



1791 Tullie Circle, NE • Atlanta, Georgia 30329-2305 ☎ 404-636-8400 • Fax 404-321-5478

Technical Committee 8.01 – Compressor Technology

TC8.01 Website: [Link](#)

AGENDA – 2025 ASHRAE Winter Meeting, Orlando FL

Main Committee [Hybrid]: Tuesday, February 11, 2025 3:30 – 5:30 PM ET

In Person Location: Hilton Orlando, Conway Lake (Lobby Level)

Virtual Info:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MTRjZiQwODYtZTU1Zi00ODdhLWFhMTQyY2JkNDFmOWQ0Y2Zm%40thread.v2/0?context=%7b%22Tid%22%3a%22abf9983b-ca77-4f20-9633-ca9c5a847041%22%2c%22Oid%22%3a%222923a671-cf0e-46c1-b9bb-6266530cf212%22%7d

Meeting ID: 358 345 206 216

Passcode: gS5ZpP

1) Call to Order – Alex Schmig(Chair)

- Introductions
- Minutes – **Bo Shen (Secretary)**
- Establishment of Quorum (13 VMs) - **Jim Douglas (Membership Chair) 10-0-0-0 CNV**
- Joint TC8.1&TC8.2 SubCom meeting attendance:

VOTING MEMBERS FOR THIS MEETING (Need 7 for a Quorum)

| | | | | | |
|---|------------------------|-----------|---|-----------------|-----------|
| X | Alex Schmig | 6/30/2026 | | Vincent Hwang | 6/30/2025 |
| X | Riley Barta | 6/30/2026 | X | Erik Anderson | 6/30/2026 |
| X | Bo Shen | 6/30/2026 | | Chris Seeton | 6/30/2026 |
| X | Jim Douglas | 6/30/2025 | X | Craig Bradshaw | 6/30/2026 |
| X | Scott MacBain | 6/30/2025 | X | Heinz Jurgensen | 6/30/2026 |
| X | Michael Perevozschikov | 6/30/2025 | X | Stefan Elbel | 6/30/2028 |
| | | | X | Eric Berg | 6/30/2028 |

1. CALL TO ORDER

ASHRAE VALUE STATEMENT

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.

Code of Ethics - <https://www.ashrae.org/about/governance/code-of-ethics>

Core Values - <https://www.ashrae.org/about/ashrae-s-core-values>

Diversity Statement - <https://www.ashrae.org/about/diversity-equity-and-inclusion-dei>

ASHRAE's Antitrust policy: ASHRAE agrees to comply with the Antitrust Policy as stated in ANSI Essential Requirements. Antitrust guidelines presentation: <https://youtu.be/ykisOzjHyZM>.

Recording (Audio, Video, Screenshots) of ASHRAE meetings, including online meetings, is strictly prohibited.

2) Review and Approval of the 2024 ASHRAE Annual Meeting Indianapolis Minutes

- Motion / Second: 0-0-0-0 CNV

**[Scott MacBain] made a motion to approve. And [Craig Bradshaw] 2nd.
9-0-4 approved the motion.**

3) Liaison Report (as they arrive)

- Section 8 Head (Kevin Mercer)
– **not shown**
- Research Liaison (Carl Huber) -
– **ASHRAE is looking for more research projects, encourages more work statements, RTARs. Encourages members to find training videos for PMS and learn to write RTARs.**
- Handbook (Kevin Muldoon)
– **not shown**

4) TC8.1 / TC8.2 Revised Scope:

- Title: TC 8.1 Compressor Technologies

We did go through a scope change last year, so our new title of this committee is TC 8.1, "compressor technologies"

- **Scope:** TC 8.1 is concerned with the design, performance, features, operating characteristics, and standards of all types of compressors for use with refrigerants.

TC 8.1 gained centrifugal compressor, from TC8.2, which changed its name from "Centrifugal Machines" to "Vapor Compression Cooling and Heat Pump Chillers".

5) Report on TAC/TC Chair's Breakfast Meeting – Alex Schmig

Update on material covered at TC chairs breakfast.

Sunday, February 9th 7:00 – 9:00AM Hilton Orlando, Orlando I-II (Lower Level)

[Alex Schmig]

- **In the TC chairs breakfast, there was a lot of talk about government affairs. And one of the big discussion points, was around current administration, and outlook's new opportunities. New proposals would focus more on resilient and strong built environment, rather than climate change and decarbonization.**
- **ASHRAE is shifting away from base camp to onehub workspaces for standards work.**

6) Membership - Jim Douglas (Chair)

Introduction of new members and/or changes

[Jim Douglas] suggested confirmed voting members to roll in and roll off. Suggest adding Connor Hayes from Daikin, Jethro Medina, Georgi Kazachki, Andrew Hjortland, Bruno Y. K. Decarvalho, etc, and migrated related members from T.C. 8.2.

7) Standards – Jim Douglas (Chair)

[Jim Douglas] ASHRAE standard 41.4 “Standard Method for Measuring the Proportion of Lubricant in Liquid Refrigerant”.

ASHRAE confirmed that the standard would be protected. And TC8.1 will go ahead and continue getting our public review draft out and everything during this this year. But we are not allowed to publish it permanently until 2026. Even though we were going to be close to being able to propose it last Sunday, but because of the delay, we'll wait and work on it.

So, the other ones are all up to date. And the SSPC 41 meeting on Sunday went ahead to revise some of them because there were some addendums that were made throughout the year for addendum A and addendum B based on.

In the TC 1.2 meeting along with the SSPC 41 meeting, we talked about letting other people know more about the 41 series standards because a lot of other TCs are going ahead and reviewing and redoing their standards. We want to make sure that they reference the 41 standards as the ways to perform measurements, and not create their own so that we can keep 41 as a standard way of doing things rather than having multiple methods.

In the TC 1.2 we're talking about proposing some form of a seminar, that would be a one-hour long session or 45-minute session to really address each one of these related standards, to bring people up to date on them and promote the use of them.

Standard 225 “Methods for Performance Testing Centrifugal Refrigerant Compressors and Condensing Units”.

This standard will be transferred from 8.2 to 8.1. Likelihood to merge standard 225 to standard 23 “Methods for Performance Testing Positive Displacement Refrigerant Compressors and Compressor Units”.

Vote to take over standard 225, 10-0-0

[Matt Cambio] will lead the effort to combine standard 23 and standard 225 and make an assessment and recommendation. Michael Perevozchikov, Scott MacBain, Haotian Liu and Jim Douglas volunteered to participate.

Standard 23-2022, *Methods for Performance Testing Positive Displacement Refrigerant Compressors and Compressor Units*. Standard 23-2022 will be due for periodic maintenance (*Revise, Reaffirm, or Withdraw*) at the 2025 ASHRAE Winter Conference. TC 8.01 will likely vote to approve Reaffirmation of this standard during the TC 8.01 meeting at the 2025 ASHRAE Winter Conference.

Standard 41.4-2015, *Standard Methods for Measurement of Proportion for Lubricant in Liquid Refrigerant*. SSPC 41 Subcommittee 41.4-2015R, chaired by Jim Douglas, has met twice since the 2024 ASHRAE Winter Conference. The goal of this subcommittee is to reach consensus on the 41.4-2015R 1st Publication Public Review draft during the 2025 ASHRAE Annual Conference.

Informative Note: Like all 41-series standards, Standard 41.4 has ANSI accreditation, which is expressed as ANSI/ASHRAE Standard 41.4. ANSI accreditation only lasts 10 years and Standard 41.4 was last published in 2015. To preserve Standard 41.4's ANSI accreditation, the ASHRAE Standards Committee will reaffirm Standard 41.4-2015 before the end of 2024. SSPC 41 will not have any involvement in the reaffirm Standard 41.4-2015.

Standard 41.9-2021, *Standard Methods for Refrigerant Mass Flow Measurement Using Calorimeters*. Standard 41.9-2021, chaired by Michael Perevozchikov, is being revised. The goal of this subcommittee is to reach consensus on the 41.9-2021R 1st Publication Public Review draft during the 2025 ASHRAE Annual Conference.

8) Program - Erik Anderson (Chair)

- For 2025 Winter Conference in Orlando, FL **[program submission deadline Feb 26, 2025]:**
 - Track 1: Fundamentals and Applications (Track Chair: Atilla Biyikoglu)
 - Track 2: HVAC&R Systems and Equipment (Track Chair: Ng Yong Kong)
 - Track 3: Research Summit (Track Chair: Haotian Liu)
 - Track 4: Workforce Development (Track Chair: Anuj Gupta)
 - Track 5: Industrial Ventilation, Refrigeration, Air-Conditioning and Energy Utilization (Track Chair: Vinod Venugopal)
 - Track 6: Heat Pumps, Refrigerants and Decarbonization (Track Chair: Money Khanna)
 - Track 7: Onsite Energy Storage (Track Chair: Kevin Brown)

Didn't get any programs accepted and [Craig Bradshaw] will resubmit the program. Nothing will happen for Phoenix. T.C. 8.2 proposed topic of applying centrifugal compressors to chillers and 8.1 may support that. Deadline is 02/26/25.

[Joe Sanchez] proposed a session: Service, maintenance, troubleshooting of compressors including scroll, centrifugal and pistons, at compressor level. Proposed for 2026 at Vegas. Tracks for Vegas meeting were announced. Our proposals can fit into fundamentals and applications. HVAC&R systems and refrigerants, future proofing the built equipment, etc.

9) Research – Matt Cambio (Chair)

- Report from Research Subcomm. Chair's Breakfast (Location/Time: Monday, February 10th, 7:00 – 9:00 am EST; Hilton Orlando, Florida 5&6 (Lower Level)
- **1716-RP Oil Concentration of Field Installed Liquid Chillers with Flooded Type Evaporators."** has started (Delta Heat, Germany) Lead TC8.2; 41.4-2015 on liquid ref. samples for oil measurements being updated; J. Douglas leading; concerns leading to liquid filling guidance; Phil to pass on to TRP-1716 PI for information **Notes: early stage of the project, PMS is interacting with the PI.**

The project is on stall.

- **1879-RP – "Foamability Properties of Low GWP Refrigerant and Oil Mixtures (ASHRAE RP-1879)**
[Craig Bradshaw] is transitioning from OSU to UIUC.
- **New RTAR ideas:**
No new RTAR submissions. There is a new \$12,000 Graduate student aid, 03/03 submission deadline.
New idea: "extrapolation of performance mapping of multi refrigerants compressor models". [Davide Ziviani] will follow up on this one.
New idea: "Compressor application for high temperature heat pumps"
New idea: [Joshua Hughes] TC 3.1 proposed to measure dielectric properties of low GWP refrigerants and would like to co-sponsor the topic about how refrigerant interact with

voltage, motors, etc., [Craig Bradshaw] made a motion, [Scott MacBain] second. Votes carries. 10-0-4.

New idea: low GWP refrigerants under sub-atmospheric operation, regarding refrigerant breakdown and possibility of electric arching in vacuum; Suggested to investigate how to detect and avoid these faults.

New idea: how to transition from vapor compression to NVR by [Bruno Decarvalho], [Andreas Hoess] will develop the RTAR with Bruno.

10) Handbook – Scott MacBain (Chair)

- TC8.1 Refrigeration Chapter 8-factory Dehydrating, Charging & Testing (revision due 2026)
- Vote/Review Chapter 8

[Scott MacBain] transferred to [Jethro Medina]. Reviewing the chapter 8, looking for volunteers and recruited Scott, Joe Sanchez, Florian Simon.

11) Website – Eric Berg (Chair)

the website's up to date and will put the agenda for this meeting there and the draft minutes from Indianapolis after getting them.

One issue identified by [Alex Schmig], that the bottom of webpage was not updated on time.

12) Old Business

13) New Business

14) Adjourn



Shaping Tomorrow's
Built Environment Today



TC Sign-in Sheet

Meeting Info: compressor technology 8.1

Date: 02/11/2025

| Name | Affiliation | E-mail | Member (Voting, Corresponding, PCM, or Guest?) | YEA Member? (Yes/No) | Int'l Member? (Yes/No) |
|---------------------|--------------------|--|--|----------------------------|------------------------------|
| Alex Schmig | Trane Technologies | alexander.schmig@trane.com | chair | Yes | No |
| Bo Shen | ORNL | shenb@ornl.gov | secretary | N | N |
| Joshua Hughes | Chemours | Joshua.hughes@chemours.com | corresponding | N | N |
| Medina, Jethro | Chemours | Jethro.Medina@Chemours.Com | Handbook chair | Y | N |
| Florian Simon | Trane Technologies | Florian.simon@tranetechnologies.com | Provisional corresponding member | Y | N |
| Andreas Josef Hoess | Purdue University | ahoess@purdue.edu | Provisional corresponding member | Y | N |
| Heinz Juergensen | Bitzer | heinz.juergensen@bitzer.de | Voting | N | Y |
| Joe Sanchez | Bitzer U.S | Jscanchez@bitzerUS.com | corresponding | N | N |
| Scott MacBain | Carrier | Scott.macbain@carrier.com | voting | N | N |
| Stefan Elbel | Tubulin Univ/CTS | stefanelbel@gmail.com | Voting | N | Y |

| Name | Affiliation | E-mail | Member (Voting, Corresponding, or Guest?) | YEA Member? (Yes/No) |
|------------------------------|--------------------|--|---|----------------------------|
| Erin Murdoch | Lubrizol | Erin.murdoch@lubrizol.com | guest | N |
| Andrew Hjortland | JCI | andrew.hjortland@jci.com | Corresponding member | N |
| Ryushda Jumali | Lennox | Ryush.jumali@lennox.com | Guest | N |
| Michael Siegersma | Trane Technologies | msiegersma@trane.com | guest | No |
| Laura Collazo Carballude | Trane Technologies | laura.collazocarballude@trane.com | Guest | Y |
| Parveen Dhillon | NREL | Parveen.dhillon@nrel.gov | Corresponding | No |
| Prathap Kumar Ramamoorthy | Trane Technologies | prathapkumar@tranetechnologies.com | Guest | No |
| Cheng Yi Lee | UMD | cylee@umd.edu | Provisional corresponding member | No |
| Haotian Liu | Purdue university | Liu1460@purdue.edu | Corresponding | Y |
| Davide Ziviani | Purdue university | dziviani@purdue.edu | corresponding | No |

| Name | Affiliation | E-mail | Member (Voting, Corresponding, or Guest?) | YEA Member? (Yes/No) |
|------------------------|------------------------|--|--|-------------------------------------|
| Barta, Riley | Purdue university | bartar@purdue.edu | Voting | Yes |
| Matt Cambio | Trane Technologies | mcambio@trane.com | Corresponding | No |
| Erik Anderson | Anderson Engineering | eanderson@aenpi.com | voting | No |
| Eckhard Groll | Purdue University | Groll@Purdue.edu | corresponding | No |
| Bobin John | OTS-RD | bjohn@ots-RD.com | Guest | No |
| Michael Perevozchikov | Copeland | Michael.Perevozchikov@copeland.com | Voting | No |
| Nick Zupp | Modine | Nicholas.j.zupp@modine.com | Guest | No |
| Syed Angkan Haider | University of Illinois | angkanhaider@gmail.com | Corresponding | Yes |
| Bruno Y. K. Decarvalho | Honeywell | Bruno.carvalho@honeywell.com | Guest | No |
| Craig Bradshaw | University of Illinois | crbrad@illinois.edu | Voting | No |