ICC 815 Sizing Water Distribution, Drainage and Venting Standard Consensus Committee (IS-SWDDV)

Meeting #11 - Minutes

January 25, 2024

Chair: Gary Klein
Vice Chair: Philip Parisi
Secretariat- Ramiro Mata

The eleventh meeting of the ICC 815 Sizing Water Distribution, Drainage and Venting Standard Consensus Committee (IS-SWDDV) was held on January 25, 2024, in virtual format. The meeting was conducted in accordance with ICC's Consensus Procedures. https://www.iccsafe.org/wp-content/uploads/ICC-Consensus-Procedures-ANSI-approved-8_2_21-BOD-apprvd-8_27_21.pdf

Note: The tenth meeting, scheduled for December 18, 2023, was cancelled due to the proximity to the holidays.

1. Welcome – Chairman, Gary Klein, convened the meeting and welcomed attendees at 2:03pm EST along with Staff Secretariat, Ramiro Mata. Mata reminded attendees about the ICC Code of Ethics and the Anti-Trust Policy, both of which can be found on the ICC 815 (IS-SWDDV) webpage. Mata also announced that the meeting will be recorded for internal reference only and that recording by anyone other than ICC staff is prohibited.
2. Roll Call – Klein called the meeting to order with a roll call of ICC 815 (IS-SWDDV) committee members – Symbol ☑ indicates present, ☐ indicates absent.

Committee Members

Regulator		User		Manufacturer		Builder	
☐	Joseph Alexander	☑	Esber Andiroglu PhD, PE	☐	Marcus Elmer	☑	Dan Buuck
☑	Richard Grace	☑	Gary Klein	☑	Dave Parney	☐	Joshua Trujillo
☐	Terry Haughn	☑	John Lansing	☐	Lance MacNevin PE	**Consumer**	
☐	Ross Wakefield	☑	Philip Parisi Jr. PE	☑	Kyle Thompson PE	☐	Tim Keane
		☐	Tom Wise			**SDO/Test Lab**	
						☐	Kathryn (Katie) Foster

ICC Staff –
Interested Parties and Guests – Dan Cole, Drew Rich, Natascha Milesi-Ferretti, Michael Cudahy, Jim Richardson, Adam Smith, Jeremy Williams, Lavanya Muttayan, David Nickelson

3. Quorum and Membership Review
    a. With 8 committee members in attendance, Mata announced the threshold of 9 for quorum was not met.
    b. Dr. Juneseok Lee stepped down from the committee.

   c. Jim Richardson from the City of Columbus, Ohio and Richie Rosales from Palm Beach County, FL have expressed interest in joining the committee.
4. Agenda Review and Approval – Tabled to next meeting due to lack of quorum.
5. Approval of Meeting #9 Minutes from November 27, 2023 – Tabled to next meeting due to lack of quorum.
6. Research Update – Rich provided the following update:
   a. Flow meters were installed on the Stanford building. Explained challenges faced in installing pressure sensor taps due to building age and potential liabilities associated with system shutdowns. Data will be collected from the second floor and install new piping in the unused first floor restroom to install additional equipment.
   b. Parisi emphasized the importance of capturing natural probability of use and simultaneity, highlighting potential limitations in simulating usage patterns.
   c. Klein suggested exploring low-risk methods such as using hose bibs or clamp-on technologies to gather valuable pressure loss insights without major disruptions.
   d. There was deliberation about harvesting piping for evaluation on the Stanford building that is slated for demolition in May. The potential benefits and drawbacks of reusing existing piping were discussed, including considerations such as biofilm development and corrosion simulation.
   e. Shared plans for a presentation at CIB W062 conference in Wales.
   f. Began reviewing data from the California Public Utilities Commission study on alternative pipe Sizing methodology.
   g. University of Miami reported that Flume is not willing to share water use data. Lansing volunteered to contact Flume.
7. Working Group Updates
   a. Measurement – Lansing (Chair).
      i. Lansing provided an update discussing the need for finalizing sensor acquisition and data collection procedures. The group aims to implement lessons learned from the University of Miami's measurement setup in third-party buildings. Additionally, a standard request letter to building owners is being finalized to outline the data collection process and seek approval.
      ii. Suggestion was made to create a separate sheet for purchased sensors to distinguish them from the overall list of possible sensors. John Lansing and others agreed to duplicate the existing sheet and sort out which sensors are already available.
      iii. The working group has set a deadline for finalizing the equipment spreadsheet within two weeks, while also discussing budget development.
      iv. Mata raised points about developing protocols during the first building's testing that could be applied to future buildings within the measurement working group meeting context.
      v. Lansing emphasized the importance of documenting and creating diagrams with measurements for each round of building testing. He highlighted the usefulness of generalized details for studies or papers submitted to conferences.
      vi. Discussed different measurement types, such as current versus voltage, and their implications in data acquisition systems.

vii. Rich discussed exploring advanced metering installations (AMI) in some municipalities as potential sources for high-resolution data acquisition tools already in place within buildings. Klein added that utilities may have concerns about sharing this data but acknowledged its value for widespread acquisition.

b. Supply System –Wise (Chair) – No update
c. Drain, Waste and Vent – Lansing (Chair)
    i. Lansing outlined plans for this working group, including discussions on key design and performance criteria, as well as reworking approaches for drain waste and vent. Dave requested inclusion in this working group.
    ii. Nickelson was added to the working group.
d. Rosetta Stone – MacNevin (Chair) – Will work with Mata to set up a meeting.

8. Working Groups - Klein highlighted the need for working group chairs to submit their work plans for review at the next meeting.
9. Standard Outline
    a. Klein emphasized the need for a clear outline with detailed information, while Mata suggested that working groups should fill in specific sections of the framework. Klein agreed, stating that workgroups are responsible for filling in the blanks under their respective sections. He also stressed the importance of creating a solid draft by year-end and tracking progress.
10. Cast Iron Presentation (Parney) –
    a. Cast iron pipes and fittings are primarily used for sanitary drain waste and VT piping applications. He delved into the history of cast iron, tracing its origins back to Europe 500 years ago. The first uses of cast iron for drainage or pressurized systems were in Germany in 1455 and 1562, respectively. In the United States, the first manufacturing of the product occurred in 1801 in Philadelphia.
    b. Two types of systems used today: hub-and-spigot (bell-and-spigot) and hubless (no-hub). Specific standard specifications for each type such as B301 and ASTM A8888 for hubless pipe soil pipe fittings; CIS B310; ASTM C1277; C1540; ASTM A74 for hub-and-spigot cast iron pipe soil pipe fittings.
    c. Dimensions & Fitting Patterns - Cast-iron pipes range from inch-and-a-half to fifteen inches with different sizing patterns within these measurements. For instance, CIS B301 has a hundred fitting patterns while ADM A8888 has similar sizing but limited fitting patterns compared to CIS B301.
    d. Clarification on Pipe Dimensions - Outer diameter remains consistent across sizes from inch-and-a-half through fifteen inches whereas inner diameter diminishes based upon wall thickness.
    e. Manufacturing Requirements & Quality Control - Manufacturing requirements ensure proper installation by maintaining heavy dimensional requirements along with chemical mechanical makeup properties ensuring lead-free products with environmentally friendly coatings applied using radiation screening as well as quality control record retention.
    f. Standards Discrepancies - Discrepancies in standards for cast iron pipes, highlight that the outside diameter of a two-inch pipe is actually 2.3 inches and emphasize the

importance of considering barrel and inside diameters when evaluating flow rates. He also explained that ASMA A74 was written in 1917 before standardization of IDS, ODS, and wall thicknesses.

g. International Standards Comparison - Compared international standards for hubless pipes from British, Canadian, European, and German sources. Differences in terminology such as "hub" and "spigot," as well as variations in measurements like laying lengths and angles of radius between US standards and those from other countries.
h. Applications of Cast Iron Pipe - Used in sanitary drain waste vent systems, storm drainage both above ground or below ground with temperature limitations up to 212 degrees Fahrenheit. Products are predominantly used in commercial industrial high-rise mixed-use buildings rather than single-family dwellings or townhouses.
i. Joining Methods –
    i. Lead oakum joining method (predominantly used only in certain areas),
    ii. Rubber push gasket joining method introduced around the 1960s which allows about a five-degree deflection during installation underground.
    iii. Hubless joints were reintroduced with no-hub couplings after being first introduced back to Germany around the 1400s.
j. Resources Available - CISP 301 standard dimensions are available on the CISPI website along with a handbook detailing cast iron flow velocities researched several years ago. Additionally, ongoing research is being conducted to update this information by 2025 considering low fixture flows currently used.

11. New Action Items
    a. Send a copy of Cast Iron Presentation to Mata – Parney
    b. Submit working group work plans
        i. Measurement – Lansing
        ii. Supply – Wise
        iii. DWV – Lansing
        iv. Rosetta Stone - MacNevin
12. Next Meeting – February 22, 2024, at 1pm-5pm Central (2pm-6pm Eastern)
13. Meeting adjourned at 5:24pm EST.