DRAFT Meeting Minutes
ASHRAE SSPC 52.2

MOT - General Ventilation Air-Cleaning Devices for Removal Eff. by Particle Size
Saturday, 23 June 2018, 8:00 am – 12:00 pm
Houston, TX

Votes: Font is Bold, Black
Task Groups: Font is Bold, Blue
Action Items: Font is Bold, Red

1) Call to Order – 8:03 a.m.
    a) Introductions made by everyone present – Name and Company
    b) Roll call & quorum confirmation

Kathleen Owen, Chair Y

Todd A McGrath, Vice Chair NonVoting

Leslye Sandberg, Secretary Y

Zied Driss Y

Dr. Dara Marina Feddersen Y

Chris Fischer N

Dr. Sanjeev K Kingorani Y

Dr. Carolyn ML Kerr Y

Kevin Morrow Y

Donna M Sullivan N

Dr Paolo M Tronville N but is in next committee room if needed

Dr Rahul Bharadwaj Y

Robert B Burkhead Y

Richard K Chesson Jr, Chair Research Subcommittee N

Dr Kyung-Ju Choi Y

David B Christopher Y

Dr. John Zhiqun Zhang Y

John Jay Reese, Organizational Vote NAFA N

12 of 17 present for quorum

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2) Review of this agenda
3) Review of "Draft" Chicago 2018 Minutes –No changes were presented

   Bob Burkhead moved to accept the minutes

   Leslye Sandberg seconded **10Y 0N 1A** – abstention is chair not voting
4) Review of letter Ballots Approved – There were no letter ballots to approve
5) Chair Remarks –Chair put out a request for comments from the group to allow discussion about ISO 16890. All the people who responded seem to be on one side of the issue – this was not intentional and is not reflective of any bias on the part of Chair or ASHRAE
6) Membership – this time around we had fewer requests for committee voting membership – we seem low on manufacturer applicants which is unusual. More general members than in the past. You MUST apply through ASHRAE. Note – only one member from a company is allowed on the committee at a time. Explained the "member" nonvoting status which is the pool from which Chair often draws to become voting members.
7) Website – Todd McGrath - website should be up and running maybe next week. Waiting for final from Mark Weber. Todd will continue as our "unofficial" webmaster and the next set of minutes and attachment may well be posted for committee to get.
8) Liaison Report – no liaison present – no report
   a) Standards – Walter Grondzik - not present
9) Open Action Items

   a) Public Review for Air Density Equation change – no comments were received. Kathleen has sent request to go ahead and publish so it should be fairly soon
   b) Examples in the standard – Todd McGrath is fixing Example Test Report where the numbers for calculation for airflow/face velocity didn't match. In the process, Todd changed from metric to FPM Can we do that? It isn't anything new but it needed to be fixed. Not subject to public review.
   c) SSPC 62.1 and 62.2 ePM issue – both of these committees have had addendum out for public review. 62.2 has withdrawn their comments based on comments that were submitted to them during the review period. (Comments are made by individuals not by committee) Mike Corbat (chair TC2.4) and Kathleen had a phone conversation with the chairs on what the committees are looking to reference in their standards.

      i) Actual need per Chair Conversation What they really want is something they can plug into their standard and have the people using their standards believe they can use it and know what's going on.
      They like PM name and Efficiency terminology. Mike Corbat is working on a change proposal to look at adding a PM efficiency calculation as part of 52.2. We don't have the change proposal yet so this limits the discussion. If 52.2 had this kind of terminology, 62.1 and 62.2 might be happy using 52.2

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Discussion:

Bob Burkhead read up on the 62.1 and 62.2 standards and they have Users Manuals 62.1 and 62.2 are NOT trying to do the same thing actually. MERV is mentioned only once in 62.2 and they aren't really using the efficiency numbers. 62.1 IS using the numbers and calculations

Charlie Seyffer attends 62.1 and suggests they would like to get E1 E2 E3 numbers. Users might be good if E1-E3 numbers to calculate PM. Jim Rosenthal willing to head up a committee to work on this type of calculation

Matt Middlebrooks - Currently this reads as OR in the standard – saying 52.2 OR 16890 Maybe we should be making it easier to chose

Zied Driss – users want 1 number. Users may not like MERV but it's just easier to use than E1E2E3…. This is reality for engineers

Charlie Seyffer – the reality is we need to make ASHRAE Standard more usable and attractive to users

Chair - There will be a meeting around noon between committee chairs today 52.2, 62.1 & 62.2 Try to nail down what they want.

Mike Corbat working on a restatement – might need assist – This came up at the last meeting Jim Rosenthal suggested but nobody wanted to work on then. Mike came to Kathleen and offered to write up a change proposal.

Kathleen asked for volunteers to help – Bob Burkhead, Scott Parrish, John Zhang, Jim Rosenthal volunteered to assist in coming up with a method.

10) Experimental Data – Monroe Britt

a) Variations of MERV 8 Initial PSE and resistance from the same box

b) Variation in dust loading on the same model filter for six different test dusts: changes in resistance and PSE efficiencies from clean to 1.5 inches wg final resistances.

Monroe had PPT presentation to evaluate differences between the test dusts used in 52.2 and ISO 16890- difficult to read at the graph level so only some of the information was easily discussed. The presentation will be sent to all with minutes draft.

He tested 24 filters to get 4 that he felt were good for the dust loading test. 24 x 24 x 2 He got a range from MERV 6-9 on the same box of filters. If you vary in data points by 5% you cover 2 MERVS so we have Too Many MERVS ☺

He loaded the four filters with different dust – 1 ASHAE test dust, 1 modified ASHRAE dust with Ultrafine ACFine, but still contained carbon black and cotton linters, the ACFine recommended by ISO, last was Atomite Dust

He loaded to several loading points starting with .04 as required by 52.2 and ISO standards and recorded results to show the differences that occur in dust loading using various test dusts as loading occurs up the pressure drop curve

When loading ACFine – the front end of the test typically lets a certain amount of dust through the filter until the filter "seals" itself…then it starts to load. 16890 doesn't have the release step.

Bottom line there are variations and small nuances within the standards that require analysis when deciding which test and dust to use for which filter you want testing.

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11)ISO 16890

a) Particle Size Distributions in 16890 – Jim Rosenthal PPT presentation (send to all with minutes)

Showing that based on particle distributions behind "rural" are based on old data and do not match current rural/urban distribution. So you can have a MERV8 filter and multiply out calculations with rural and urban and come up with very different efficiency numbers where the MERV 8 will not qualify for use in areas where it is currently the effective working filter of choice. Jim's point is – if there are holes in the data makeup of the ISO standard, we should be making recommendations to other committees that they not so quickly adopt without making sure it will actually work for the purpose it's intended for.

b) Is ISO 16890 IPA conditioning really representative of life time performance – John Zhang – 3M study in home of 3 filter types (3 each) looking at data curve in homes.

Conclusion: Testing using ISO with conditioning step – underpredicts filter performance residential

ASHRAE 52.2 w/o conditioning step – gives pretty good estimated average performance

c) ISO 16890 vs ASHRAE 52.2: adopt 16890, keep 52.2, adopt some of 52.2

Kathleen showed a reference graph showing comparatives between standards… this will be sent out or posted to all (AAF graph)

Kathleen Owen showed some graphs of data showing drop off in efficiency for E filters with conditioning step. Particle counters do not seem to make a difference for electret filters and only small differences to mechanical filters

Question raised by Jim Rosenthal – is there any data that makes it clear that the IPA Vapor test does not change or degrade the fibers of the filters? Everyone assumes it does not – has anyone actually done the before and after comparative.

Crystal Jolliffe from CI said she has been doing research about actual changes to the fibers in filters during the conditioning step. The fibers swell and pressure drop changes. (She did say she could present something at next meeting)

The gap between the standards exists. But the practical usage of filters in the united states makes it difficult for us to give up the 52.2 standard. Other areas of the world don't much care because it isn't germane to them.

Research Update - Work Statement approved for round robin testing on 52.2 Official ASHRAE research funding. The scope of this research is to verify the changes made to the standard over the last few years – i.e. temp/humidity ranges

Eric Brodsky liaison from AHRI available for comment. AHRI wrote a letter to Chair of 52.2 officially recommending NOT to withdraw Standard 52.2 include letter with attachments

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12) New Business – 30 min

a) Improving Charge Neutralization – Bruce to present on topic in Atlanta

b) New/old topic – Using PM1, PM2.5 & PM10 measurements in a test method – Vijay

Vijay proposing adding particle counting inlets specific to particle sizes for 2.5 and 5 and10 which would give direct measure of the particle size distribution. If you do the inlets, it's easy to set the distribution. (gravimetric calibration) This is a proposed method to fine tune the accuracy – there isn't current testing of the theory. But the particle counter inlets are statutory so the results should be valid and traceable to the statutory inlets. Vijay will resend the written statement he drafted previously with assist from Barney Burroughs – possible addendum as a letter ballot. Send out to the committee for comments.

13) Other

Mike Corbat planning to bring up to TC2.4 about starting up a TSP to write a residential standard which may come out as an entirely new number – not 52.

14) SSPC 52.2 Research – Are there any RTAR ideas –

Get ASHRAE to fund an official comparison between 52.2 and ISO16890?

15) Adjourn Moved by Gemma Kerr, Second by Zied Driss

Attachments:

1) Comments on 52.2 and 16890-1 thru 4 Test methods by Monroe A. Britt
2) Ideas for 52.3 by R. Vijayakumar
3) Ventilation Air Filter Performance At PM by R. Vijayakumar
4) AHRI Comments "Recommending to not Withdraw ASHRAE Standard 52.2"
5) ISO16890 vs 522 ratings page
6) ISO16890-IPA Conditioning vs Actual by John Zhang
7) Problems with the ISO 16890 "rural" particle distribution used to calculate ePM10 by Jim Rosenthal

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Attendees:

Name	Company	Name	Company
Kathleen Owen, Chair	Owen Consulting	Matt Middlebrooks	Filtration Group
Todd McGrath, ViceChair	Glasfloss	Scott Parris	Freudenberg
Leslye Sandberg, Secretary	Permatron	Jenny Berens	Freudenberg
John Zhang	3M	Monroe Britt	Green Leaf
Mick Flom	3M	Dara Feddersen	H & V
Rahul Bharadwaj	AAF Flanders	Digvijay Nama	HDK Industries
Joel Davis	AAF Flanders	David Christopher	HDK Industries
Jonathan Rajala	AAF Flanders	Ray Rite	IR-Trane
Vijay Kumar	Aerfil	John Simenson	Johns Manville
Chris Stone	AHRI	Juliana Khouri	KC
Marisa Jimenez de Segovia	Air-Care de Mexico	Kevin Morrow	KC
Thad Ptak	AO Smith	Sanjeev Hingorami	Lennox Industries
Bob McAfee	Berry Global	Kevin Kwong	LMS Technologies
Bob Burkhead	Blue Heaven Technologies	Kia Kiantag	LMS Technologies
Bobby Singer	Blue Heaven Technologies	Shannon Schoppman	Lydall
HE Barney Burroughs	BWCI	Dan Haas	Parker Hannifin HVAC
Zied Driss	Camfil	Brandon Boor	Purdue University
Charlie Seyffer	Camfil	Eric Brodsky	Consultant
Daniel Vangilder	Camfil APC	Gary G. Riggle	Star Manufacturing
Alex Wells	Camfil APC	Mark Tucker	SWM Intl
Gemma Kerr	Canada	Stevan Brown	Tex Air Filter
Kyung-Ju Choi	Clean & Science	Jim Rosenthal	Tex Air Filters
Tim Ahn	Clean & Science	Bruce Duffy	Tri Dim Filter Corporation
Vivek Gaur	Columbus Industries	Tim Johnson	TSI
Chrystal Jolliffe	Columbus Industries	Oludami Adesanya	United Technologies
Steven Rosen	Enverio	Christine Sun	FTI

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