



International Code Council

ICC IS-3DACT Committee Agenda – Meeting #4

January 12, 2024 – 10:00 AM PST

1. Welcome and opening remarks

Staff Secretariat, Melissa Sanchez called the meeting to order at 10:05 am PST and welcomed all committee members, invited parties, and ICC staff. Ms. Sanchez noted 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
Jared Brewe [A]	x	X	X	X
Gabriel Carrera [D]	x	X	X	-
Bora Gencturk [C]	x	X	X	X
Rory Hamaoka [H]	x	X		X
Werner Hellmer[H]	x	X	X	-
Maryam Hojati [D]	x	X		-
Berok Khoshnevis [D]	x	X	X	X
Jeff Martin [A]	x		X	X
Doug Mayer [H]	x		X	X
Paul Messplay [H]	x	X	X	-
Aubrey Smading [B]	x	X	X	X
Adil Tamimi [D]				X
Bing Tian [A]	x	X	X	X
TOTAL	12/13	10/13	10/13	9/13

Interested parties in attendance included Stephan Mansour (ASTM), Josh Gebelein (Parsons), Daniel Galvez Moreno (ICON), Steve Szoke (ACI), Muhammad Shakeel Akhtar (Parsons)

3. Approval of Agenda

Chair Mr. Bora Gencturk asked for a motion for approval of the agenda. Mr. Jared Brewe motioned, and Mr. Doug Mayer seconded. The agenda was unanimously approved.

4. Approval of Previous Meeting Minutes

Mr. Gencturk asked for a motion for approval of the previous meeting minutes. Mr. Adil Tamimi motioned and Mr. Bing Tian seconded. The previous meeting minutes were unanimously approved.

5. Update on Work Groups

Before each working group presented their Chapters on the Table of Contents, Mr. Gencturk led a discussion on the first chapter. Using ICC 500 Standard for the Design and Construction of Storm Shelters as a reference, Mr. Gencturk proposed changing Section 101 title from General to Purpose. There were no objections.

Mr. Gencturk proposed to delete section 104 on Quality Assurance. Mr. Tamimi agreed. Mr. Brewe stated that Quality Assurance (QA) and Quality Control (QC) have two different purposes. Mr. Doug Mayer suggested that there should be a chapter for QA and a chapter for QC. Mr. Tamimi agreed. Mr. Gencturk changed the title of Chapter 5 to include Quality Assurance, with a new Section 501 Quality Assurance.

a. Materials Work Group (Bing Tian)

Mr. Tian presented the Table of Contents of Chapter 3– Printing Material Specifications, Testing Methods, and Performance Requirements. Mr. Tian changed Section 303.3 from Bulk Density to Unit Weight. Section 304.4 and 304.5 were made optional.

Mr. Tian presented Chapter 5– incoming material needs QC requirements. Mr. Tian brought up the need to distinguish between printed material requirements and assemble material requirements. Mr. Gencturk added Section 503 – Printed Materials Requirements and under this section 503.1 – Fresh material field testing.

Mr. Tamimi had comments on Chapter 3. He suggested that there needs to be a section in Chapter 3 on supplementary cementitious materials (SCMs). Mr. Gencturk agreed and added Section 302.5 - Supplementary Cementitious Materials. Mr. Tamimi suggested that Section 303 Workability be changed to Flowability. Mr. Gencturk replied that some 3D Concrete requires a slump test. Mr. Tamimi suggested then to keep Workability as the title, but to specify Flowability under this section later. Mr. Tamimi suggested that open time and shear stability of the extruded concrete should be considered in Section 303.3. Mr. Tamimi also suggested that Section 304.1 and 304.2 need to be expanded in detail to include axial compressive strain, modulus of elasticity, water absorption, and water permeability.

In response Mr. Tian states this standard is for cementitious based 3D concrete. Opening the testing requirements to other materials, like geopolymers, broadens the scope too much. Mr. Tian stressed that Chapter 3 is for a laboratory setting, not for the printed material. However, Mr. Tian agreed that for Section 304 testing for interlayer bond strength has some uncertainty to it in a laboratory setting. Mr. Tian suggested to reference it in QC, but also keep it in this section and then address it further with the details.

Mr. Gencturk remarked that these comments can be addressed in detail later and moved the meeting to the next agenda item.

b. Structural Work Group (Jared Brewe)

Mr. Brewe presented the Table of Contents from the Structural Work Group and opened the discussion up to comments.

Mr. Mayer asked if there needs to be a QC and QA section on submittals like the mix design.

Mr. Brewe replied that QC and QA could be under 407 or 501 but is unsure where it lands.

Mr. Gencturk added it under 501.1 submittal requirements.

Mr. Tian brought up pre-mix in the lab section. Mr. Gencturk and Mr. Brewe agreed that pre-mix can be added to 501 QA.

Mr. Tamimi asked a question on safety, impact, and/or fire tests and where are they located in the structural requirements. Mr. Gencturk replied that fire safety can be added to Section 304, however, impact safety requirements are not needed as this document is for residential occupancy and is not required for other concrete residential uses.

Mr. Berok Khoshnevis commented that the age of the dry mix has a big impact on the quality of the structure and asked if this was relevant to this document. Mr. Gencturk replied that this is a general issue with cement materials and Mr. Tian agrees. Mr. Khoshnevis asked about air content and how to characterize it. Mr. Gencturk commented that only entrapped air can be removed, but not entrained air. Mr. Tian noted that air content is important for long term durability. Mr. Gencturk commented that air content is different for 3D Concrete.

Mr. Gencturk remarked that these comments can be addressed in detail later and moved the meeting to the next agenda item.

6. Voting of the Table of Contents for materials and structural working groups

Mr. Gencturk asked if there was a section or subsection that needed to be added. Mr. Brewe asked if Chapter 6 on Design Report is needed. Mr. Gencturk stated that it can be removed as other ICC Standards do not have it.

Ms. Sanchez asked about the level of detail of structural design requirements to be provided in the standard. Mr. Brewe replied that requirements need to be broader than ICON's.

After no more comments, Mr. Gencturk asked for a motion to vote. Mr. Brewe motioned to vote, and Mr. Tamimi seconded the motion. The Table of Contents were unanimously approved.

7. Discussion of Initial Draft

Mr. Gencturk stressed that they have about 3-4 months to develop the draft and thus the working groups need to work swiftly in writing their sections.

8. Next Meeting

The next meeting is set for February 9, 2024, at 10am PST.

9. New Business

There were no additional items.

10. Action Items & Summary

The action items from the meeting were summarized as follows:

<i>Working groups to meet 2 times to write sections prior to next meeting.</i>	<i>Mr. Tian and Mr. Brew</i>
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With no other questions or comments before the committee Mr. Gencturk moved to adjourn the meeting. Mr. Jeff Martin motions for adjourning and Mr. Tamimi seconds the motion. The meeting is adjourned at 11:32 am PST.