

ACI 318 Sub A – General Concrete and Construction

[ACI 318 Chapters 1, 2, 3 (excluding 3.5), 4, 5, 6, and 22]

Tampa Meeting

Tuesday, 5 April 2011, 1:30 PM to 6:30 PM, Meeting Room 13

DRAFT AGENDA

1. Call to order at 1:00 pm.
2. Introductions and Membership changes.
3. Approval of Agenda.
4. Approval of Minutes of Pittsburgh meeting, 26 October 2010.
5. Old Business:

5.1. Review of Sub A Ballot A04-2010 (closed 15 December 2010.) This ballot was on proposed responses to 318 comments on the second version of Chapter 5. Ballot results were previously sent out by email. There were 20 comments on this ballot. Comments were addressed by Tony and reviewed by Terry. These comments were incorporated into the final version of Chapter 5 that was balloted by Sub A on LB 01-2011. See item 5.3, below.

5.2. Review of Sub A Ballot A05-2010 (closed 30 December 2010.) This ballot was on the revised version of Chapter 22. Ballot results were previously sent out by email. There were 64 comments on this ballot. Comments were addressed by Nick and reviewed by Terry. Chapter 22 was forwarded to 318 for its second ballot. See item 5.7 below. Note that this ballot also included CA 026 as part of the revised Chapter 22. CA 026 received a number of negatives and was not sent forward with Chapter 22. CA 026 will be balloted again on the next Sub A ballot.

5.3. Review of Sub A Ballot A01-2011 (closed 1 Feb 2011.) This ballot was on the latest version of the reorganized Chapter 5. Ballot results previously sent out by email. There were 13 comments on this ballot. Comments were resolved by Terry. Chapter 5 was forwarded to Committee 318 for its third ballot. See item 5.7, below.

5.4. Review of Sub A Ballot A02-2011 (closed 20 March 2011.) This ballot was on the first half of the proposed responses to comments on Chapter 24. There were 93 comments on this ballot. A copy of the comments is **enclosed** with this agenda. Comments have not yet been addressed.

5.5. Summary of all CA items. An updated list of all CA items as of before the Tampa meeting is **enclosed**. Please review and continue to work on the items assigned to you. Note that we currently have 28 active items of which 14 have been approved by Sub A.

CA 021: Tony is to report on recommendations on this item. Tony was not prepared to report in Pittsburgh. Will try to resolve this one in Tampa.

5.6. CA Items resolved since the last meeting:

CA 112, Final Update of ASTM standards, 318 LB 11-2, passed. Will be incorporated into 318-11.

5.7. Code reorganization.

5.7.1. Task Groups for Code Reorganization. Following are the current Task Groups. No changes since last meeting. Florian and Dean will be reassigned once Chapter 23 is merged into Chapter 24.

Chapter 5, Material Properties and Durability. **Tony, CH**, Fred, Doug
Chapter 22, Concrete Materials and Quality Assurance, **Nick, CH**, Ken B., Eric
Chapter 23, Formwork, **Florian, CH**, Dean
Chapter 24, Contract Documents and Construction, **Colin, CH**, Steve, Ken H., Harry, Jason

5.7.2. Current Status:

Chapter 5: Third version of Chapter 5 was balloted on 318 LB 11-02. 31 comments were received. Comments forwarded to TG. Copy of comments is **enclosed**. Next Action: We may be able to wrap this one up without an additional 318 LB. To be discussed in Tampa.

Chapter 22. Second version of Chapter 22 was balloted on 318 LB 11-02. 97 comments were received. Comments forwarded to TG. Copy of comments is **enclosed**. Next action: To be discussed in Tampa.

Chapter 23. First version of Chapter 23 was balloted on 318 LB 10-03. 107 comments were received. Proposed responses were prepared by TG and balloted on Sub A 03-2010. 68 comments were received. TG is working on resolving comments. Next action: Sub A ballot on proposed responses and revisions to chapter. To be discussed in Tampa. NOTE: The SC has approved merging Chapter 23 into Chapter 24. This will be done once the current batch of comments on Chapter 23 is resolved.

Chapter 24. First version of Chapter 24 was balloted on 318 LB 10-01. 438 comments were received. Comments 1-259 were balloted on Sub A LB 02-2011. 93 additional comments were received. Next action: The remaining comments will be on the next Sub A LB. This chapter requires a lot of reorganization and rewriting. Status of Chapter 24 will be discussed at the SC meeting in Tampa. Moving this chapter forward may require a meeting of selected individuals to spend some time working on the revisions.

5.7.2 Process for moving forward. The following step-by-step process for working with the reorganized document was discussed and adopted. No changes from what was presented in Pittsburgh.

Approach for Sub A to go Forward

1. 318 Letter Ballot
2. Comments to Sub A Task Group – Return a single set of comments ready for Sub A ballot
3. Sub A Letter Ballot on Proposed Responses

Achieve Consensus

4. Prepare revised chapter (Terry, Greg, and Staff editors)
5. Sub A Letter Ballot on Revised Chapter

Achieve Consensus

6. Return chapter to 318 for next Letter Ballot

5.8. Use of 4 x 8 inch cylinders. Rachel Detwiler sent Sub A a copy of a paper that she has prepared. Mike Bartlett has also provided comments on this paper. Colin Lobo also provided additional information on this topic. The committee agreed that we would like to see data from additional labs before making any

changes to the requirement for testing three 4 x 8 in. cylinders. Harry Gleich reported that the precast industry has converted to testing only two cylinders. Colin Lobo will forward additional test data. The committee agreed to reopen this item. Steve Kosmatka and Colin Lobo were appointed to summarize current data and to prepare a new b allot item for consideration. This item is assigned CA 105. **Steve and Colin will update references in CA 105 and send for a Sub A ballot. Status?**

5.9. Performance specifications and implications for 318. Topic remains open for possible action during this code cycle.

5.10. Exposure class conflicts. A possible conflict between Classes F3 and C2 was brought up during the St. Louis meeting. Can we determine a course of action? Doug Hooton agreed to review this item and bring back a proposal for the committee. Hooton has prepared an item (CA 108 that will be balloted on the next Sub A ballot. **Hooton is to present an overall assessment of Categories C and F for discussion in Pittsburgh. Doug will present in Tampa.**

5.11. Adding alkali-silica reactivity (ASR) to the Code. Of all of the major durability issues with concrete, only ASR is not addressed in the Code. After discussion, a Task Group of Folliard, Hooton, and Fiorato was formed to review this issue and make a recommendation to the committee during the meeting in New Orleans. In Chicago, Tony reported that ASTM C09 is preparing a specification for dealing with ASR. Sub A agreed to put any action on hold until that document is completed. **It was agreed that it is still premature for Sub A to take any action here. This item will remain on the agenda until action is taken. Doug will present an update in Tampa.**

5.12. Determining Lambda. Carino had the following comment on Sub A Ballot A02-09:

I have some questions about the splitting tensile strength. First, f_{ct} is defined as the average splitting tensile strength, so this is not a function of f'_c , but a function of the average compressive strength of the concrete. So it is not correct to say that f_{ct} is $6.7 \sqrt{f'_c}$. Second, I'd like an explanation of how an engineer would determine lambda for the second alternative. The code language is not clear. I think the f_{ct} in the equation should be measured average splitting tensile strength. Maybe Fred or Ken can explain to us how the equation in 8.6.1 is supposed to be used to choose lambda.

It was agreed that the Code needs cleaning up here. Fred will follow up with ACI 213 and prepare a CA item. Note that CA 111 was assigned here. Status?

5.13. Definitions of Exposure Classes F1, F2, and F3. A Code user sent the following email to Basile:

ACI 318-08 Table 4.3.1 for each exposure class F1, F2 and F3 the maximum w/cm is 0.45 and the minimum concrete strength is 4500 psi. The commentary indicates that F1 and F2 are conditions where exposure to deicing salts is not anticipated.

ACI 201.2R-01 Section 1.4.2 Water-cement ratio. For concrete exposed to deicing salts maximum w/cm ratio Is 0.45 and all other structures maximum w/cm ratio is 0.50.

Can you verify that the values in ACI 318 table 4.3.1 are what ACI 318 intended? I would think that freezing and thawing exposure going from "moderate, F1" to "severe, F2" to "very severe, F3" that the maximum w/cm ratio and minimum concrete strength would vary.

We build vertical slip formed concrete structures (grain storage type structures), ACI 313-91 required a minimum compressive strength of 3000 psi, ACI 313-97 requires a minimum compressive strength of 4000 psi and now it appears that ACI 318-08 is requiring 4500 psi concrete for exposure conditions F1 and F2. ACI 318-08 commentary indicates that F1 is for exterior walls not in direct contact with soil and F2 is for vertical members in contact with soil.

Does Sub A need to take action here? This item was not discussed in New Orleans or in Chicago because of a lack of time. Not discussed in Pittsburgh. Status?

5.14. Sulfate resistance: The following email was sent to Cathy French. Colin Lobo responded as shown.

I hope your sabbatical is going well. I had a question for you when
> you have a minute. On our wind farm projects in some parts of the
> country we are running into situations where we have severe sulfate
> exposures and it seems that I am continually at odds with local
> concrete suppliers over the interpretation of the sulfate resistance
> portions of chapter 4 of ACI 318. Is this one of your fields of
> expertise or can you recommend someone I could talk to so I can make
> sure I am doing the right thing?
>
>
>
> The issue that I keep running into is that, the way I read section
> 4.3, for severe sulfate exposures, type V cement is required. Type I
> or II cement with the addition of class F fly ash can be used if the
> mixture meets the requirements of section 4.5 when tested according to

> ASTM C1012. The problem is that the test takes 6 months or a year to
> run and I have yet to run into a concrete supplier who has run it on
> any of their mixes. The suppliers that I talk to want to offer me a
> test result from ASTM C452 but I have found multiple references in the

> literature to the fact that this test is not accurate for mixes
> containing cement blended with pozzolans. I have continued to insist
> that the C1012 test be run if anything is to be substituted for the
> type V cement but I seem to be the only engineer that these suppliers
> are running into that is requiring them to do this.

Colin Lobo:

I will attempt a response. The sulfate provisions in the code are not ideal for compliance in practice.

In the footnote to table 4.3.1 "The amount of the specific source of the pozzolan or slag to be used shall not be less than the amount that has been determined by service record..."

This note permits the LDP to use customary practice on mix composition in lieu of test. It is realized the test duration is too long for mix submittals. It is unlikely that concrete suppliers will have C1012 data. It is more likely that blended cements by C595 or C1157 will have data in their certifications, but S3 requires additional SCM. In CA for instance the use of 25% fly ash in addition to a sulfate resistant cement has been considered adequate for severe sulfate conditions. I think it is accepted by CALTRANS. I am not sure of the area of your projects, but slag as an SCM might be an option too. Slag has been entering the CA market more recently and these suppliers (as with the fly ash people) might have C1012 data but it wont be with the specific cement for the project. What is important in the cement would be

the C3A used in the test relative to that used on the project. If that on the project is equal to or less than that used in the test, it should be OK.

ASTM C 452 is not an appropriate test - it is an optional test to qualify Portland cements for sulfate resistance only.

You might consult with Eric Tolles who is a code official for the city of Irvine in CA (if that's where you are operating). Eric is on 318 and aware of these provisions.

Does Sub A need to take action here? This item was not discussed in New Orleans or in Chicago because of a lack of time. Not discussed in Pittsburgh. Status?

5.15. 318 LB on Responses to Public Comments on 318-11. There were 32 public comments for Sub A to resolve. Responses were prepared and the responses were balloted on 318 LB 11-02. On this LB, 54 comments were received, which included 26 negative items. Terry has worked to resolve all of the comments. A list of the 318 ballot comments and the revised responses to public comments is **enclosed**.

5.16. Next Sub A ballot. The following items are currently planned for the next Sub A LB:

- CA 026 updated from last LB.
- CA 108, first ballot. Clarify Exposure Class F3.
- Second half of comments on Chapter 24.
- Responses to Sub A comments on Chapter 23.

6. New Business:

Note that the following new business items are listed by title only because we will probably not have time to address them. If time is available or if a topic is of interest to a member, we will address these items.

6.1. Core waiting period.

6.2. Add recycled aggregate to the Code.

6.3. Top bar effects in self-consolidating concrete.

6.4. Fix mixture proportioning flow chart in Commentary.

6.5. Various new work items resulting from review of Version 1 of the reorganized Code.

6.6. w/cm versus strength for durability.

6.7. Chloride ion restrictions in concrete containing aluminum embedments.

6.8. Request to add ASTM C 1600 Rapid hardening Hydraulic Cements to the Code.

6.9. Inquiry regarding appropriate strength for w/cm for durability. (Goes with 6.9.)

Note: None of these items were discussed in Pittsburgh.

7. Adjourn

SUMMARY OF SUB A ITEMS -- AFTER PITTSBURGH MEETING

	Total Sub A items	46	
	Last CA Number Assigned	CA 112	
SOURCES	Carryover from 2008 Code cycle	16	
	Added from public 2008 comments	11	
	Added during this Code cycle	19	
	Total	46	
RESOLVED	Adopted, 2011 Code	6	
	Not adopted, 2011 Code	12	
	Adopted, 2014 Code	0	
	Not adopted, 2014 Code	0	
	Active items	28	
	Total	46	

ACTIVE ITEMS

NUMBER	DESCRIPTION	RESPONSIBLE	COMMENTS
CA 002	Curing issues, 5.6.4.1 and 5.11	Hover	See comments for CA 026. This item will be kept open until the results of CA 026 are known
CA 021	Review core evaluations	Fiorato	Chicago: Tony to review to see if this item needs to be carried forward.
CA 026	Rewrite of Chapter 5, strength issues	Hover	Sub A ballot A01-2009, DNP, revise and rebalot
CA 044	Use of "nor"	Carino (edit TG)	Passed Sub A
CA 056	Harmonize chloride limits	Weiss	On hold, coordinate with ACI 201 and ACI 222
CA 065	Maximum size of aggregate between reinf and forms	Holland	Passed Sub A
CA 069	Incorporate certified inspectors into the Code	Holland and Carino	Sub A ballot 10-2006, DNP
CA 070	Cementitious materials for chlorides	Lobo/Weiss	On hold, coordinate with ACI 201 and ACI 222
CA 077	Rewrite Ch 5, construction issues	Hover	Sub A ballot A01-2009, DNP, revise and rebalot
CA 083	2008 Code, PC 5, Hanskat. 1.1.5, review references to all ACI codes and code-like documents	Holland	Basis material has been supplied
CA 086	2008 Code, PC 22, Castrodale. 2.1 and R8.6.1, insure definition of lamda is consistent.	Meyer/Bondy	Passed Sub A

CA 087	2008 Code, PC 24, 25, 28, and 428, Castrodale. Various locations, including table in 9.5, range of density values for lightweight concrete.	Meyer	Passed Sub A.
CA 088	2008 Code, PC 38, Gustafson 318 ballot comment. Table R.4.3.1, second sentence below table. Delete sentence regarding epoxy and zinc coated bars.	Hooton	Basis material has been supplied
CA 092	2008 Code, PC 69, Cunningham. 2.2 and 5.6.2.4, add definition of strength test to Ch. 2.	Carino	Passed Sub A -- Need to combine with CA 099 for 318 ballot.
CA 093	2008 Code, PC 414, Green. R8.6.1, give justification for interpolation in values of lamda.	Bondy/Meyer	Passed Sub A
CA 094	Add equation numbers Table 5.3.2.2 (Misc. #6)	Carino	Passed Sub A
CA 095	Editorial clarification, 4.1.1 (Misc. #13)	Carino	Passed Sub A
CA 096	Editorial clarification of 5.6 (Misc. #12)	Holland	Ballot A03-2008, did not pass. Hold for Ver 2 of reorg, may become moot.
CA 098	Clarify application of 5.5	Carino	Hold for resolutiopn of CA 026
CA 099	Clarify use of term f'c, various locations	Fiorato	Passed Sub A -- Need to combine with CA 092 for 318 ballot.
CA 101	Clarify requirements regarding measuring air	Hover	Passed Sub A
CA 103	Add "and roofs" to 6.4.4 (misc Item #3)	Holland	Passed Sub A
CA 104	Remove Exposure Cat. "Permeability" from Ch. 4; misc edits to Ch. 4 (misc item # 4)	Lobo	Passed Sub A
CA 105	Number of 4x8 inch cylinders required	Kosmatka	Assigned at San Antonio meeting.
CA 107	Add general sustainability comments	Kosmatka	Passed Sub A
CA 108	Clarify requirements for Class F3	Hooton	Ready for ballot
CA 109	Revise definition of admixtures	Lobo	Passed Sub A
CA 111	Additional lamda issues -- can lamda be defined on basis of unit weight?	Meyer	Assigned in Pittsburgh

318 LB 11-2, Chapter 5 Reorg Comments.

1.	Fiorato	CR054	4425	1	C	In their response to ACI 318 Ballot LB11-1 a majority of respondents indicated a preference for the following title to Chapter 6: "CHAPTER 6 – Steel Reinforcement: Material Properties, Design Properties, and Durability Requirements" Recommend that consideration be given to revising Chapter 5 title as follows: "CHAPTER 5 – Concrete: Design Properties and Durability Requirements"
2.	Holland	CR054	4425	1	C	The designation "CR054" would seem to be in error for this ballot item. This is the third, not the fourth, time that this chapter has appeared on a 318 LB.
3.	Wood	CR054	4425	1	C	Would it be possible to shorten the chapter title? Suggest using "Design Properties for Concrete." The scope can explain that both strength and durability provisions are presented.
4.	Fiorato	CR054	4425	15	C	Are the words "specified in contract documents and shall be" needed here as the contract document requirements are now in Chapter 23?
5.	Fiorato	CR054	4425	21	C	The footnote in the Table correctly references <21.1.4.3>. However, there is a typographical error in the response to Comment 15 on p. 4511 relative to the footnote. The response should also reference 21.1.4.3, not 24.1.4.3.
6.	Wyllie	CR054	4425	21	N	Use words, not a table. The maximum limit on concrete of "None" is as the code allows but we do not need to state this.
7.	Browning	CR054	4425	25	N	The original wording in 318-08, with modifications, is better than the revised revision. "Unless otherwise specified, f'c shall be based on 28-day tests. If other than 28 days, test age for f'c shall be as indicated in the Contract Documents design-drawings or specifications. " Note – Chapter 23.2 requires the test age be in the Contract Documents.
8.	Fiorato	CR054	4425	25	C	Are the words "in contract documents" needed here as the contract document requirements are now in Chapter 23?
9.	Frosch	CR054	4426	30	N	I personally liked the table as it clearly spelled out the range of applicability. My negative is that we should number the equations. If we abandon the table, suggest that this be rewritten to be similar to 5.2.3.1 where equation numbers are provided for both the w_c equation and the 57,000 equation.
10.	Rabbat	CR054	4426	30	C	Editorial: E subscript c
11.	Taylor	CR054	4426	30	C	The "c" in E_c is not a subscript
12.	Seguirant	CR054	4426	31	C	Is "(in psi)" necessary? Won't the definitions specify the units?
13.	Wyllie	CR054	4426	52	N	Use words as in present code, not this table.
14.	Rabbat	CR054	4427	72	C	Editorial: lower case "licensed design professional"
15.	Gustafson	CR054	4427	73	C	Suggest inserting "structural" before "members".

16.	French	CR054	4427	76	C	In numerous locations SO_4^{2-} , is the superscript "2-" appropriate? It is not in ACI 318-08 and was not in the ACI 318-11 version reviewed by TAC.
17.	Rabbat	CR054	4427	76	C	Editorial: Delete superscript "2-" in CO_4 throughout table. Ignore this comment if the superscript does not appear in your Word file.
18.	Seguirant	CR054	4427	76	C	Delete the "2-" superscripts on SO in the table.
19.	Wood	CR054	4427	76	N	The term "not applicable" does not really define the severity (or risk) of the exposure category. Suggest replacing with "low" throughout Table 5.3.1.
20.	Wood	CR054	4427	76	N	Suggest using a separate table for each exposure category. The conditions are not the same for the four categories, so the condition column is confusing.
21.	Wood	CR054	4427	76	N	Why is "seawater" included in the table? Are all seawater environments considered to be moderate?
22.	Wood	CR054	4427	76	N	What happens if the conditions for sulfate are moderate for water-soluble sulfates and severe for dissolved sulfate in water? Which class would apply?
23.	Seguirant	CR054	4427	99	C	Concrete cover has been moved to 6.10.5.
24.	Wood	CR054	4428	81	N	Separate tables should be provided for each exposure class. The other than maximum w/cm and minimum f'_c , the information in the other columns varies with the exposure class. This is very confusing for the user. In addition, the list of subscripts will be much shorter if the tables are separated.
25.	Wood	CR054	4428	81	N	References to Table 5.3.4.1 and Table 5.3.4.2 are incorrect. Should be 5.3.3.1 and 5.3.3.2.
26.	French	CR054	4429	82	C	In the response to comment 39 on the last ballot (see pg. 4515), there is a reference to a new provision that was to be added—I didn't see a new 22.4.1.6.
27.	Wood	CR054	4429	82	N	The rows for corrosion protection imply that concrete cover provisions do not need to be satisfied for exposure categories C0 and C1. This is not true. The table should indicate that the standard cover requirements apply for C0 and C1, but that additional cover may be required for C2.
28.	Dolan	CR054	4429	83	C	This is the best example yet for footnote references to be numbered thus ^[1] .
29.	Becker	CR054	4429	99	C	I think 20.2 should now be a Ch 6 reference
30.	Gustafson	CR054	4431	122	C	Consider revising Line 122 to: ". . . Alternative <u>combinations of cementitious materials</u> . . . "
31.	Parra	CR054	4431	128	C	Consider following rewording: "Requirements for establishing suitability of combinations of cementitious materials exposed to..."

No.	Name	Ballot Item	Pg #	Line #	Y/C or N	Comment
1.	Carino	1	0	0	G	In the "response" column remove strikeout and <u>underline</u> except where we are showing modifications of the balloted text. When showing changes to balloted text make sure that the text being changes is what was balloted. There are some responses where the revised text includes changes that were suggested in a previous version of the comments and have been struck. See my response to Comments 6 and 194 as examples.
2.	Carino	1	0	0	G	We need to take care when the voters' comments are cut and pasted into the summary table. In some cases the mark changes were lost and it was hard to figure out what the original comments were.
3.	Fiorato	1	1	1	Y/C	In the last sentence of the response, change 310 to 301.
4.	Carino	1	1	1	Y/C	In the last line of the response fix "310" to "301".
5.	Barth	1	1	1	C	Change last sentence of response which makes reference to committee 310 instead of 301.
6.	Browning	1	1	2	Y/C	Item 2 - We should respond with the new name for the chapter "Construction and Formwork Requirements"
7.	Fiorato	1	1	6	N	Reword as follows: 24.1.1 The provisions of this chapter shall govern requirements to be incorporated into contract documents, as applicable. 24.1.2 The provisions of this chapter shall govern construction requirements for the Work. Delete proposed 24.1.3.
8.	Carino	1	1	6	N	I don't think that splitting the scope into two sentences is necessary. The text in 24.1.1 says the same thing that is covered in 24.1.2. I think the new provision on applicability can be revised to state more clearly what is intended. The text should be shown as the balloted text with the proposed changes a strikeout and <u>underline</u> . Delete all the other struck out text. My suggestion for the Response: "Revise the scope to clarify that this Chapter includes construction requirements for the Work and that these requirements need to be incorporated into the contract documents. Add a new provision to address Comment 13. 24.1.1 The provisions of this chapter shall govern construction requirements to be incorporated into the Work and that shall be included in contract documents. 24.1.2 Only those provisions applicable to the Work need to be included in the contract

No.	Name	Ballot Item	Pg #	Line #	Y/C or N	Comment
						documents."
9.	Barth	1	1	6	C	24.1.2. Sentence still reads awkward; like staff's option better. "The provisions of this chapter shall govern information required to be incorporated into in the contract documents and construction of the Work." However, not critical!
10.	Fiorato	1	2	11	Y/C	Suggest replacing the last sentence with "See Comments 2 and 6."
11.	Carino	1	2	11	Y/C	I suggest we insert a new second sentence. "These are items that the LDP has to incorporate into the contract documents either by referencing ACI 301 or writing them into the Project Specifications."
12.	Fiorato	1	2	13	N	Do not add this provision. See 2 above.
13.	Carino	1	2	13	Y/C	If we accept my response for Comment 6, the response should be "Added as 24.1.2".
14.	Carino	1	3	11	N	If we add 24.1.2 in response to Comment 13, I don't think we need to change 24.2.1. Change the response to: "Leave as is. See Comment 6." If I'm not persuasive, the marked text should be as follows: 24.2.1 — The licensed design professional shall incorporate (a) through (e) into the contract documents if applicable to the Work." However, I don't like this because what we really mean is that only those portions of (a) through (e) that are not applicable to the Work need to be included in the contract documents.
15.	Fiorato	1	3	21	N	The proposed response does not address the concern. Suggest rewording response as follows: "24.2.1 — The licensed design professional shall incorporate (a) through (e), as applicable, into the contract documents."
16.	Carino	1	4	12	Y/C	I suggest we make some modifications to the suggested text. "(a) Code version and design load information (1) Name and date of issue of code and supplement to which design conforms; and (2) Live load and other loads used in design."
17.	Fiorato	1	4	24	Y/C	To keep parallel construction Line 28 should read: "(b) Reinforcement requirements..." Similar changes on Lines 60, 74, and 87.
18.	Carino	1	4	27	N	I think this is an item of new business. The current code does not require the LDP to state the aggregate size. When the reinforcement layout is designed, does the engineer choose the aggregate size, or is this the contractor's responsibility?
19.	Fiorato	1	4	28	N	Replace "unit weight" with "density."
20.	Carino	1	4	28	Y/C	Use "density" instead of "unit weight" because that is what we use when referring to LW concrete.
21.	Carino	1	5	29	Y/C	I suggest we insert "minimum" after "establish."

No.	Name	Ballot Item	Pg #	Line #	Y/C or N	Comment
22.	Carino	1	5	32	Y/C	We already did this in response to Comment 24. Change the response to "OK See Comment 24."
23.	Carino	1	6	35	N	I don't think it is good style to begin a sentence with notation. I suggest we insert " f_c " after "strength."
24.	Carino	1	6	37	Y/C	Is the intent of the comment to put the "prime" first followed by the "sub c"? This will be handled in the final production. I don't know why guideline 2.7.2 is mentioned.
25.	Carino	1	6	40	Y/C	Revise to "24.2.1"
26.	Fiorato	1	7	44	N	Not sure this can be deleted. Somewhere the drawings must show the length of bar anchorage. Suggest following the staff recommendation in Comment 46.
27.	Carino	1	7	50	N	I don't think we should add "initial and final". It is not in the current Code and it is outside of responsibility of Sub. A. Why would the Contractor have to know the "final" force?
28.	Fiorato	1	7	51	Y/C	By accepting the change are we introducing a code change?
29.	Carino	1	7	51	N	This is also outside of the scope of Sub A. I don't understand how you can just specify the number of tendons without specifying the force in the tendons. In any case this is new business,
30.	Fiorato	1	8	55	N	Suggest following response: "This is a code change that should be addressed by Sub G."
31.	Carino	1	8	61	Y/C	This seems like a simple editorial revision for clarity. Why can't we make the change?
32.	Carino	1	8	62	Y/C	Change response to "See Comment 61."
33.	Carino	1	9	65	Y/C	Seems like a simple revision.
34.	Carino	1	9	66	Y/C	Won't specifying the locations of the anchors take care of the edge distance?
35.	Carino	1	9	69	Y/C	This seems like a simple editorial change. Why not just do it?
36.	Carino	1	9	70	Y/C	I think we could make the following argument if we want to not make the change: The designer of the lifting devices needs to know the loads that have to be resisted. The Contractor, on the other hand needs to know what to use and where to place them. So I don't think that the additional descriptive information adds anything as far as the Contractor is concerned.
37.	Fiorato	1	10	73	N	Reword as follows: (4) Provision that any aluminum embedments in structural concrete shall be coated or covered to prevent aluminum-concrete reaction or electrolytic action between aluminum and steel."
38.	Carino	1	10	73	Y/C	Show only the change to the balloted item as follows: Protective covering or coating of aluminum embedments to prevent aluminum-concrete reaction or electrolytic action between aluminum and steel.
39.	Fiorato	1	10	77	N	Suggest accepting staff recommendation, but change "Protection of ..." to "Provision for protection of..."
40.	Carino	1	10	77	N	This comment is not the same as Comment 73, so it needs a different response. I think it is a good

No.	Name	Ballot Item	Pg #	Line #	Y/C or N	Comment
						comment because in C(1) we use "embedments and anchors." I suggest we say: "OK Make the suggested changes."
41.	Carino	1	10	79	Y/C	Shouldn't the response be "new business"?
42.	Carino	1	11	83	Y/C	Should we go one step further to clarify the intent of the details? Can we change this to: Details for accommodating dimensional changes resulting from prestressing, creep, shrinkage, and temperature;
43.	Carino	1	11	84	N	Of what importance is it to identify which slabs-on-ground are parts of the seismic-force resisting system? The Contractor needs to know how to build the slab. So unless there is some reason why this is important for the Contractor to know, why don't we recommend deleting it.
44.	Carino	1	12	97	Y/C	So that it doesn't fall through the cracks, I suggest we add the precast provision that is being moved from the (d) list. (5) Dimensional tolerances for precast members, connections, and interface between members.
45.	Carino	1	14	119	Y/C	We could also refer to Comment 23 because we are adding some of the items that are suggested.
46.	Carino	1	15	122	Y/C	We could also refer to Comment 1 where we state that Sub A is considering removing the construction provisions.
47.	Fiorato	1	15	123	Y/C	Suggest adding: "See also Comment 2."
48.	Carino	1	15	124	Y/C	We could refer to Comment 2, where we propose a new title for the Chapter.
49.	Fiorato	1	15	126	N	Are these provisions (proposed 24.3.1) needed? We have the requirement in 24.1. Also, what is intended by the proposed wording for 24.3.1? Is it meant to indicate "only the contract documents that apply" or "only the requirements that apply"?
50.	Carino	1	15	126	Y/C	The wording is rough. I suggest an editorial improvement: 24.3.1 The Licensed Design Professional shall incorporate into the contract document the requirements of 23.3.2 through 23.3.18 that apply to the Work
51.	Fiorato	1	21	159	Y/C	Throughout the Chapter we use wording that material shall be "specified into the contract documents". Why "specify into" instead of "specify in"?
52.	Fiorato	1	24	172	N	Suggest following response: "The voter's proposed organization has merit, but so does the balloted organizational structure. This tends to be a matter of personal preference. Given that there were not other comments on the balloted structure, no change is proposed."
53.	Barth	1	24	173	C	Response does not appear to give a resolution to the negative.
54.	Carino	1	25	172	Y/C	We could add that the proposal will result in 5 levels of numbers for the provisions.
55.	Carino	1	25	173	Y/C	We can add "See Comment 2." Because we are proposing to change the title.
56.	Fiorato	1	25	177	N	While this is Sub B, it is incorrect. The bars are not "brought to an acceptable condition." Retain

No.	Name	Ballot Item	Pg #	Line #	Y/C or N	Comment
						proposed staff wording, but limit to non-prestressed reinforcement.
57.	Carino	1	25	177	N	I think adding the "shall be brought to an acceptable condition" goes beyond an editorial revision. This implies that one has to worry about mill scale on bars. No one suggested these words be added. I Suggest we use the following revision: Nonprestressed reinforcement with rust, mill scale, or a combination of both shall be acceptable, provided the minimum dimensions, including height of deformations, and weight of a hand-wire-brushed test specimen comply with applicable ASTM specifications.
58.	Carino	1	26	179	Y/C	I agree that this sentence does not belong here. I think that we are covered on permitting epoxy-coated bars because we reference the ASTM specifications. Let's make it clear that we are suggesting that this sentence be deleted for the next ballot. I suggest the following response. "The epoxy-coating provision in 24.3.2.2 is not an installation condition for a construction specification. It is a materials requirement, which is addressed by the references to the applicable ASTM specifications for epoxy-coated bars. Delete the second sentence of 24.3.2.2."
59.	Carino	1	26	180	Y/C	Make the response "See Comment 181."
60.	Carino	1	27	181	Y/C	Remove capital "N" in "nonprestressed."
61.	Carino	1	27	183	Y/C	"See Comments 181 and 182."
62.	Fiorato	1	27	185	Y/C	While this is Sub B, it should say "See Comment 184" not 185.
63.	Carino	1	27	185	Y/C	"See Comment 184."
64.	Carino	1	27	186	N	I think we can overcome the problem, by using the wording in ACI 301. I suggest we propose the following revision: "Prestressing steel shall be clean and free of oil, dirt, scale, and pitting. A light coating of rust that can be removed with fine steel wool shall be permitted."
65.	Fiorato	1	27	188	N	While this is Sub B, why not just say "24.3.2.6 — All reinforcement shall be bent cold unless otherwise permitted by the Licensed Design Professional. <7.3.1>
66.	Carino	1	27	188	N	To avoid confusion, revise the response to "See Comment 205."
67.	Carino	1	28	189	N	The better response is "See Comment 205."
68.	Carino	1	28	190	N	The better response is "See Comment 205."
69.	Carino	1	28	191	N	The better response is "See Comment 205."
70.	Fiorato	1	28	194	N	Suggest rewording response as follows: "24.3.3.1 — Reinforcement, including tendons, and post-

No.	Name	Ballot Item	Pg #	Line #	Y/C or N	Comment
						tensioning ducts shall be accurately placed and secured against displacement within tolerances permitted in 24.2.1(e) or as otherwise specified by the Licensed Design Professional. <7.5.1> <7.10.4.9>
71.	Carino	1	29	194	Y/C	Clean up the proposed change so that it shows only changes being made to the balloted version. "Reinforcement, including tendons and post-tensioning ducts, shall be secured against displacement within required tolerances. The Licensed Design Professional shall state alternatives in contract documents. <7.5.1> <7.10.4.9>,<7.5.2>"
72.	Fiorato	1	29	195	Y/C	Should say "See Comment 194"
73.	Fiorato	1	29	195	Y/C	Should say "See Comment 194"
74.	Carino	1	29	195	Y/C	It should be "See Comment 194."
75.	Carino	1	29	196	Y/C	It should be "See Comment 194."
76.	Carino	1	29	197	Y/C	I'd change "should" to "need to".
77.	Carino	1	29	199	N	I think Staff's suggestion is appropriate. It makes for a simpler provision. Revise the response to: "Move the provision to 24.3.2 and include the changes from comment 202: 24.3.2.7 Post-tensioning ducts exposed to temperatures below 32 °F shall be free of ponded water. <18.17.4>"
78.	Fiorato	1	30	203	N	While Sub B, suggest rewording as "24.3.3.4— Reinforcement partially embedded in concrete shall not be field bent unless explicitly designated in contract documents or otherwise permitted by the Licensed Design Professional. <7.3.2> <7.8.1.4>"
79.	Carino	1	30	203	N	This is confusing. I think the response should be "Delete 24.3.3.4 and see Comment 205 for revised provision."
80.	Carino	1	30	204	Y/C	It should be "See Comment 205."
81.	Fiorato	1	30	205	N	While Sub B, we should not combine plant fabrication and field bending. One is a controlled production operation and the other requires decisions in the field. Suggest rewording as "24.3.2.6 — All reinforcement shall be bent cold unless otherwise permitted by the Licensed Design Professional. <7.3.1>"
82.	Carino	1	31	206	Y/C	From Comments 206 to 209 the response should be "See Comment 205."
83.	Carino	1	32	212	Y/C	"Existing Wording" should be changed to "Balloted Wording" because 3.5.2 in the current Code is not the same as what was balloted. If we remove the reference to ASTM A706, I do not think the word "all" is necessary. Need to clean up typos. The number "160" appears in several places. This was the line number, and has to be deleted. Also "AWS D1.2" should be "AWS D1.4".

No.	Name	Ballot Item	Pg #	Line #	Y/C or N	Comment
84.	Carino	1	34	220	N	Comments 220 to 223 are not related to Comment 212 and I don't think we have responded to the comments to restore "unless otherwise approved by the LDP."
85.	Carino	1	35	228	Y/C	Because we deleted a section in Comment 122, the new number should be 24.3.4.3. Make change in response to 229 also.
86.	Carino	1	35	230	Y/C	The response should be "See Comment 228."
87.	Carino	1	36	232	Y/C	We don't need the "and" after the (a) provision because we already "(a) and (b)". 24.3.5.1 — Prestressing force imparted to the concrete shall be verified by (a) and (b). (a) Measured steel elongation compared with elongation calculated from average load-elongation curves for the prestressing steel used; (b) Observation of jacking force on a calibrated gauge, or load cell, or by use of a calibrated dynamometer.
88.	Carino	1	36	235	Y/C	Need to clean up the revised text: 24.3.5.2 — If the calculated and measured elongation differ by greater than 5 percent for pretensioned members or 7 percent for post-tensioned construction, the cause of the difference shall be ascertained and corrected.
89.	Carino	1	37	243	N	I agree that the provision as written has no requirement. Comment 244 proposes a change that would provide a requirement. I suggest slightly different wording. Change the response to: "Revise the wording as follows: 24.3.5.5 If the transfer of force from the bulkheads of pretensioning bed to the concrete is accomplished by flame cutting prestressing steel, the cutting locations and cutting sequence shall be selected to avoid undesired temporary stresses for pretensioned members.
90.	Carino	1	37	244	N	Change response to "See Comment 243."
91.	Carino	1	37	245	Y/C	Change response to "See Comment 243."
92.	Carino	1	37	246	Y/C	There is a requirement: "strand shall be cut near the member to minimize shock to concrete."
93.	Carino	1	38	249	Y/C	Here is the language as written in 6.3.1 with some modifications: "24.3.6.1 — Embedments of any material not harmful to concrete and in accordance with 24.3.6 shall be permitted in concrete with approval of the Licensed Design Professional, provided they are not considered to replace structurally the displaced concrete, except as permitted in 24.3.6.3."

Sorted Comments Ballot LB11-2 – PART A

As of March 23, 2011

PUBLIC COMMENTS

Last Name	Public Comment #	Vote: Y C* N** A	Comments
Kelly	1	C	<p>The comment refers to the use of “mixture design” in the fifth bullet in the list of “some changes” that appears in the front of the public discussion document. I recommend providing a simple acknowledgement of this at the start of the response and then keeping the remainder of the response as currently written.</p> <p>Accept. Response changed. No changes to Code.</p>
Parra	2	C	<p>Consider adding, as part of the committee response, that in the third paragraph of the section in question it is recommended that the Licensed Design Professional be kept involved in the inspection process. Thus, the code already handles, at least through a recommendation, the concern raised.</p> <p>Accept. Response changed. No changes to Code.</p>
Wyllie	2	N	<p>I object to committing Committee 318 to New Business over a Not Related Comment. Delete “New Business” and change comment to “Not Related to code changes.”</p> <p>Find Not persuasive. The rules for public comment allow for comments on items that have not been changed in the Code or Commentary. It is not appropriate for Committee 318 to disregard any such comments. It is up to each subcommittee to determine whether the recommendation requires a change in the document. No changes to response. No changes to Code.</p>
Dolan	3	C	<p>Darwish’s comment is correct and giving the issue to Sub G is appropriate. My concern with this issue is that prestressed slabs on grade are exempt from the code. As a minimum, they should be subjected to the corrosion protection requirements. Since these specifications moved to ACI 301, it is less clear how they should be treated.</p> <p>This has been a recurring comment. It will be reviewed as new business by a subcommittee to be determined by the SC. Response changed. No changes to Code. See other comments on this item.</p>
French	3	N	<p>If not a sub A issue, response should be provided by appropriate sub. Indicate whether or not it will be addressed as new business.</p> <p>The “not a sub A issue” was part of a comment to Basile that should not have appeared on the ballot. It is not intended that this comment go forward to the public. See comment above by Dolan.</p> <p>Negative withdrawn.</p>
Frosch	3	C	<p>Suggest delete “Not a Sub A issue” from the response.</p> <p>The “not a sub A issue” was part of a comment to Basile that should not have appeared on the ballot. It is not intended that this comment go forward to the public. See comment above by Dolan.</p>
Ghosh	3	N	<p>“Not a Sub A issue” cannot be 318 response to the commenter. A</p>

			<p>legitimate issue has been raised. Should be new business.</p> <p>The “not a sub A issue” was part of a comment to Basile that should not have appeared on the ballot. It is not intended that this comment go forward to the public. See comment above by Dolan.</p> <p>Negative withdrawn.</p>
Holland	3	C	<p>Note: The wording “Not a Sub A issue” on Comment 3 is not part of the response to the public comment.</p> <p>The “not a sub A issue” was part of a comment to Basile that should not have appeared on the ballot. It is not intended that this comment go forward to the public. See comment above by Dolan.</p>
Kelly	3	N	<p>I suggest writing: “Slabs on ground that transfer load from building elements to the ground or foundation elements are to be designed for the internal forces that develop from the forces being transmitted through the slab on ground. Design for these internal axial, flexural and shear forces shall meet the applicable provisions in the code. In some cases the licensed design professional shall have to use his or her judgment in determining the applicable provisions.” The commenter is looking for more guidance in the design of these slabs on ground. I do not know how we could easily achieve this in the building code. This appears to be a topic better suited to be addressed in a guide document prepared by ACI 360 or ACI 302.</p> <p>Accept. Response changed. No changes to Code.</p> <p>Negative withdrawn.</p>
Lobo	3	C	<p>Response cannot state “Not a Sub A issue”</p> <p>The “not a sub A issue” was part of a comment to Basile that should not have appeared on the ballot. It is not intended that this comment go forward to the public. See comment above by Dolan.</p>
Parra	3	C	<p>Which sub-committee is then in charge of this comment?</p> <p>The “not a sub A issue” was part of a comment to Basile that should not have appeared on the ballot. It is not intended that this comment go forward to the public. See comment above by Dolan.</p>
Rabbat	3	C	<p>The Commentor has submitted the same discussion for the last several code cycles. We should invite him to submit a code change submittal according Committee 318 Procedures.</p> <p>See comment above by Dolan.</p>
Wood	3	N	<p>Suggest that this be assigned to Sub R for 318-14</p> <p>See comment above by Dolan.</p> <p>Negative withdrawn.</p>
Wyllie	3	N	<p>Not a Sub A issue is not clear to the public. Change comment to “Not related to code changes.”</p> <p>The “not a sub A issue” was part of a comment to Basile that should not have appeared on the ballot. It is not intended that this comment go forward to the public. See comment above by Dolan.</p> <p>Negative ???</p>
French	4	C	<p>Staff should review and change terminology for consistency.</p> <p>See next comment below. Apparently this is not an issue. Response changed. Code changes already approved. No action necessary.</p>
Rabbat	4	N	<p>Please refer to approved “Committee Response” to TAC Comments, at the top of Page 3571. Committee 318 already approved replacing “design</p>

			<p>drawings or project specifications” with “contract documents.” Staff was instructed as follows:</p> <p><i>Staff should search and replace as appropriate throughout the document.</i></p> <p>See Page 3707, Line 5, where that change was effected. Note, in the document posted for Public Comments (Pages 3705-3798), not all editorial changes were listed. This change was considered an editorial change, and not all locations where it occurs were listed.</p> <p>See comment above. Response changed. No action required.</p> <p>Negative withdrawn.</p>
French	5	N	<p>Fix the wording according to the public comment.</p> <p>No change to response. No changes to Code.</p> <p>Negative withdrawn.</p>
Kelly	6	N	<p>Regarding the comment to remove “Copies of the,” we should adopt this change now. As currently required, copies of contract documents need to bear the seal of a licensed design professional. “Bear the seal” means an original seal not a copy of a seal. Only the original contract documents are required to bear the seal of a licensed design profession. Copies of contract documents can have a copy of the seal. I also don’t understand how we can require a copy of an embossed seal on all of the copies. It is interesting that ACI 318 requires the design professional to seal the contract documents but not sign them. I think that sealing and signing requirements are the responsibility of State Boards and should not be included in ACI 318. The best solution is to eliminate the first sentence of section 1.2.1.</p> <p>Sent to Dolan to look at, 30 March.</p>
Rabbat	6	N	<p>ACI 318 already approved all the commentor’s suggestions. Please refer to approved “Committee Response” to TAC Comments, at the top of Page 3571. Committee 318 already approved replacing “design drawings or project specifications” with “contract documents.” Staff was instructed as follows:</p> <p><i>Staff should search and replace as appropriate throughout the document.</i></p> <p>See Page 3707, Line 5, where that change was effected. Note, in the document posted for Public Comments (Pages 3705-3798), not all editorial changes were listed. This change was considered an editorial change, and not all locations where it occurs were listed.</p> <p>Sent to Dolan to look at, 30 March.</p>
Wyllie	6	N	<p>I object to committing Committee 318 to New Business over a Not Related Comment. Delete “New Business” and change comment to “Not Related to code changes.”</p> <p>Find Not persuasive. The rules for public comment allow for comments on items that have not been changed in the Code or Commentary. It is not appropriate for Committee 318 to disregard any such comments. It is up to each subcommittee to determine whether the recommendation requires a change in the document. No changes to response. No changes to Code.</p>
Kelly	7	C	<p>If “contract documents” may include non-technical and legal documents then Comment 6 has to be addressed now not in 2014. Legal and non-technical documents do not need to be signed by a licensed design professional.</p> <p>Sent to Dolan to look at, 30 March.</p>
Poston	8	C	<p>I think the issue relates to the potential for aluminum to react and evolve</p>

			hydrogen, which could cause an embrittlement issue in prestressing, but not for conventional reinforcing steel or mild steel embedments. However, I agree that the way it is written, one could misconstrue the provision for what is not stated. See comment below.
Rabbat	8	N	I agree with Sub A's response. I am voting No because the current language is misleading. I think we intended the sentence to read: Mixing water for prestressed concrete or <u>and</u> for concrete that will include aluminum embedments... Changing the "or" to "and" does not resolve the problem. We do not define what constitutes a "deleterious amount" of chloride for concrete containing aluminum embedments. Simply referencing the chloride limits in Chapter 4 is not adequate. This change should not be made on the fly. New business. Response changed. No changes to Code. Negative withdrawn.
Rabbat	9	N	This has already been fixed. See Page 2555, Line 10. Change Committee response to: The Committee agrees. This typo was corrected in later printings of 318-08. Therefore, there was no need to list it as a change in the document posted for public discussion. Accept. Response changed. No changes to Code. Negative withdrawn.
Wyllie	10	N	Delete New Business unless Sub A is committed to this. This is legitimate new business that Sub A needs to address. No change to response. No changes to Code. Negative ???
Kelly	11	N	ACI 318 has many serviceability provisions that do not relate to public safety. I suggest that the words "for public safety" be removed from our response. Accept. Response changed. No changes to Code. Negative ??? Email sent to Kelly 30 March.
Corley	12	C	Gajda has a point. It should be clarified! Gajda makes two different points in his comment. Not sure which one is being referred to here. The response has been modified to include both points. No changes to code.
Ghosh	12	C	Correct f3 to F3 Agree, typo corrected in response. No changes to Code.
Rabbat	12	C	Typo: At end of second paragraph, change "f3" to "F3." Agree, typo corrected in response. No changes to Code.
Wood	12	C	Committee response did not address the second concern raised by the commenter. Suggest using the same response as used for #13. Accept, wording added to response to address use of deicer during construction comment. No changes to Code.
Cook	13	C	13: Delete "for the" since it is repeated Accept. Response changed. No changes to Code.

Ghosh	13	C	Replace “for the for the” with “for.” Accept. Response changed. No changes to Code.
Rabbat	13	C	Delete “Not related.” Start the Committee response with: The Committee thanks the discussor for sharing his experience. A subcommittee of ACI 318 is currently reviewing... Unless we describe the responsibilities of Sub A, it may be meaningless to the discussor to refer to Sub A. This portion of the Code was not changed, hence “not related” is correct. Accept “a subcommittee.” Response changed. No changes to Code.
Seguirant	13	C	“...requirements for the for the exposure classes...” Same on comment 14. Accept. Response changed. No changes to Code.
Wood	13	C	Delete the repeated “for the.” Accept. Response changed. No changes to Code.
Ghosh	14	C	Replace “for the for the” with “for.” Accept. Response changed. No changes to Code.
Lobo	16	C	Commenter is correct. An editorial revision should be made. See Parra comment below.
Parra	16	C	Actually, the figure says “average s_s ”, which is equivalent to s_s with a bar. Thus, the current figure is correct. Agree. Response modified. No changes to Code.
Wyllie	16	N	I object to committing Committee 318 to New Business over a Not Related Comment. Delete “New Business” and change comment to “Not Related to code changes.” Find Not persuasive. The rules for public comment allow for comments on items that have not been changed in the Code or Commentary. It is not appropriate for Committee 318 to disregard any such comments. It is up to each subcommittee to determine whether the recommendation requires a change in the document. No changes to response. No changes to Code.
Rabbat	17	N	Change response to: This typo was fixed in later printings of 318-08. Therefore, there was no need to list it as a change in the document posted for public discussion. Accept. Response changed. No changes to Code. Negative withdrawn.
Rabbat	18	N	Change Response to: The Committee disagrees. Redundancy is felt appropriate in this case. Change response to: The requirement to meet the durability requirements of Chapter 4 appears multiple times. This redundancy is being reduced in the development of the 2014 version of the Code. No changes to the Code. Negative ??? Basile has refused to withdraw his negative on this one. He objects to the second sentence in the proposed response.
French	19	C	Staff should review and change terminology for consistency. No change to response. No changes to Code.

Becker	20	N	<p>Why would we not want 318 and 301 to be consistent?</p> <p>Becker refuses to withdraw his negative.</p> <p>Find not persuasive. Reason statement to be discussed in Tampa. Note that this one is related to changes made in the 2011 Code.</p>
Rogowsky	20	N	<p>The proposed response indicates that 301 is free to be more stringent. If the public comment is correct, 301 is less stringent than 318. I suggest that 318 use the same criteria as 301.</p> <p>Email sent to Rogowsky 31 March.</p>
Lobo	21	C	<p>The response should indicate that the subcommittee is considering a change. This has been identified as an error.</p> <p>This is a valid comment. However, Sub A does not currently have a CA item related to this comment. No change to response. No changes to Code.</p>
Wyllie	21	N	<p>I object to committing Committee 318 to New Business over a Not Related Comment. Delete "New Business" and change comment to "Not Related to code changes."</p> <p>Find Not persuasive. The rules for public comment allow for comments on items that have not been changed in the Code or Commentary. It is not appropriate for Committee 318 to disregard any such comments. It is up to each subcommittee to determine whether the recommendation requires a change in the document. No changes to response. No changes to Code.</p>
Wyllie	22	N	<p>I object to committing Committee 318 to New Business over a Not Related Comment. Delete "New Business" and change comment to "Not Related to code changes."</p> <p>Find Not persuasive. The rules for public comment allow for comments on items that have not been changed in the Code or Commentary. It is not appropriate for Committee 318 to disregard any such comments. It is up to each subcommittee to determine whether the recommendation requires a change in the document. No changes to response. No changes to Code.</p>
Becker	23	N	<p>Why would we not want 318 and 301 to be consistent?</p> <p>Becker refuses to withdraw his negative. This comment was on a Public Comment that was not related to a change in the 2011 Code.</p> <p>Find not persuasive. Change response to indicate that a subcommittee of 318 will review the issue as new business. No changes to Code.</p>
Fiorato	27	C	<p>In response to Babbidge (No. 27) the responsible ASTM Subcommittee is C09.40 not C09.60.</p> <p>Agree, see next comment.</p>
Lobo	27	N	<p>The response should be corrected. The reference should be to ASTM C172 (sampling) and not C94.</p> <p>See above comment. Lobo has agreed to accept Fiorato's recommendation. Response changed. No changes to Code.</p> <p>Negative withdrawn.</p>
French	28	C	<p>Staff should review and change terminology for consistency.</p> <p>See comments 5 and 19. Sub A will look at all instances of this usage. No change to response. No changes to Code.</p>
Wyllie	29	N	<p>I object to committing Committee 318 to New Business over a Not Related Comment. Delete "New Business" and change comment to "Not Related</p>

			<p>to code changes.”</p> <p>Find Not persuasive. The rules for public comment allow for comments on items that have not been changed in the Code or Commentary. It is not appropriate for Committee 318 to disregard any such comments. It is up to each subcommittee to determine whether the recommendation requires a change in the document. No changes to response. No changes to Code.</p>
Wyllie	30	N	<p>I object to committing Committee 318 to New Business over a Not Related Comment. Delete “New Business” and change comment to “Not Related to code changes.”</p> <p>Find Not persuasive. The rules for public comment allow for comments on items that have not been changed in the Code or Commentary. It is not appropriate for Committee 318 to disregard any such comments. It is up to each subcommittee to determine whether the recommendation requires a change in the document. No changes to response. No changes to Code.</p>
Corley	32	C	<p>Consider as New Business.</p> <p>Agree. Response changed. No changes to Code.</p>

Document: Building Code Requirements for Structural Concrete (ACI 318-11) and Commentary

Public Discussion Period: December 1, 2010 – January 17, 2011

No.	Public Commenter Name	Pg #	Line #	Public Comment	Committee Response
1.	Ava Shypula	1	0	SUB A Proposed Changes to ACI 318-08 Open for Public Discussion – Test records ... for <u>mixture design</u> . Term “mixture design” was replaced by 211 committee with “mix proportion.”	A The term “mixture design” was used in the description of changes to the Code. A search of the version of 318-08 contained in the 2008 version of the MCP did not find the term “mixture design.” A search of the proposed changes also failed to find use of this term. No changes are required.
2.	Mark W Cunningham	3707	R1.3.1	5 th paragraph. Existing commentary calls for inspection reports to be promptly distributed to the “licensed design professional responsible for the design”, however this licensed design professional might not be the one contracted for construction phase. Why should the design engineer who is not being paid for construction phase receive inspection reports and potential liability for something he has no control over? This should be changed to “licensed design professional in responsible charge”.	A Not related. Note that in the third paragraph of the section in question it is recommended that the Licensed Design Professional be kept involved in the inspection process. Thus, the code already handles, at least through a recommendation, the concern raised. New business.
3.	Nasser Darwish	3707	1	1.1.7. Although 1.1.7. states that the code implicitly governs the design of slabs on grade where the slab transmits vertical or lateral loads from other portions of the structure to the soil, however, it does not include explicit provisions for that, e.g. structurally active or actively reinforced slabs on grade. This has been going on since several codes versions, and although such issue was intended, at one point of time, to be included as “further work” by the code committee several years ago, it seems that this was not fully accomplished. The writer feels that it is time to include such issue in the code. The committee is kindly requested to see to that in this or future code versions.	A Not related. Slabs on ground that transfer load from building elements to the ground or foundation elements are to be designed for the internal forces that develop from the forces being transmitted through the slab on ground. Design for these internal axial, flexural and shear forces shall meet the

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					<p>applicable provisions in the code. In some cases the licensed design professional shall have to use his or her judgment in determining the applicable provisions.</p> <p>This comment will be referred to the appropriate subcommittee for consideration as new business.</p>
4.	Mark W Cunningham	3707	1.3.2	Change existing “design drawings and specifications” to “contract documents” to be consistent with update to 1.2.1. I suggest searching entire code and commentary for same change elsewhere, as they should be consistent in this respect.	<p>A Not related.</p> <p>This change was approved by Committee 318 and was supposed to have been made. Staff will correct all occurrences.</p>
5.	Mark W Cunningham	3707	1.3.2.a	Existing par. “a” includes inspection reports of “all classes of concrete mixtures”. Delete “classes of” because reports should be required for all design mixtures, not just for each “class”. Note that Chapter 5 uses exposure “classes”, a different meaning, which could result in confusion.	<p>A Not related.</p> <p>New business. See Comment 19.</p>
6.	Anthony Felder	3707	5	<p>Lines 5-8 Corresponding revisions to R1.2 and R1.2.1 are also needed:</p> <ul style="list-style-type: none"> • Change title of R1.2 to “Contract documents” • In R1.2.1, change both “design drawings and specifications” and “design drawings, details, or specifications” to “contract documents”. <p>Suggest adding new sentence at end of R1.2.1: “All changes to contract documents should be clearly identified, with revision dates and numbers.”</p> <p>Finally, to simplify 1.2.1, suggest changing beginning to “Contract documents . . .” In other words, remove “Copies of the”.</p>	<p>A Accept the proposed changes as editorial for these locations.</p> <p>See Comment 4 regarding terminology inconsistencies .</p> <p>Not related New business.</p> <p>Not related New business.</p>
7.	Nasser Darwish	3707	5	1.2. Contract Documents Drawings and Technical Specifications	A

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				Suggest using the title " <i>Drawings and Technical Specifications</i> " Reason: Contract documents may include other non-technical and legal documents and provisions including the contract itself, which may be outside the scope of 318 code.	Not accepted. "Contract documents" is the preferred term.
8.	Mark W Cunningham	3712	3.4.2	Existing provision "Mixing water for prestressed concrete or for concrete that will contain aluminum embedments...shall not contain deleterious amounts of chloride ion. See 4.3.1" is unclear. It is saying that nonprestressed concrete that doesn't contain aluminum embedments can be made with mixing water containing deleterious amounts of chloride ion. Also, it implies that aluminum embedments are fine, except for this particular requirement. Change to "Mixing water, including that portion of mixing water contributed in the form of free moisture on aggregates, shall not contain deleterious amounts of chloride ion. See 4.3.1."	A Not related Comment is appropriate. Chloride provisions will be reviewed as new business. The use of the term "deleterious" is not clear.
9.	Mark W Cunningham	3716	R4.3.1	5 th paragraph should refer to Table 4.2.1, not Table 4.3.1.	A Not related. The Committee agrees. This typo was corrected in later printings of 318-08. Therefore, there was no need to list it as a change in the document posted for public discussion.
10.	William C. Sherman	3716	1	Chapter 4 does not include any changes to the required concrete compressive strengths that relate to water-cementitious materials ratios; however, many engineers feel that the required minimum compressive strengths specified in Table 4.3.1 are higher than needed for the related w/cm ratios in the table, such that the strengths shown control concrete mix designs. I recommend that the following strengths be shown to correspond to the noted w/cm ratios: <ul style="list-style-type: none"> • 3500 psi for 0.50 w/cm • 4000 psi for 0.45 w/cm • 4500 psi for 0.40 w/cm Note: I've attached a copy of documentation for these recommendations that I had submitted to the ACI 318 Committee by email on 9/20/2010. [Staff Note: Correspondence on file at Headquarters, if needed.]	A Not related Sub A has Mr. Sherman's correspondence, which will be addressed as new business.
11.	Damodara Bhat	3716	1	One of our customers for power plant specifies the design life of	A

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				<p>concrete structures to be of 50 years with specified compressive strength of concrete of 37.5MPa, minimum cement content of 370kg/m³, 8-10% of micro-silica, epoxy coated rebars. These specifications are for both above ground and below ground concrete structures (Type V cement for below ground and Type I cement for above ground).</p> <p>These requirements may be too conservative even for corrosive sulfate and chloride desert environment.</p> <p>Hence, correlation between durability of Concrete should be defined with life of structure like 30 years, 50 years, 60 years for various usages like industrial, residential, etc. Please include the necessary guidelines for correlation.</p> <p>Please include tables giving the recommended minimum contents of cementitious materials, requirements of micro-silica (silica fumes), epoxy coated rebars, types of cements for various exposure categories and buildings</p>	<p>Not related</p> <p>The Code establishes minimum provisions and does not attempt to address service life of structures. Service life of a structure is the choice of the owner and the responsibility of the LDP in contract documents, provided the minimum requirements of the Code are met.</p>
12.	John Gajda	3716	1	<p>My comment related to a portion that was not updated but should be updated. In section 4.2.2, the following language should be added, or it should be added in the commentary. "The limits shown in Table 4.4.2 do not apply to concrete used in exposure class F0, F1, or F2. These limits can be exceeded when specific testing of the proposed concrete shows acceptable performance." This change is needed because the limits in Table 4.2.2 are often taken as maximum limits that apply to all concrete, since there is no limit stated for the other exposure conditions.</p> <p>I also recommend that some commentary be added for deicer used for worker safety during construction on concrete that will be indoors after the building is enclosed. This sounds silly but I have seen this concern once too often.</p>	<p>A Not related.</p> <p>4.4.2 explicitly states that the limits are for Exposure Class F3. Title of Table 4.4.2 explicitly includes exposure class F3. No change is required.</p> <p>A subcommittee of 318 is currently reviewing requirements for exposure classes F1 to F3. Changes may be included in the 2014 Code.</p>
13.	Michael Cunningham	3716	4	<p>In ACI 318-08, the durability requirements were modified, classifying freeze-thaw resistance with values F0 to F3. In table 4.3.1, it requires all concrete exposed to freeze-thaw cycles (exposure classes F1 to F3) to have a minimum 28-day compressive strength of 4500 psi. In our geographic area, it is standard construction to use concrete frost walls</p>	<p>A Not related.</p> <p>A subcommittee of 318 is currently reviewing requirements for exposure</p>

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				and basement walls, typically constructed of 3000 psi concrete. I have been practicing for over 30 years, with much of my work involved in evaluation and repair of in-place construction. I cannot recall a single instance where concrete foundations specified as 3000 psi, have needed repair unless damaged by some unplanned or undesigned loading condition. The specification of 4500 psi for foundations creates a number of difficulties including a lack of proven mix designs. In our area, many of the concrete suppliers have limited record-keeping. It would be extremely rare for any of them to have experience with a 4500 psi, air entrained mix that could serve to qualify for the field experience method of mix design. Please reconsider this requirement for the upcoming release of ACI 318-11.	classes F1 to F3. Changes may be included in the 2014 Code.
14.	Mark W Cunningham	3716	4	Table 4.2.1 What is an example of a P0 exposure, where concrete is in contact with water but can be permeable? The commentary indicates P1 applies “when the permeation of water into concrete might reduce durability”. So, it would seem that P0 would never apply to reinforced concrete since the reinforcement would be more susceptible to corrosion. P0 could apply to plain concrete. Also note that this is discussing permeability into concrete, not through concrete which would be leakage criteria which is not directly controllable via the concrete mixture. Finally, if you have P1, you really have either C1 or C2. It seems the P exposure category is not necessary.	A Not related. A subcommittee of 318 is currently reviewing requirements for exposure classes P0 and P1. Changes may be included in the 2014 Code.
15.	Mark W Cunningham	3717	5.1.2	“Requirements for f'_c shall be based on tests of cylinders made and tested as prescribed in 5.6.3.” However 5.6.3 is for cylinders constructed in the field. Note that ASTM C172 and C31 referred to in 5.6.3 are both for field fabricated cylinders. What if trial batches are used, not field test results? Then 5.1.2 doesn’t work.	A Not related. New business.
16.	Mark W Cunningham	3718	Fig R5.3	When two groups of tests are used, “Calculate average S_s ” should have a bar above S_s , because per R5.3.1, S_s with a bar above it is the combined statistical average, which is different than S_s without a bar above it.	A Not related The figure says “Calculate average s_s .” Average s_s is the same as using a bar. No change required.
17.	Mark W Cunningham	3718	5.1.4	“ f'_{ct} ” should be “ f_{ct} ”, with no prime.	A Not related. This typo was fixed in later

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					printings of 318-08. Therefore, there was no need to list it as a change in the document posted for public discussion.
18.	Mark W Cunningham	3718	5.2.3	“and shall meet applicable requirements of Chapter 4” should be deleted since it’s stated in 5.2.1.b.	A Not related. The requirement to meet the durability requirements of Chapter 4 appears multiple times. This redundancy is being reduced in the development of the 2014 version of the Code.
19.	Mark W Cunningham	3718	5.6.2	Replace “class” with “mixture”. Note that Chapter 5 uses exposure “classes”, a different meaning, which could result in confusion because different mixtures are commonly required for different exposure classes.	A Not related. A search of 318-08 found that the terminology has not been used consistently in more locations than identified by the comment. A complete review will be addressed as new business.
20.	Mark W Cunningham	3718	6	(5.3.1.1) 24 months differs from ACI 301-10 which requires 12 months. Since this is just to establish standard deviation, and test results only have to represent concrete produced to meet a specified compressive strength within 1000 psi of $f'c$, there is no compelling reason why this time period should be extended to 24 months.	A The time period was changed from 12 to 24 months in response to a public comment on the 08 version. 318 establishes minimum requirements. 301 is free to be more stringent.
21.	Mark W Cunningham	3718	6	ACI 301-10 requires the test results used to establish standard deviation to be over a period of no less than 60 calendar days. This is an important representation of quality control over time. It would be expected that if all the tests were completed in one day, that the standard deviation would be significantly less than if performed over 60 days. Currently, 318 only has a time period (45-days) when less than 30 tests are used (5.1.3.2).	A Not related. New business.

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22.	Mark W Cunningham	3718	6	5.3.1.1.c “or two groups of consecutive tests totaling at least 30 tests” add “each group not less than 10 tests” to be consistent with ACI-301. This is necessary for statistical validity.	A Not related. New business.
23.	Mark W Cunningham	3718	13	(5.3.1.2) ACI 301 requires not less than 60 calendar days.	A Not related. 318 establishes minimum requirements. 301 is free to be more stringent.
24.	Ava Shypula	3718	17	Lines 17, 18, 19 I strongly object to the proposed changes under Paragraph 5.3.3. By adding proposed changes to 5.3.3, lines 17 and 18, I want to bring to the attention of the 318 committee members, that these changes may drastically impact concrete industry. The proposed sentence that starts on Line 17 and continues to Line 18 and 19 that reads “the field strength test records or <u>trial mix</u> should not be more than 24 months old ...” establishes completely new requirements for the <u>lab trial mixes</u> . In no place in 318 have there been any limit of “12 months” for the lab trial mixtures. By adding this sentence, there could be a stipulation that previous codes had requirements for trial mixture to be a maximum of 12 months old, which is not the case. It may be interpreted that the new revisions are imposing maximum 24 months lifetime on the lab trial mixtures. If that is the intent of the committee to impose a time limit on “laboratory trial mix batches,” I believe that the members of the ACI community should be given a clear version of proposed changes open for more thorough review and discussions.	A The 24-month limit is intended to take into account changes in materials. It is the intention of Committee 318 that the 24-month limit includes data from laboratory trial mixtures No reason has been presented to explain why changes in materials is not a concern if trial mixtures are used to establish mixture proportions.
25.	D. Gene Daniel	3718	24	Lines 24-25 Delete the proposed insertion in 5.6.1 of “The testing agency performing acceptance testing shall comply with ASTM C 1077.” The inclusion in 318-11 of a requirement for acceptance – rejection testing to be performed by a laboratory meeting all of the requirements of ASTM C 1077 sounds like a step forward, but in fact it is not and does not belong in this Code. In the Code it becomes mandatory and the local A/E or Owner also loses control.	A It is the intent of Committee 318 to reference ASTM C1077 as a minimum requirement for laboratories performing acceptance testing. Minimum requirements in a laboratory’s quality system, inspections, reference sample testing and

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				<p>ASTM C 1077 has problems that are not obvious to people not close to the testing industry. I have called this well intentioned standard a “Paper Tiger” because of its many requirements that require a mountain of paper work, but cannot reach into the ethics and moral areas of life and business. It is the later areas that dictate good or bad testing.</p> <p>The Code and its framers do not understand that many areas of the nation do not have choices of using C1077 laboratories that perform their duties in a competent, ethical, and moral manor. Their only choices may be limited to a poor performing C 1077 laboratory or a good performing smaller laboratory that is not C 1077 certified. As a producer I want the better laboratory doing acceptance-rejection testing. I judge laboratories on their field and laboratory performance and not on their Quality System Manual. ASTM C 1077 only sets requirements for laboratories and has not designated any method of observing and checking the actual field testing methods used by a laboratory. Thus the most important element of a possible laboratory evaluation system remains missing.</p> <p>Most Construction Material Laboratories use ACI certified testing personnel, but many of these laboratories make no attempt to satisfy ASTM C 1077 due to the excessive paperwork involved that does not benefit the user. Local A/E’s and ready-mix producers are better positioned to evaluate local laboratories than is an ACI or ASTM committee.</p> <p>What is traditional in many areas is a reference to ACI 301 or ASTM C94 or both in the specifications and this handles the testing situation quite nicely. Ethics and morals cannot be legislated therefore ASTM C 1077 should not be included as a part of the Code. Delete this proposed addition to the Code in section 5.6.</p>	<p>qualifications as addressed in ASTM C1077 are considered essential to laboratories performing acceptance testing. As with reference to any standard in ACI 318, there is no intent to address ethics and morality. ACI 301 and ASTM C94 require laboratories to conform to ASTM C1077, as does ACI 311.6, <i>Specification for Ready Mixed Concrete Testing Services</i> and this change in ACI 318 is consistent with those standards. Problems with the details and associated paperwork required by the ASTM standard can be addressed with the appropriate ASTM subcommittee. ACI 318 is silent on the method by which a laboratory documents conformance to ASTM C1077. That aspect is addressed in ACI 311.6.</p>
26.	Gary Ehrlich	3718	29	<p>Lines 29-31 I believe the IRC permits use of ACI 318 as a design option without the involvement of a registered design professional, provided the statutes of the local jurisdiction permit dwellings under the IRC scope to be designed without an RDP. The language in Section 5.6.1 of ACI 318 could result in a conflict with the IRC.</p>	<p>A The proposed change deals only with distribution of reports. If there is no LDP on a project, no report will be provided.</p>

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27.	Scott Babbidge	3718	32	<p>Section 5.6.2.3. The above section should also have a line added to state that any concrete delivered that is less than 50% of the capacity of the mixer drum should not be used to evaluate acceptance of the concrete.</p> <p>There has been to many instances that concrete has been rejected on jobs when less than 5 cy's of concrete has been ordered for a pour. Inspector test it and finds that it is out of specification for the project, primarily air contents. There should be some type of revision to include minimum load size for concrete testing acceptance or contractors need to order larger loads in order to get past 50% of the mixer capacity.</p> <p>This situation cost ready-mix producers plenty, especially on start ups and when jobs wind down.</p>	<p>A Not related.</p> <p>This seems to be an issue for ASTM C 09.40, which is responsible for C 94. This item will be referred to ASTM C09.40 for review.</p>
28.	Mark W Cunningham	3719	R5.6.2.1.a & b	Replace "class" with "mixture". Note that Chapter 5 uses exposure "classes", a different meaning, which could result in confusion because different mixtures are commonly required for different exposure classes. There are other occurrences of "class" throughout entire document, and I suggest a search for same, and changing where appropriate (e.g. R5.6.3.4).	<p>A Not related.</p> <p>See Comment 19.</p>
29.	Mark W Cunningham	3719	R5.6.2.2	Change last sentence of first paragraph "Not more than one test (as defined in 5.6.2.4) should be taken from a single batch, and no adjustments may be made to the concrete, including the addition of water, after the sample is taken."	<p>A Not related.</p> <p>New business.</p>
30.	Mark W Cunningham	3719	R5.6.5	Insert "and licensed design professional" after "The building official."	<p>A Not related.</p> <p>New business.</p>
31.	Tim Kaiser	3719	19	Suggest replacing "unit weight" with "density", per ASTM C 138	<p>A Not related.</p> <p>Accept change as editorial. Make same change in R5.8.</p>
32.	Mark W Cunningham	3720	6.3.2	Change to: "Aluminum embedments in concrete shall be coated..." It should also apply to non-structural concrete.	<p>A Not related.</p> <p>New business.</p>

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