements, and housekeeping pads – (Chair: Harold Dubensky)

- Presenters: Jim Tauby, Matthew Hooti, Prasad Naik
- ASCE 7 2022 revisions and updates - Prasad Naik
- Housekeeping pad design – Jim Tauby
- Raise awareness with proper connection of equipment to the roof structure. - Matthew Hooti

Delegated Design /Engineering – Seminar (Chair: Harold Dubensky)

Robert Simmons, Karl Peterman, Mike Bilderbeck

- Co-sponsor with TC 1.7
- Delegated Design Requirements. - Robert Simmons
- Delegated Design for Seismic and Wind Restraints - Karl Peterman

- Building a Framework for Delegated Design - Mike Bilderbeck
Delegated Design /Engineering – Panel Discussion (Chair: Harold Dubensky)
Robert Simmons, Karl Peterman, Mike Bilderbeck
- Co-sponsor with TC 1.7
- Expanding Delegated Design Requirements. - Robert Simmons
- Specifying Delegated Design for Seismic and Wind Restraints - Karl Peterman
- Your Ethics Tool Box: Building a Framework for Delegated Design - Mike Bilderbeck

Tracks and Track Chairs 2025 Annual Conference in Phoenix, AZ6/21/25-6/25/25

1. Fundamentals and Applications - Atilla Biyikoglu, abiyik@gazi.edu.tr
2. HVAC&R Systems and Equipment - Ng Yong Kong, nyk@nyk.com.my
3. Research Summit - Haotian Liu, sjtulht@hotmail.com
4. Workforce Development - Anuj Gupta, anuj@design2occupancy.com
5. Industrial Ventilation, Refrigeration, Air-Conditioning and Energy Utilization - Vinod Venugopal, vinodpvgopal@gmail.com
6. Heat Pumps, Refrigerants and Decarbonization - Money Khanna, khannamoney@gmail.com
7. Onsite Energy Storage - Kevin Brown, kevin@kbsquared.net

6/21/2025- 6/25/2025 Phoenix, AZ 2025 Annual Conference Deadlines

- Wednesday, November 20, 2024: Conference Paper Abstracts, Paper Session Requests Due
- Friday, December 13, 2024: Conference Paper Abstract Accept/Reject Notifications
- Thursday, January 16, 2025: Website Opens for Extended Abstracts and Seminar, Workshop, Forum, Debate and Panel Proposals.
- Wednesday, February 26, 2025: Debate, Panel, Seminar, Forum, Workshop, and Debate Proposals Due
- Wednesday, March 5, 2025: Conference Papers and Extended Abstract Paper Due
- Wednesday, April 2, 2025: Conference Paper Accept/Reject Notifications
- Wednesday, April 2, 2025: Extended Abstract Accept/Reject Notifications
- Wednesday, April 9, 2024: Revised Conference Papers Due
- Friday, April 11, 2025: Debate, Panel, Seminar, Forum, Workshop Scheduling Notifications
- Wednesday, April 23, 2025: Conference Paper Final Accept/Reject Notifications

June 21-25, 2025 – 2025 Annual Conference in Phoenix, AZ

Friday January 3, 2025: Website Opens for Extended Abstracts and Seminar, Workshop, Forum, Debate and Panel Proposals. <https://ashraem.confex.com/ashraem/s25/cfp.cgi>

Submissions for 2025 Annual Conference in Phoenix, AZ

Resubmission from Orlando Winter 2025

Delegated Design /Engineering – Seminar (Chair: Harold Dubensky)

Robert Simmons, Karl Peterman, Mike Bilderbeck

- Co-sponsor with TC 1.7
- Delegated Design Requirements. - Robert Simmons
- Delegated Design for Seismic and Wind Restraints - Karl Peterman
- Building a Framework for Delegated Design - Mike Bilderbeck

Ethics of Delegated Design /Engineering – Panel Discussion (Chair: Harold Dubensky)

Robert Simmons, Karl Peterman, Mike Bilderbeck

- Co-sponsor with TC 1.7
- Expanding Delegated Design Requirements. - Robert Simmons
- Specifying Delegated Design for Seismic and Wind Restraints - Karl Peterman
- Your Ethics Toolbox: Building a Framework for Delegated Design - Mike Bilderbeck

Testing of Non-Structural Components/Equipment (Chair: Harold Dubensky)

- Shake table testing - Erika Spangler
- Wind _Hurricane Product Approval Testing - Harold
- ASHRAE 171 Testing - Matthew

Possible Future Programs

- Seismic Design of Las Vegas Entertainment Venue – 2026 Winter Meeting
 - Sphere, Data Centers, IA applications, etc.
- ASCE 7 2022 revisions and updates - Prasad Naik
- Bomb Blast - Jim T
- Back to Basics seminar
- Seismic for Electrical components and distribution systems.
- TC2.7-seismic for boilers and pumps
- Seismic restraint vs. Vibration Isolation (CARLSON) Roman Wowk, Jim Tauby-SP171, John G-Shake Table
- Integration seminar (Pat)
- Panel discussion/debate on some topic, e.g., should Ip be higher for components in rural schools?
- Seismic applications: Karl Peterman to chair
- Inspections/Permits, approval/enforcement- Matthew Hooti
 - Building Inspector vs Check of Installation
 - Building Official

Addendum B – Research Subcommittee Chair – Robert Simmons’ Notes

General

2/10/2025 Research Subcommittee Chair’s breakfast meeting Highlights:

- Chris Gray is or Research Liaison
- RTAR, PTAR, WS now digital. Reference ASHRAE 2021 Research Strategic Plan when developing research RTAR and WS.
- Budget at 3.9 million. They have plenty of room in current budget. OPEN for SUBMITALS. Current 37. Winter meeting – 0 RTAR, 5 Work Statements, 3 accepted, 8 projects out for bid
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Current TC 2.7 Research.

None

Ideas for New TC 2.7 Research

- 12 inch rule – Karl Peterman - ASCE7-22 and is planned for ASCE7-28 for the 12” rule exemptions, but it needs help. The changes put in for the 2016 version were based on testing done by Intel and promoted at SEAOC. The testing wasn’t reflecting actual installation conditions for HVAC components. We need to redo that testing and include single clevis hung rods and rods of larger sizes to substantiate future changes to the exemptions in ASCE7.
- An RTAR for investigating the basis of the seismic restraint exemption for components weighing less than or equal to 75 lb that are in-line with a duct system is being prepared by Robert Simmons. We discussed expanding it to address other suspended equipment weight exemptions, methods of support, etc. TC5.2 and TC5.3 were suggested as possible partners in the research project.
- We discussed research to determine the appropriate coefficients for horizontal and vertical design wind pressure for rooftop equipment and components. It is considered that the current coefficients of 1.9 horizontal and 1.5 vertical in ASCE/SEI 7-16 are overly conservative. In particular consideration of aerodynamic affects and reduction in the coefficients for components like pipe, crossovers, access platforms, etc. This study could be performed in a wind tunnel.
- Robert Simmons and Jim Tauby will prepare an RTAR for the 75 lb exemption investigation. TC5.2 and TC5.3 were suggested as possible partners in the research project.