

TC 5.03 Handbook Sub-Committee Meeting Minutes 1/22 & 1/23/16 (Orlando)

Fundamentals 2017 – Chapter 20 ‘Space Air Diffusion’

1/22/16

- Discussed electronic tools:
 - Calculator for formulas in fundamentals chapter (KG provided)
 - Note: What type of files are we allowed to embed?
 - Bookmarks to find information faster?
- Updated wording to Indoor Air Quality and Sustainability to update reference to LEED
- Terminology:
 - Clarified definition of entrainment & entrainment ratio
 - Note: Need to add graphic we discussed after terms/definitions to supplement the definitions of primary air, induction air, supply air, and total air
 - Note: Make sure all references have been updated based on definitions of ‘primary air’ and new definition of ‘supply air’ (discharge air was not defined and now it needs to be replaced with supply air)
- Added back a stripped down version of the ‘Outlet Types and Characteristics’ section that was removed in 2013 partially due to reference to these outlets types in Standard 170.
 - Split Group A into A1 and A2 (added outlets discharging horizontally in free jet)
 - Added wording to split Group D and Group E into high velocity and low velocity (functionally adds horizontal displacement (D) and vertical displacement/laminar flow diffusers (E))
- Updated graphics on Airflow Patterns of Diffusers (split into separate graphics and referenced the group in which they represent). We require more updates so we have at least (1) graphic per group type.
 - Note –Add horizontal sidewall displacement, horizontal free jet, vertical downward free jet, vertical downward attached jet, possibly vertical downward laminar flow, etc...
 - Note: Try to embed metric and imperial on same graphic
 - Note: Need to remove ‘primary air’ from all graphics for consistency
- Re-reviewed section on Principles of Jet Behavior (originally reviewed in Atlanta)
 - Updated references to the centerline velocity constant to acknowledge the values in Table 1 are ‘generic’ and added note in Table 1 to reference manufacturer’s data for actual K_c
 - Added note on centerline velocity in zone 4 (no reference in previous versions) which essentially says that it is difficult to predict
 - Note: Need to update Table 1 to properly reference updated Figures

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- Note – Need to update figure numbering
- Added vertical projection, free jet and air curtain to Table 1
- Figure 3
 - Split into 2 figures: 1 for axial/radial and 1 for linear for clarification
 - Tried to include IP/SI in same figure (will see if publications accepts)
- Fixed error in Example 1 (KG caught it when testing new calculator)
- Non-isothermal horizontal free jet
 - Slight wording change for clarification
 - Updated error referencing induction of attached jet (needed to be entrainment since it occurs in the room)
- Added note to clarify behavior of air curtain units
- Reviewed 'Air Movement in the Occupied Zone'
 - Removed paragraph on mixing systems for clarity
- Ken L contributed paragraph on Thermal Plumes sub-section to include partially stratified systems
 - Reviewed and inserted Ken's write-up
 - Note: Need to increase height of SH in Figure 6 and add Figure 7 for partially mixed systems (KH volunteered for those graphics)
- Voted affirmative 14-0-0 to approve chapter revisions and send to main committee with the understanding that graphics will be updated or added based on detailed conversation of those graphics. Jerry S, Ken L, Jose P, and Curtis P volunteered to contribute graphics. Curtis to send list to that group in order to complete. Once graphics are updated a letter ballot will be necessary in order to get chapter submitted by 4/1/16.