



International Code Council

ICC IS-3DACT Committee Agenda – Meeting #5

February 9, 2024 – 10:00 AM PST

1. Welcome and opening remarks

Staff Secretariat, Melissa Sanchez called the meeting to order at 10:02 am PST and welcomed all committee members, invited parties, and ICC staff. Ms. Sanchez shared that Ms. Aubrey Smading is no longer a member of the committee.

Ms. Sanchez then went on to note the committee must adhere to the ICC Code of Ethics, which states that those participating in ICC activity must adhere to the highest ethical conduct, with the purpose of the protection of the health, safety and welfare of the public by creating safe buildings and communities. In addition, Section 5.1. 10 in Council Policy #7 is in effect and any committee member with a conflict of interest must withdraw from participating in discussion or vote on the matter in which they have an undisclosed interest. Lastly, Council Policy #50 outlines ICC Antitrust guidelines, which indicates the committee meetings are not intended for discussion of pricing and marketing topics.

2. Quorum and Attendance

Ms. Sanchez called the roll of the IS-3DACT with the following members registering attendance. Ms. Sanchez noted there was enough for a quorum.

NAME	IS-3DACT COMMITTEE MEETING				
	#1 10/20/23	#2 11/17/23	#3 12/15/23	#4 1/12/24	#5 2/9/24
Jared Brewe [A]	x	X	X	X	-
Gabriel Carrera [D]	x	X	X	-	X
Bora Gencturk [C]	x	X	X	X	X
Rory Hamaoka [H]	x	X		X	X
Werner Hellmer[H]	x	X	X	-	X
Maryam Hojati [D]	x	X		-	X
Berok Khoshnevis [D]	x	X	X	X	-
Jeff Martin [A]	x		X	X	-
Doug Mayer [H]	x		X	X	X
Paul Messplay [H]	x	X	X	-	X
Aubrey Smading [B]	x	X	X	X	
Adil Tamimi [D]				X	-
Bing Tian [A]	x	X	X	X	X
TOTAL	12/13	10/13	10/13	9/13	8/12

Interested parties in attendance included Stephan Mansour (ASTM), Josh Gebelein (Parsons), Daniel Galvez Moreno (ICON), Abdul Peerzada (Quikcrete), Mahmut Ekenel (ACI), Rex Donahey (ACI), Muhammad Shakeel Akhtar (Parsons)

3. Approval of Agenda

Chair Mr. Bora Gencturk asked if there were any objections to the agenda. There were no objections. The agenda was unanimously approved.

4. Approval of Previous Meeting Minutes

Mr. Gencturk asked if there were any objections to the previous meeting minutes. There were no objections. The previous meeting minutes were unanimously approved.

5. Update on Work Groups

a. Materials Work Group (Bing Tian)

Mr. Tian presented the notes from the working group meeting on Chapter 3– Printing Material Specifications, Testing Methods, and Performance Requirements. Mr. Tian noted that Sections 301 and 302 were to be led by Mr. Werner Hellmer, Sections 303 by Mr. Daniel Galvez Moreno, and Sections 304, 305, and 306 by Mr. Tian with help from his colleague at Quikrete Mr. Abdul Peerzada.

Mr. Tian opened the discussion with Section 303. He explained that the working group agreed that for laboratory testing, whether for Field Batch mixing, 2K systems, or Pre-blended products, the material is to be sent to a testing lab with instructions and testing should follow the appropriate standard. Mr. Tian asked if Mr. Moreno had any other comments. Mr. Moreno did not.

Mr. Hellmer brought up a question regarding Section 302.6 – Other ingredients. He questioned whether to add water under Section 303 or create a new category, and commented that ASTM has a standard on the suitability of water for concrete. Mr. Tian commented that most labs will use tap water and that this topic could be placed in the chapter for Quality Control. Mr. Hellmer countered a separate category would be beneficial since other countries might not have the same water quality as the USA. Mr. Tian agreed. Section 302.6 – Water was proposed to be added to the ToC.

Mr. Tian moved the discussion to section 304. Addressing Section 304.1, Mr. Tian said the working group suggested using only 3x6 cylinder for compression testing as it is important to have the same sample size between lab and field testing and for performance requirements. Mr. Gencturk noted that there isn't much difference between cube and cylinder results. Mr. Moreno suggested that it be put in the QC chapter that the testing geometry be the same in the lab and field. Mr. Rex Donahey asked if correlation with cylinder test data is necessary. Mr. Moreno commented that from ICON's experience that they have found pretty good correlation between cylinders and the printed material.

For Section 304.4 on Interlayer Bond Strength, Mr. Tian asked how this test could be performed in a laboratory when most labs do not have a 3D printer and suggested perhaps it should be a field test only. Mr. Gencturk recommended that it should be part of the laboratory testing and field requirements. He suggested manufacturers could print a test wall in their own facilities and send sections to a laboratory. Mr. Tian asked how this differs from field testing. Mr. Doug Mayer brought up a similarity with masonry core strength testing from the field. Mr. Moreno brought up that it is costly to print a sacrificial wall. Mr. Gabriel Carrera commented that one way to not require interlayer bond testing is through design. Mr. Donahey commented that Diamond Age and others produce post-tensioned concrete walls or masonry walls and thus bonding is not an issue. Mr. Tian and Mr. Gencturk agreed with this. Mr. Gencturk suggested that perhaps bond testing be kept optional.

For Sections 305 Mr. Hellmer commented that steel and wire are the reinforcement considered. FRP bars are not being considered at the moment. For Section 306 the working group recommended to stick with ASTM standard methods.

Mr. Gencturk remarked any further comments can be addressed in detail in the working group and moved the meeting to the next agenda item.

b. Structural Work Group (Jared Brewe)

Mr. Jared Brewe was not available to present and thus Mr. Mayer presented the discussions from the Structural working group. Mr. Mayer presented the shared Word document the group decided to use to collaborate. He then brought up the topic of terminology and what the 3D printed wall system will be called. Ms Hojati suggested remaining consistent with ACI terminology. Mr. Gencturk pointed to the title of this committee, 3DACT, would be the name of the system, unless it is possible to change the name of the committee. Mr. Mayer also questioned whether the term “bead” is the correct term. Mr. Tian said that very few people use the term bead. Mr. Moreno said at ICON the term bead is used all the time. Mr. Gencturk offers “extrusion layer” as a more generic term and concluded that this discussion could be addressed more in the future.

Mr. Gencturk asked if the structural working group established deadlines for contributions for the sections. Mr. Mayer said they established March 15th as a deadline.

6. Additional discussion of Initial Draft

Ms. Sanchez brought up the timeline schedule. Mr. Gencturk suggested that each working group finish their contributions by March 15, 2024 and that they should send their compiled contributions to Ms. Sanchez by April 1.

Mr. Gencturk asked if there was a motion of approval for the addition of Section 302.6 – Water to the Table of Contents. Mr. Hellmer motioned, and Mr. Tian seconded the motion. The motion was unanimously approved.

7. Next Meeting

The next meeting is set for March 15, 2024, at 10am PST.

8. New Business

There were no additional items.

9. Action Items & Summary

The action items from the meeting were summarized as follows:

<i>Working groups meet to write sections and compile drafts by March 15.</i>	<i>Mr. Tian and Mr. Brewe</i>
<i>Find out about adding/replacing voting members</i>	<i>Ms. Sanchez</i>
<i>Find out about committee title/name change</i>	<i>Ms. Sanchez</i>
<i>Update the Table of Contents on the shared Drive</i>	<i>Mr. Tian</i>

*With no other questions or comments before the committee Mr. Gencturk moved to adjourn the
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meeting. Mr. Hellmer motions for adjourning and Mr. Tian seconds the motion. The meeting is adjourned at 11:10 am PST.

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