

OSHHPD Office of Statewide Health Planning and Development

Hospital Building Safety Board

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HOSPITAL BUILDING SAFETY BOARD Structural and Non-Structural Regulations Committee

Wednesday, June 30, 2021

9:00 a.m. - 3:00 p.m.

Teleconference Meeting Access:
[HBSB GoToMeeting SNSR Committee](#)
Access Code: 298-937-869

Committee Members Present:

Jim Malley, Vice-Chair

Mike Hooper

David Khorram

Marshal Lew

Michelle Malone

Michael O'Connor

Jennifer Thornburg

Consulting Member:

Michelle Malone

OSHHPD Staff:

Elizabeth Landsberg, OSHHPD Director

Paul Coleman, FDD Deputy Director

Chris Tokas

Joe LaBrie

Roy Lobo

David Neou

Carl Scheueman

Jamie Schnick

James Yi

HBSB Staff:

Ken Yu, Executive Director

Joanne Jolls

Evet Torres

1. Welcome and Introductions

1 Jim Malley, Designated Committee Chair, called the meeting to order on June 30, 2021,
2 at 9:00 a.m. and OSHHPD Executive Director, Ken Yu called roll.

3
4 Six members of the Committee present constitutes a quorum. There being seven present
5 at the time of roll, *a quorum was established*.

6 Mr. Yu read the public announcement regarding COVID-19, meeting rules and

procedures.

2. Review the March 24, 2021 final meeting report/minutes approved at the

Presenter: Jim Malley, Designated Chair

Informational and Action item

- None.

3. Proposed amendments to the 2022 California Building Code, Title 24, Part 2

Presenter: Roy Lobo

Mr. Lobo mentioned that the expressed terms, updates and amendments in his presentation was approved at the March 24, 2021, meeting. The intent of the presentation is to provide updates to what was already presented and to open up these topics for discussion, after which proposed language will be adjusted based on input received in this meeting and brought back and presented in the next follow-up meeting.

- Updates to the non “A” Chapters to align with proposed code change amendments to the “A” Chapters
- New proposed amendments to the “A” Chapters
- Revisions and restructure of Chapter 21/21A Masonry
- Updated the reference standards in Chapter 35

Chapter 16/16A

- Revisions made to match proposed amendments to Chapter 16A
- Adoption of ASCE 7-16 Supplements 2 and 3.
- Revised F_a Table 1613.2.3(1) and footnote c in both F_a and F_v tables to match language in Supplement 3
 - **1605.2 Alternate allowable stress design load**
Revised model code language to include the sentence:
Each load combination shall be investigated with one or more of the variable loads set to zero.
 - **1617A.1.5.3 ASCE 7, Section 12.2.3.2.** Modify ASCE 7, Section 12.2.3.2 by modifying Item and adding Items f, g, and h
 - **12.2.3.2 Two-Stage Analysis Procedure. [OSHDP 1 & 4]** Not permitted by OSHPD

Chapter 17/17A

- **1705.3.9.2 Preconstruction tests**

Shotcrete has been removed from the IBC.
Language for testing similar ACI 506R but written in mandatory language

- **1705.5.45 Structural glued laminated and cross-laminated timber.**
[OSHPD 1R, 2 & 5]
Added exception for non-custom prismatic glued laminated members
identified on drawings and sourced from stock or general inventory...

Chapter 18/18A

- **Section 1810 Deep Foundations**

- **1810.3.1.5.1 Helical piles seismic requirements. [OSHPD 1R, 2 & 5]**

Removed the word “ultimate”

- **1810.3.3.1.9 Helical piles.**

Load tests are required to determine ultimate capacity

- **1810.3.8 Precast concrete Piles.**

Same amendments as in the A Chapter

- **1810.3.10 Micropiles**

Removed the word “ultimate”

- **1810.3.11.2 Seismic Design Categories D through F.**

Exception for the need to provide connections is not permitted by OSHPD

- **1810.3.12 Grade beams.**

Changed exception

- **SECTION 1811 PRESTRESSED ROCK AND SOIL FOUNDATION ANCHORS**
[OSHPD 1R, 2 & 5]

- **1811.3 Geotechnical requirements**

Class I corrosion protection is required for all permanent and extended
temporary anchors in service more than 2 years

- **SECTION 1812 EARTH RETAINING SHORING**

- **1812.4.1 Geotechnical requirements**

Same as 1811.3

- **1812A.4.2 Structural requirements**

Editorial edit

Chapter 19/19A

- **1901.3.4 Tests for Post-Installed Anchors in Concrete [OSHPD 1R, 2 & 5].**

- **1901.3.4.3 Test frequency...**

Exception for state detention and correctional facilities of tension
testing requirements

- **1901.3.4.5 Test acceptance criteria**

Exception in spacing of apparatus support location when testing for
bond

- **1905.1.7 ACI 318, Section 14.1.4 [OSHPD 1R, 2 & 5]** and **1905A.1.7 ACI 318, Section 14.1.4 [OSHPD 1 & 4]**
Modified Section 14.1.4 with: Plain concrete shall not be permitted for a structure assigned to Seismic Design Category (SDC) D, E and F
- **1908.1 General**
Added requirement for shotcrete core quality
- **1908.2 Tests and Inspections. [OSHPD 1R, 2 & 5]**
Added preconstruction test of shotcrete panels
- **1910.3.4 ACI 318**
Modification to Table 21.2.2
- **1905A.1.3 ACI 318, Section 9.6.1.3**
Minimum requirement added
- **1908A.1 General**
Added the appropriate ACI reference for evaluating shotcrete mockup panels
- **1910A.5 Tests for post-installed anchors in concrete and 1910A.5.3 Test frequency**
Exception for state detention and correctional facilities of tension testing requirements
 - **1910A.5.5 Test acceptance criteria**
Exception in spacing of apparatus support location when testing for bond

Chapters 21/21A

- Revisions made were initiated by public comments received from the Masonry Institute and consensus achieved in a collaborative effort with OSHPD, DSA and the Masonry Institute.
- Restructured and revised existing amendments rewritten as Modifications to TMS 402/602 and duplicate language has been deleted. Minimal net change in regulatory effect.
 - **2103.4 Metal reinforcement and accessories**
Defined “unidentifiable reinforcement”
 - **2104.2.1... TMS 602, Article 3.3 B Placing Mortar and Units**
Replaced ½ inch masonry protrusions to ¼ inch
 - **2104.2.2 TMS 602, Article 3.4 B Reinforcement.**
Modified language from TMS 602 Article 3.4 B.1 and B.3
 - **2104.2.3 TMS 602, Article 3.4 D Anchor Bolts**
Combined/merged language from TMS 602 Article 3.4 D.3, D.5 and D.6.1
 - **2105.3 Mortar and grout tests. [OSHPD 1R, 2 & 5]**

1 Changed requirement checking for mortar strength to checking for mortar
2 proportions

3 ○ **2105.4 Masonry core testing. [OSHPD 1R, 2 & 5]**

4 Lowered exception for core testing requirement from 2000 psi to 1000 psi

5 ○ **2105.5 Masonry prism method testing and 2105.6 Unit strength
6 method testing. [OSHPD 1R, 2 & 5]**

7 Deleted pointers to TMS 602

8 ○ **2107.7 Masonry Compressive Strength. [OSHPD 1R, 2 & 5]**

9 Lowered nominal strength value to 2000 psi from 3000 psi

10 ○ **2108.4 [OSHPD 1R, 2 & 5] TMS 402, Section 9.1.9.1.1.**

11 Changed the limit to 3000 psi from 4000 psi and revised the compressive
12 strength for clay masonry

13 Chapter 31

14 ○ **SECTION 3115 INTERMODAL SHIPPING CONTAINERS**

15 Not permitted by OSHPD

16
17 **Discussion and Public Input**

18 Mr. Lew posed the following questions regarding slide 28 and whether the text should be
19 as it appears. Tom Hale clarified that the first bullet is supposed to be a paragraph and
20 the next two bullets should be sub-bullets to that paragraph.

21 **4. Potential program for preapproval of premanufactured components and**
22 **systems**

23 **Presenter: Chris Tokas**

24 **Discussion and Public input**

25 Mr. Tokas presented the new acronym for a new OSHPD program: OSHPD Preapproved
26 Prefabricated Components and Systems, OPPCS. He explained that since the start of
27 the pandemic there has been an increase in the use of prefabrication. In the past,
28 prefabrication was used in a very limited capacity, but the growth of Building Information
29 Modeling (BIM) has made it more feasible to implement on construction projects. Mr.
30 Tokas presented examples of prefabricated components and systems used in the past,
31 such as bathrooms that have been built and assembled in other states, brought to the
32 project site and erected in place. He then presented examples of the approach seen more
33 often in the past year, modular construction. The module is prefabricated off-site, in a
34 controlled environment, outfitted with a multitude of nonstructural components and
35 elements. They are made in a standard size that can be transported with a semi-truck to
36 the construction site and are able to be connected to other modules, essentially allowing
37 entire buildings to be assembled using modules.

1 Mr. Coleman expressed the hope is to work with Board Committees to better define what
2 the OPPCS program is and what it isn't, what qualifies for the program and what doesn't.
3 Although aspects of the modulars that Mr. Tokas presented can be preapproved, such as
4 the structure and some of the systems, but that there is also a site or project component
5 side of the equation such as where they are assembled, where the utilities are coming
6 from, and where they are serving the central power, etc. Mr. Coleman expressed that
7 although there is only so much that can be preapproved, OSHPD would like to preapprove
8 as much as possible to not have to review them every single time, project by project.
9 There are currently a couple of projects that OSHPD is currently working on and the idea
10 is as we're moving through every concept, to present it to the Committees to get your
11 ideas and opinions on how the industry will receive it and what types of components and
12 systems would this be best suited for. Mr. Coleman clarified that although these questions
13 do not need to be answered today, it is something that OSHPD would like to start moving
14 forward on to get the program going as quickly as possible once the criteria for the
15 program has been established.

16 Mr. Lew commented that this is a very important program to pursue and expand. Because
17 of COVID in the past year there has been a need in many areas, including California, to
18 expand facilities temporarily. He noted that because we are beginning to see modular
19 construction in commercial spaces, it might only be a matter of time before it enters the
20 medical spaces as well.

21 Mr. Coleman agreed that the industry is definitely heading in that direction. OSHPD takes
22 baby steps but as the industry progresses, OSHPD expands the programs to meet
23 industry needs and to expand with it.

24 Ms. Malone asked for clarification that the modular structures being presented are not
25 just for temporary use, such as COVID, but will instead be used to provide other patient
26 cares services. Mr. Tannahill responded it was originally presented to OSHPD as
27 temporary modules to be used for purely emergency-type situations. He explained that
28 the proposal has since expanded to permanent structures, mounted onto a foundation
29 and used for expanding patient capacity.

30 Mr. Khorram suggested that if a hospital is unable to provide patient care after a natural
31 disaster, the ability to quickly assemble a structure, while the hospital is being rebuilt or
32 repaired, might be a very valid solution.

33 Mr. Malley remarked there is a lot of potential in modular construction. He explained that
34 he was involved in a proposed high-rise construction project, where the idea was to have
35 a structural core, with typical steel-reinforced concrete floor slabs and metal deck fill, and
36 then build the modules around the core perimeter, stack them, and tie them back into the
37 core for lateral resistance. He indicated that it became a big challenge for the modular
38 proponent to demonstrate how the diaphragm worked to bring those loads back into the

1 core structure. He, also, acknowledged that expanding into seismic areas where the
2 diaphragms are so integral to the overall performance of the building is going to be a
3 potential challenge.

4 Mr. Malley then asked Mr. Coleman and Mr. Tokas if there was a real push for self-
5 contained room units, like bathrooms, being proposed on new developments? He also
6 inquired if there were any other room types or applications other than bathrooms being
7 proposed? Mr. Tokas affirmed that OSHPD currently has two multimillion-dollar projects
8 that are moving forward with self-contained bathroom units and that the concept is gaining
9 traction. Mr. Tokas specified that so far bathrooms are the only room types being
10 proposed. Mr. Coleman added that OSHPD has seen some additions and new buildings
11 made of modular construction but those were just one-offs, nothing that could be
12 replicable. He noted that the bathroom modules are the first because they are fairly
13 complex and very repeatable, but that he believes that this system is the direction that
14 the industry will continue to move in.

15 Mr. Malley inquired how OSHPD prepares for seeing this type of system being proposed
16 on a regular basis? Mr. Coleman explained that OSHPD is putting together the program,
17 and the description of the program, continuing to work with manufacturers and hospitals
18 on their needs, then presenting it to the appropriate committees of the Board for review
19 and discussion to make sure that the program is going in the right direction. Mr. Coleman
20 remarked that something like this also requires modifications to the Electronic Services
21 Portal for applications, processing, etc. and that OSHPD will start with a more simplified
22 version of it and then as it advances, do the other technical parts of it. He stated that
23 Structural Support Unit within FDD will be tasked with assembling the program concept.

24 **5. Comments from the Public/Board Members on Issues Not on This Agenda.**

25 No comments.

26 **6. Adjournment**

27 Mr. Malley adjourned the meeting at approximately 10:17 a.m.