

ACI Committee 371 Meeting  
ACI Spring Convention  
New York, NY  
Hilton New York, Nassau A  
Tuesday, 19 April 2005, 11:30 AM

Attendees:

A. A. Liepins, chair  
J. S. Ward, secretary  
C. S. Hanskat, ACI-TAC  
R. Pawski, member  
E. Ingram, member  
S. R. Close, member  
K. R. Harvey, consulting member  
L. O. Balck, visitor

Absent members - excused:

None

Absent members – not responding:

K. A. Binder, member  
S. W. Meier, member  
J. Moll, member  
I. Ahmed, prospective member  
N. J. Everard, member  
G. B. Rest, member

1. A. A. Liepins called the meeting to order at 10:30 AM.
2. On a motion by J. S. Ward the minutes of the 26 October 2004 meeting were approved.
3. E. Ingram gave a progress report on shear in the elevated tank pedestal. He reported that he is in contact with Dr. Richard Bennet at the University of Tennessee to develop a research plan. R. Pawski agreed to draft a section dealing with the force demand side of the shear calculation.
4. R. Pawski's comments on Draft C were discussed. Items address are as follows:
  - Load notation E will have the term "horizontal" removed from its definition. After discussion regarding how ASCE 7 combines horizontal and vertical components, it was agreed that the use of  $2/3$  horizontal for the vertical acceleration.
  - If the term "g" is directly referenced in the document, it will be added to the list of notations.
  - The term "dome" in the definition of  $p_s$  will be dropped. Also, the rain-snow surcharge will be added back into the list of notations.
  - The term "model" will be changed to "modal" in the definition for  $W_m$  in the list of notations.
  - After discussion, it was agreed that for compressive strength in Section 2.1.1.4, the following changes will be made: for prestressed concrete change 5000 to 4500, for non-prestressed above foundation elements no change from the original 4000 and for non-prestress footings change from 3500 to 3000.
  - S. R. Close noted that for Section 2.1.1.5, the term "water-cement ratio" should be changed to "water-cementitious ratio".

- In Section 3.1.3.1.1, references to the concrete tank vessel will be moved to the Sections specific to concrete tanks
- In Section 3.1.4.1.3.1(b), pedestal and tank vessel will be separated into separate headings. Also, it was agreed that J.S. Ward will discuss ACI 371 use of the term pedestal versus that referred to by other ACI documents.
- The values to be used for covers used in the tank pedestal are in debate at this time. R. Pawski and J.S. Ward will discuss between meetings to develop an appropriate way to handle cover values for the pedestal, especially for the inside face covers.
- Contained water load factors for load combinations of Section 4.1.2.2.1.1 were debated. A. A. Liepins noted that it would be prudent to have one combination for concrete elements in direct contact with contained water and another combination for concrete elements not in direct contact with contained water. R. Pawski argued for a higher value for contained water due to continuing cycle of filling and emptying of tanks. It was finally agreed that the combination as presently shown will be used for elements not in direct contact with contained water such as the pedestal and foundation whereas a higher contained water load factor will be used for elements in direct contact with contained water.
- In Section 4.1.2.4.1, it was agreed to add after “circular cylindrical” the phrase “or any other geometry”. A. A. Liepins explained that ACI 350 sloshing provides a good approximation for various types of shell structure if an equivalent cylindrical shell is used of the same volume and same free surface area. A. A. Liepins and R. Rolf agreed that this explanation would appropriately be placed in the commentary section of the ACI 371R document.
- In Section 4.1.2.5, it was agreed for now to keep the minimum live load of 12 psf. Also it was agreed that the 100 psf live load on access stairs and platforms be change to “60 psf with a 40 psf provision for equipment that may be supported from the stair or platform.” We will also include a requirement for a concentrated live load of 1000 pounds.
- In Section 4.1.2.6.2, it was agreed to keep Equation 4-1a because it pertains specifically to elevated tank structures whereas Equation 4-1b will be replaced by a reference to ASCE 7.
- In Section 4.1.2.7.3, it was proposed by R. Pawski that an equation similar to that in the original ACI 371R document be added back. No decision was immediately agreed upon, and this item may be discussed between meetings.
- In Table 4.2.2.2, it was agreed that R. Pawski and J. S. Ward will discuss the item of minimum vertical steel reinforcement for the tank pedestal for tanks with a Seismic Coefficient  $S_{D1} < 0.20$ .
- There were five more comments from R. Pawski that could not be covered due to our running past our allotted meeting time conflicting with the setup for the following activity in the room. It was agreed that R. Pawski note these comments online so we could deal with those issues prior to the next meeting.

5. The meeting was adjourned at 11:50 AM.