

**MEETING MINUTES**  
**TC 2.3 - Gaseous Contaminants/Removal Equipment**  
**Standards Subcommittee Meeting**

Monday, June 27<sup>th</sup> 2016, 2:15-3:15 p.m.  
Room Landmark 1, Conference Plaza Street Level, St. Louis Marriott, St. Louis, MO, USA

The meeting was called to order at 2:15 pm by Chair Paolo Tronville. Present were:

**Name**

- 1) Paolo Tronville
- 2) Daniel Abraham
- 3) Tandeep Chadha
- 4) Tyrone Cunningham
- 5) Zied Driss
- 6) Mick Flom
- 7) Peter Freeman
- 8) Dan Haas
- 9) Sanjeev Hingorani
- 10) Gemma Kerr
- 11) Paula Levasseur
- 12) Ed Light
- 13) Marilyn Listvan
- 14) Lu Liu
- 15) Dan Mason
- 16) Ashish Mathur
- 17) Peter McKinney
- 18) Matt Middlebrooks
- 19) Jeff Roseberry
- 20) Brad Stanley
- 21) Glen Toloczko
- 22) Mir Seliman Waez

**1) Update on standards within scope of ASHRAE TC 2.3**

- a) GPC 27P “Procedures for measurement of gases in indoor environments” – *Gemma Kerr*
  - The Guideline has recently been voted out for its third public review. Hopefully it will be published later this year.
  - Ed Light suggested that another Guideline is needed to cover sampling strategies that can enable air contaminant measurement data to answer questions about a building, its ventilation systems or occupant exposures. Gemma responded that we should postpone discussion until after Guideline 27 is published.
- b) ASHRAE Std. 145.1-2015 “Laboratory Test Method for Assessing the Performance of Gas-Phase Air Cleaning Systems: Loose Granular Media” – *Matt Middlebrooks*
  - This standard is under continuous maintenance. A new edition has just been published.
- c) ASHRAE Std. 145.2-2011 “Laboratory Test Method for Assessing the Performance of Gas-Phase Air Cleaning Systems: Air Cleaning Devices” – *Matt Middlebrooks*
  - This one is also under continuous maintenance. It will be republished this year with minor changes. An important issue under discussion is how to adapt the standard to included powered electronic air cleaners. The committee is developing a literature search research project to identify

all the types of EAC that need to be accommodated. They are also reviewing what areas of the standard will need to be rewritten.

## 2) ASHRAE SPCs/SSPCs/TCs/TGs/TRGs activities

- a) TC 2.4 “Particulate Air Contaminants and Particulate Contaminant Removal Equipment” – *Gemma Kerr*
  - SSPC 62.2 has requested a method for testing residential filters. TC 2.4 may address this by starting an MTG to determine the best way to proceed.
  - i) GPC35P “Method for Determining the Energy Consumption Caused by Air-Cleaning and Filtration Devices” – *Brad Stanley*
    - Brian Krafthefer and Brad were working on the gas phase filter side. There was good discussion at the meeting on how to calculate energy usage for particulate filters and on research such as the loading dust WS-1734. It would be useful to have someone else representing TC 2.3 on this committee. Matt Middlebrooks volunteered.
  - ii) SSPC 52.2 “Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size”- *Gemma Kerr*
    - Presentations at the 52.2 meeting and at Workshop 1 indicate that 52.2 is likely to be superseded by ISO 16890, although this will probably take ten years to happen.
- b) TC 2.9 “Ultraviolet Air and Surface Treatment” – *Ashish Mathur*
  - i) SSPC 185.1-2015 “Method of Testing UVC Devices for use in air handling units or air ducts to inactivate airborne microorganisms”
    - A Forum on both standards .1 and .2 took place today to assess usage and potential issues. The test bacterium will be changed.
  - ii) SSPC 185.2-2014 “Method of Testing Ultraviolet Lamps for Use in HVAC&R Units or Air Ducts on Irradiated Surfaces”
    - See above
- c) TC 9.11 “Clean Spaces” – *Matt Middlebrooks*
  - Not much going on.
- d) SSPC 62.1 “Ventilation and IAQ High Rise Buildings” – *Brad Stanley*
  - They are sponsoring interesting programs related to carbon dioxide, and on occupant perception, also on the IAQP method. These are a prerequisite to major changes to the standard. TRG4-IAQP is actively developing a list of contaminants of concern for testing filters using Standard 145.2.
- e) SSPC 62.2 “Ventilation and IAQ Low Rise Buildings” – *TBD*
  - There was no report

## 3) Information Exchange

- a) AFS – *KJ Choi*
  - The 2016 AFS Fall Conference, the Clean Air and Water Solutions Conference, will be held October 24-26 at the Double Tree San Diego in Mission Valley, CA.
  - the 2017 AFS Spring Conference on Advanced Filtration Technologies will be held April 10-13 at the Galt House in Louisville, KY.
- b) ASTM D22.05 “Air Quality” SC “Indoor Air” – *Peter Freeman*
  - Currently undergoing test method development, looking at protocols for using Gas Chromatography for analysis of indoor air samples.
- c) ASTM D28.04 “Activated carbon” SC “Gas Phase Evaluation Tests” – *Paula Levasseur*
  - i) D6646-03 (2014) “Standard Test Method for Determination of the Accelerated Hydrogen Sulfide Breakthrough Capacity of Granular and Pelletized Activated Carbon”
    - This will not change any time soon. This is a very high concentration test so perhaps not very relevant to this committee.
- d) ISO/TC 142 “Cleaning Equipment for Air and Other Gases” – *Matt Middlebrooks*
  - i) WG8 “Gas-phase air cleaning devices”

- (1) ISO/NP 10121-3 “Test method for assessing the performance of gas-phase air cleaning media and devices for general ventilation — Part 3: Classification system for treatment of make-up air”
  - There has been no activity recently. There will be no WG8 meeting at the Plenary in September.
- ii) WG11 “Portable room air cleaners for comfort applications”
  - (1) ISO/NP 17970-1 “Measurement of the performance of portable room air cleaners - Part 1: Performance against non-viable particulate matter”
    - there are some difficulties in developing this standard. The contributing national standards are very diverse.
  - (2) ISO/PWI 17970-2 “Measurement of the performance of portable room air cleaners - Part 2: Performance against gases”
    - There was no update on activity.
- iii) US Technical Advisory Group (TAG) to ISO/TC 142
  - Matt is stepping down as Chair and Rahul Bharadwaj will be coming in.
- e) ISO/TC 205 “Building environment design” – *TBD*
  - i) ISO 16814:2008 “Building environment design - Indoor air quality - Methods of expressing the quality of indoor air for human occupancy” (confirmed in 2014)
    - This standard lists optional approaches including Standard 62.1, Ole Fanger’s assessment method and also an Australian method.
- f) ISO/TC 209 “Cleanrooms and associated controlled environments” (see IEST) – *Matt Middlebrooks*
  - i) ISO 14644-8:2013 “Cleanrooms and associated controlled environments - Part 8: Classification of air cleanliness by chemical concentration (ACC)
    - There was no report
  - ii) ISO 14644-10:2013 “Cleanrooms and associated controlled environments - Part 10: Classification of surface cleanliness by chemical concentration”
    - There was no report
  - iii) ISO/DIS 14644-13:2016 “Cleanrooms and associated controlled environments - Part 13: Cleaning of surfaces to achieve defined levels of cleanliness in terms of particle and chemical classifications”
    - There was no report
  - iv) ISO/AWI 14644-16 (2014) “Cleanrooms and associated controlled environments - Part 16: Code of practice for improving energy efficiency in cleanrooms and clean air devices”
    - There was no report
- g) USGBC – *Charlene Bayer*
  - There was no report
- h) CEN/TC 156 “Ventilation for buildings” – *Paolo Tronville*
  - i) FprEN 16798-3:2016 “Energy performance of buildings - Part 3: Ventilation for non-residential buildings - Performance requirements for ventilation, air conditioning and room-conditioning systems” (revision of EN 13779)
    - This contains the normative part of the earlier standard
  - ii) prTR 16798-4:2016 “Ventilation for non-residential buildings — Performance requirements for ventilation, air conditioning and room-conditioning systems (Revision of EN 13779)
    - This is the informative part of the earlier standard.
- i) Other ISO TCs (and also CEN, ITRI, etc.)
  - There was no report

#### 4) New Business

- Ed Light is looking to set up an MTG (MTG on VOC Mixtures) to investigate VOC concentration limits with a view to developing limits for mixtures as opposed to individual chemicals. He will put

together a proposal and send it to the committee for review.

- Charlene Bayer as TC 2.3 Chair has asked whether we could reduce the time spent in meetings. It was suggested that Standards could meet using a Webinar between the Winter and Summer Meetings. Though many of the information items could be updated offline, a short meeting at the Winter and Summer Meetings is necessary to discuss ASHRAE Standards activity.

**5) Adjourn**

- The meeting was adjourned at 3: 20 pm